

# Surgeon General's Report 2014



CONSOLIDATION  
INNOVATION  
READINESS



Canadian Forces Health Services Group



National  
Défence

Défense  
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Canada



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## SURGEON GENERAL'S ADDRESS

In summarizing the past four years of Canadian Forces Health Services Group (CFHSG) efforts and achievements, these pages also serve as a reference for its current organization, functions, and future direction. Since the last report in 2010, CFHSG has supported a cycle of operations and exercises in accordance with the Canada First Defence Strategy's missions. These have included the final period of Canadian combat operations in southern Afghanistan, assisting the development of the Afghan military health system in Kabul and Mazar-e-Sharif, humanitarian assistance missions in the Philippines and other parts of the world, a series of Arctic readiness exercises, domestic disaster relief in Alberta, and a recent resumption of support to operations in Iraq.

This period presented us many challenges in providing our wounded colleagues the best possible acute combat casualty care, treatment and rehabilitation of those suffering longer-term physical and mental health consequences, and readiness for subsequent and future operations. It required post-Afghanistan consolidation and institutionalization of our clinical and operational lessons learned, their dissemination for the benefit of our allies and civilian counterparts, and expanded research to address many areas for improvement in military healthcare and force protection. New or resurgent threats called for a resumed focus on health service support in Arctic cold-weather operations, chemical- biological- radiological- nuclear defence, special operations, and humanitarian assistance and disaster relief. As progressively increasing resources were allocated to military health despite the impact of the global financial crisis, our duty of fiscal responsibility required special care and increased performance measurement to maximize the health system's efficiency.

Several aspects of these challenges require relentless ongoing attention and improvement over the coming years based on objective, scientifically robust approaches, such as our mental health and population health strategies. External military and civilian experts have, however, independently and consistently recognized CFHSG as a national and international leader in many areas of health and research since 2010, including mental health, trauma management, medical interoperability, health system organization and management, patient safety, quality of care, and several others. Among other ways, this was reflected by the many national and international awards and leadership positions held by CFHSG members, achievement of a health system

accreditation level surpassing the national authority's standards, praise for our mental health leadership and programs by the top national and foreign mental health experts, achievement of history's highest war casualty survival rate, the second-ever award of NATO's highest honour for medical support, and special recognition from our sovereign, Her Majesty the Queen, and our Colonel-in-Chief, Her Royal Highness the Princess Royal, in the form of the third Royal Banner ever presented to an element of the armed forces.

I expect CFHSG to maintain this standard over the next four-year period for two reasons. First, the health of Canadian Armed Forces (CAF) members remains the highest priority to Canada's military and political leaders, as reflected by the extensive resources and support they allocate to military health. Second and most importantly, CFHSG members are extraordinarily dedicated to promoting, protecting, and restoring the health of their colleagues through unceasing effort and innovation. This was reflected in Afghanistan by their unprecedented clinical success in one of the world's harshest and most hostile environments, and by the sacrifice of our personnel in the field who suffered the highest number of wounded and killed-in-action after the combat arms. Whatever future challenges they face in protecting the health and lives of their military colleagues and distressed civilian populations around the world, they will, as always, do their duty nobly and selflessly.



Brigadier-General Jean-Robert Bernier  
Surgeon General



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*"... (you are) considered national and international leaders in primary care, pre-hospital care, mental health, trauma management, critical care, emergency and disaster medicine, rehabilitation, and other areas of military medicine. Your contributions to and leadership of military health research are among the greatest of all our allies, and much of the new knowledge you generate can be applied to the great benefit of civilian populations. This Royal Banner honours and recognizes the dedication, courage, valour and sacrifice that you and your comrades who fell in Afghanistan have so faithfully demonstrated in doing your duty..."*

Her Royal Highness The Princess Royal, 2013

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# WHO WE ARE



The Governor General of Canada and Commander-in-Chief of the CAF officially announced Her Majesty the Queen's approval in July 2013 to re-designate the Canadian Forces Medical Service and Medical Branch to "The Royal Canadian Medical Service" in recognition of its heroic service in operations.

As Canada's fourteenth health jurisdiction, CFHSG is also its most integrated and complex in providing health services to CAF personnel anywhere in Canada and around the world in permissive or hostile environments. It comprises an integrated system of military and civilian health professionals providing patient-focused, comprehensive, and evidence-based clinical, occupational, environmental, operational, and dental services, as well as military health research, training, education, and advice in support of the Canada First Defence Strategy.

The health of CAF personnel is a top priority for both the CAF and the Government of Canada. The Universality of Service or "soldier first" principle requires that CAF members, including CFHSG personnel, be physically fit, employable, and deployable at all times. The Surgeon General's obligation to CAF personnel is to provide the services necessary to promote and maintain good health and mental well-being, prevent disease and injury, diagnose and treat injury, illness, and disability, and facilitate rapid return to operational fitness or to the best possible degree of health. Because mental and physical resilience can determine success or failure in military operations, CAF personnel must achieve and maintain a high standard of health and fitness.

CFHSG supports CAF operational readiness by promoting healthy lifestyles and physical fitness, delivering high-quality preventive and restorative care in garrison, and providing operational health services. Care provided to ill and injured CAF personnel is tailored to meet individual needs in order to optimize recovery and quality of life. By maintaining close relationships with the health services of allies and civilian health authorities, CFHSG strives to provide CAF members the best possible domestic and operational force health protection, clinical care, and rehabilitative services available.

CFHSG is a key component of the Defence Team and comprises approximately 6350 military and public service personnel and 550 contracted health care providers. Its mandate is threefold:

- 1 DELIVER HEALTH SERVICES**
- 2 PROVIDE DEPLOYABLE HEALTH SERVICES CAPABILITIES TO SUPPORT OPERATIONS**
- 3 PROVIDE HEALTH ADVICE**



Continually focussed on maximizing effectiveness and efficiency, CFHSG is driven by an evidence-based, best-practice, and performance-measurement culture. Its highly trained health professionals, recognized internationally for excellence, are leaders in collaborative and interdisciplinary care. Its structure integrates a broad range of skills and expertise from 48 health occupations and specialties to best address the needs of patients, commanders, and operations.

CAF personnel have access to at least an equivalent standard of healthcare and publicly funded benefits and services that Canadians receive under provincial healthcare plans. The “Canadian Forces Spectrum of Care” document, which sets one standard for all CAF personnel, describes these benefits and services.

CFHSG provides health services in two distinct environments: in garrison and on deployment. In Canada, every military base provides in-garrison care, while overseas we provide health services whenever and wherever CAF personnel deploy. These closely linked CFHSG services ensure that personnel are healthy, thereby increasing deployment readiness and reducing the risk of health emergencies on deployment.

CFHSG is constantly adapting and improving to meet the challenges of delivering healthcare to a large and highly mobile population throughout Canada and the world. Health services must be flexible enough to meet the demands of the context in which we provide it, including at or under the sea as well as on land in all geographical and climatic conditions, in any circumstance of danger, and in extreme environments. The basic principles of health services delivery are common to all environments, but each environment has unique challenges. In any military environment, the number of routine health problems far outnumbers operational casualties, even in warfare.

## CFHSG Across Canada

Reporting to the Chief of the Defence Staff for clinical-scientific matters, and to the Chief of Military Personnel for command and administrative matters, the Surgeon General commands almost all CAF health resources as Commander of CFHSG.

CFHSG Headquarters in Ottawa is supported by two regional formations that manage and respond to domestic requirements: 1 Health Services Group (1 HSG) for western Canada and 4 Health Services Group (4 HSG) for eastern Canada. Health advisory and planning organizations also support the commanders, staff, and subordinate formations of the Royal Canadian Navy, the Canadian Army, the Royal Canadian Air Force, the Canadian Joint Operational Command, the Canadian Special Operations Forces Command, and each domestic CAF

regional Joint Task Force (JTF). CFHSG elements in the USA also support the Canadian Defence Liaison Staff (Washington), the U.S. Defense Intelligence Agency, U.S. Transportation Command, and U.S. Northern Command.

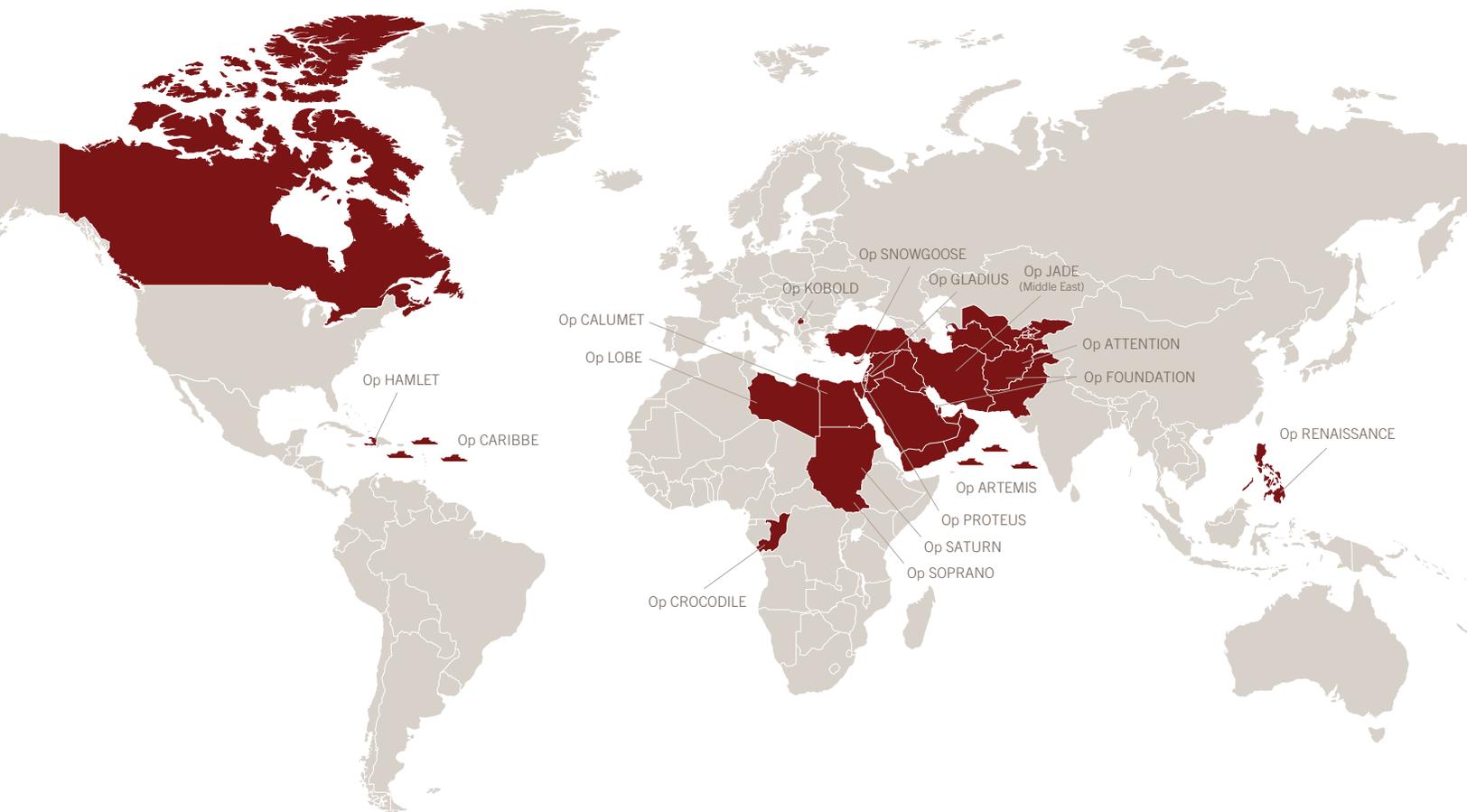
CFHSG is composed of 43 units and 83 detachments in Canada (as well as two detachments in the U.S. and four detachments in Europe) including health services centres, field ambulances (mobile medical units), a field hospital, two schools, two trauma training centres, two medical simulation centres, one aeromedical evaluation flight, a research establishment, and a medical equipment depot. It is one of the largest employers of paramedics in Canada, and Canada's largest dental organization focused on a single-patient population.



## CFHSG Spanning the Globe

At the end of 2013, CFHSG supported 16 international missions, ranging from Afghanistan with more than 450 deployed CAF personnel, to Cyprus with only one CAF member. At any given time during that fiscal year, 50 CFHSG personnel were deployed in support of these missions.

Supporting the missions directed by the operational commands, CFHSG planners establish health services appropriate to diverse operational environments such as the jungles of Central Africa, the deserts of the Middle East, and ships off the Horn of Africa, and in the Arabian and Caribbean seas.



## WHO WE ARE

### Health services provided by both CFHSG and provinces

- hospital services
- physician services
- partial vision care
- in-patient drugs and biologics
- core immunizations
- limited environmental and workplace health
- continuous professional education
- health infrastructure

Although the per capita cost of the CAF health system is higher than that of provincial health systems, roughly half the CAF cost is for military readiness, capabilities, and activities that no provincial system is required to maintain. The graphic below illustrates some of the activities that are unique to the CAF health system. Provincial health systems do not engage in the activities below the water line. Both CAF and provincial health systems are engaged in the activities above the water line, but their costs can often be greater for the CAF due to a generally higher number of CAF injuries resulting from necessarily intense field and physical fitness training, the greater physical danger and moral burden of care for which readiness must be maintained, CFHSG's geographic dispersion across Canada and overseas, and the CAF's relatively fewer economies of scale compared to provinces serving much larger populations.

Much of CFHSG's higher per capita cost arises from the need to maintain the capability to rapidly move treatment facilities up to a tertiary care general hospital or trauma centre anywhere around the world within days, to have all its staff trained to survive warfare and lesser military and environmental threats in extremely hostile environments (including under enemy fire, chemical, biological, radiological and nuclear (CBRN) attack, tropical infectious diseases, and many environmental or industrial health hazards (EIHH) never encountered in Canada), provide the expert intelligence, planning and advice necessary to conduct military and humanitarian assistance operations, and to maintain trained medical manoeuvre units ready to continually move rapidly in hostile conditions to support mobile combat forces in battle.

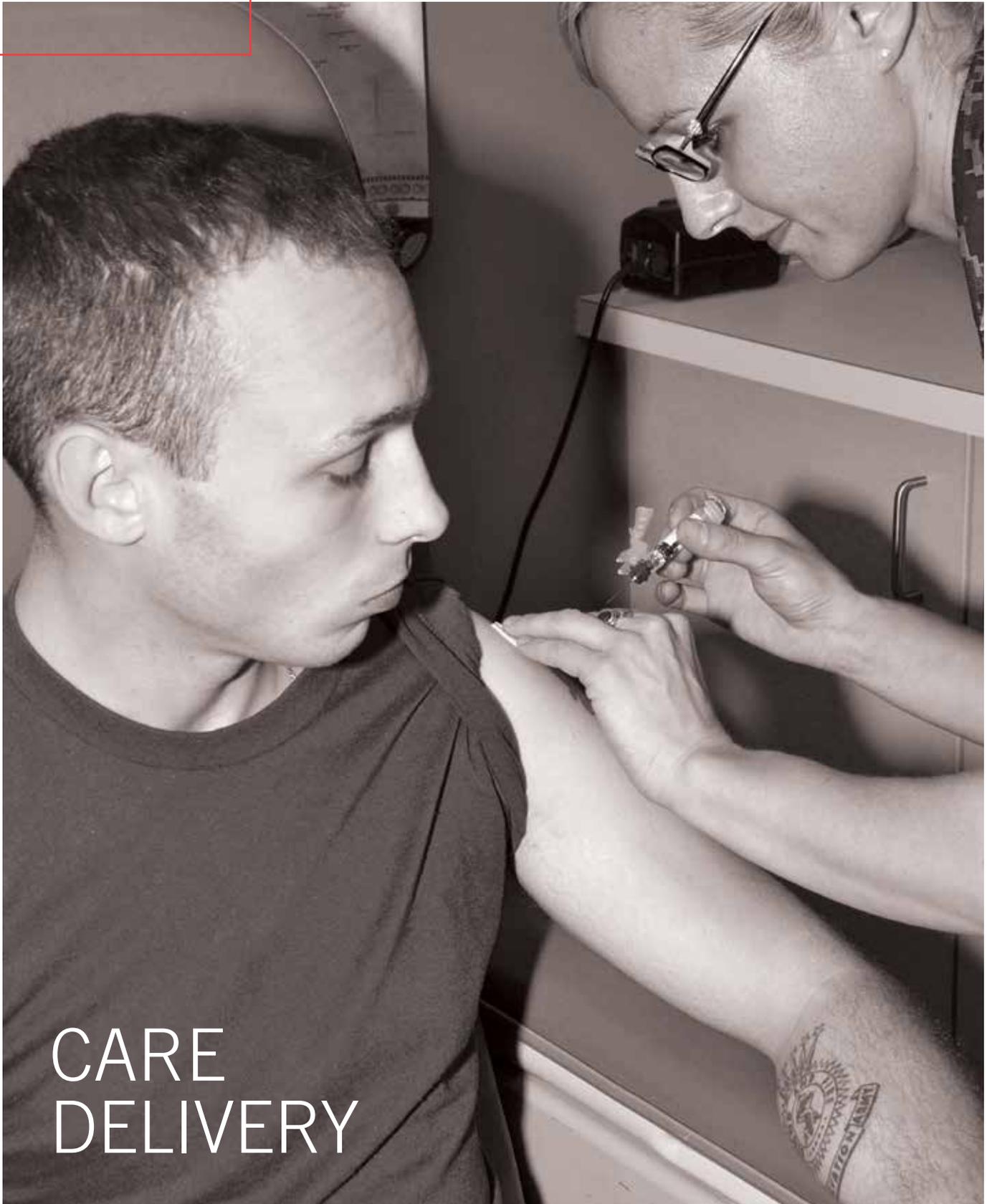
### Additional health services that provinces generally do not provide – approximately 50% of total CFHSG budget

- conduct of military and humanitarian assistance/disaster relief operations – domestic and overseas
- generation and readiness of deployable personnel and mobile medical facilities capable of surviving and operating in extreme and hostile environments anywhere in the world
- special immunizations for prophylaxis for tropical and chemical, biological, radiological weapon threats
- special health equipment and supplies for operations
- comprehensive assessments in theatres of operation for health hazards not encountered in Canada
- training and education of military unique health occupations
- regulatory submissions for operationally required orphan drugs, biologics and devices
- research in military-specific health issues
- comprehensive occupational medical screening at enrolment, peri-deployment, periodic, and at release
- training of non-medical personnel to maintain advanced first-aid and mental health readiness for high-risk military operations
- medical and operational standardization with health services of allied armed forces
- unlimited mental health, nutrition, physiotherapy, and rehabilitation services
- all drugs, biologics, and devices
- full dental and optical services
- pest control



## DELIVERING HEALTH SERVICES





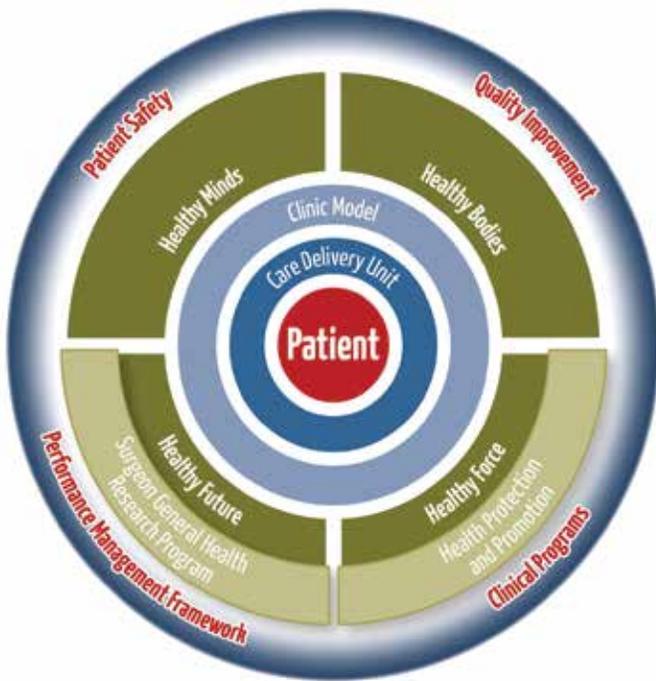
# CARE DELIVERY

# PRIMARY CARE

The principal mission of CFHSG is to provide services to prepare, protect, and sustain force health in order to ensure readiness for and successful achievement of core CAF missions. The delivery of primary care services is critical to maintaining both operational readiness and the essential trust between CAF personnel and their health system. The result of a leading edge reform after 2000 that took a decade to fully implement, CFHSG has one of Canada’s most robust primary care models—one that is patient-centred, accessible, multidisciplinary, and tailored to meet the needs of CAF members at home and abroad. The CAF clinic model is based on widely acknowledged primary care best practices, and its features remain those which the civilian health sector broadly aspires to implement within civilian primary care. In January 2011, CFHSG became the first pan-Canadian primary care system to receive accreditation by Canada’s national health services quality authority, Accreditation Canada. Upon completion of another multi-year independent external evaluation process it was again accredited in late 2013 “With Commendation” by virtue of having surpassed Accreditation Canada’s standards, and CFHSG’s.

After a three-year development process, the Surgeon General’s Population Health Strategy will begin implementation in late 2014. It will raise CAF primary care to another level in setting measurable targets for the improvement of health conditions identified as contributing the greatest burden of illness, non-employability, non-deployability, and medical releases in the CAF population. The strategy will include clinical programs to address these conditions based on the best available medical evidence and making optimal use of the integrated care delivery system in CFHSG clinics. Clinical outcomes will be measured as part of the strategy, thus permitting objectively meaningful assessment of program effectiveness and efficiency. The Strategy’s clinical programs will focus on the following key health issues:

- Obesity and cardiovascular risk factors
- Acute and chronic musculoskeletal (MSK) injuries
- Mental health
- Addictions
- Chronic pain



The heart of the primary care system is the Care Delivery Unit (CDU), designed and organized to enhance access to and continuity of care. All CAF personnel are rostered to a CDU where a multidisciplinary, collaborative team provides focused, efficient, and optimized care for individual patients and the population sub-groups. CAF members receive the same care as they would in a family practice, such as walk-in services (sick parade), booked appointments for structured assessments and routine follow-up, and periodic health assessments that vary in detail according to evidence-based best practices for different age groups, occupational exposures, and operational requirements. In addition, CAF members are generally supported by on-site laboratory services, radiology services, physiotherapy, pharmacy, case management, speciality clinics in some locations, psychosocial services, mental health services, and seven regional specialized Operational Trauma and Stress Support Centres (OTSSCs). CAF members also receive a variety of preventive health services such as health promotion primary prevention programs, periodic, pre- and post-deployment screening, immunization services, travel medicine services, and community health secondary prevention services.

## Nursing

Given diverse and demanding clinical competency requirements that proved essential during the past decade of deployed military and humanitarian assistance operations, nursing implemented a new initiative since 2012 to rapidly force generate clinically current nursing officers through the establishment of four high-readiness detachments (HRDs). Located in Edmonton, Ottawa, Montreal, and Halifax, HRD

members are under the command and control of 1 Canadian Field Hospital in Petawawa. In partnership with local tertiary care hospitals, HRD nursing officers participate in high-quality clinical rotations to maintain a high standard of operationally-essential clinical skills. This ensures that they are fit, current, and immediately ready to support CFHSG mandates and CAF missions.



The female element of the CAF nursing community was recognized by the Royal Canadian Mint with the Commemorative Georgina Pope Coin in November 2012. CAF nursing officers, past and present, embraced this opportunity to honour Matron Georgina Pope. The coin was presented to the Surgeon General, who attended the Nursing Sisters' Association's Remembrance Day Luncheon with surviving WWII Nursing Sister veterans and serving nursing officers, many of whom are veterans from the Afghanistan and Balkan conflicts.

In 1899, Georgina Pope was one of four volunteer nurses to care for wounded British and Canadian troops in the South African War. This appointment was significant in the evolution of women's participation in the Canadian military. For the first time, women serving as nurses were given a military rank as Lieutenants and its related salary. Because of Georgina Pope and women like her, military nurses became the first Canadian women authorized to vote federally in the 1917 election campaign, and all branches of the CAF are now open to women.

The Royal Canadian Mint's silver \$5 coin was designed by Canadian artist Laurie McGaw. It features Georgina Fane Pope, the first Nursing Matron of the Canadian Army Medical Corps in the foreground. In the background are three military women from the last century including a WWI nurse, a WWII member of the Women's Royal Canadian Naval Service, and a CAF member wearing today's Canadian Disruptive Pattern field uniform.



## Nursing Case Management

An integral part of CFHSG primary care, the Case Management Program provides a mechanism for managing cases across the continuum of care, thereby providing a seamless, integrated care process. Nurse case managers are at the hub of a support network for ill and injured CAF personnel, ensuring all necessary linkages are made along the way. From the moment the need for case management is identified, the nurse case manager facilitates the care process by communicating and coordinating with all health services that will play a role in the CAF member's recovery and rehabilitation. Whether the CAF member returns to duty or is released, the nurse case manager will coordinate closely with everyone involved

in the patient's non-medical support and management to ensure that all needs are met. Since 2011, the Case Management Program has provided integrated planning for severely injured and ill members identified as having complex needs in transitioning to civilian life, thereby improving the care and support provided by the CAF. CFHSG nurse case managers work with local Integrated Personnel Support Centres (IPSCs) and other service partners to improve the coordination of services, ensure CAF personnel have access to consistent support across Canada, and reduce gaps, overlaps, and confusion so that none falls through the cracks.

## Pharmacy Services

CFHSG pharmacists not only dispense medications, they also provide comprehensive drug therapy assessments for individual patients after reviewing their documented medical histories and discussing treatment objectives with the primary care team.

- Over 600,000 transactions for pharmaceutical products are recorded among CAF personnel each year via a third-party claims processing system.

- Only 10% of pharmacy transactions for CAF personnel are processed in civilian pharmacies. The costs associated with processing medications at military pharmacies remain significantly lower than in civilian pharmacies, and is associated with substantial cost avoidance.
- In fiscal year 2013-14, just under \$32 million was spent on pharmaceuticals and medical equipment.

# 4,000

active nursing case management caseload

# 85%

CAF personnel who obtain medication through CFHSG services each year



*The 2013 Canadian Pharmacy Association International Leadership Award was awarded to Capt Cecilia Reys for her transformation of the way pharmacy technicians are being trained in Afghanistan. This award recognizes a significant contribution to the advancement of the profession of pharmacy within an international context.*



# 40%

CAF personnel  
accessing physiotherapy  
services each year

*“CAF Rehab has been the catalyzer in recent years for the successful reintegration of wounded soldiers to their frontline units. Where before we had to contact directorates that regarded us as “anomalies” in the system or “on our way out” for the treatment of our files, CAF Rehab was made for us wounded soldiers that needed extra care and the understanding of our challenges. Not only did it provide us with support to reach our full potential, it gave us institutional leadership and created opportunities for us to serve our country again.”*

Capt Simon Mailloux

## Physical Rehabilitation Program

A collaborative team of physiatrists, physiotherapists, occupational therapists, and physiotherapy support personnel deliver physical rehabilitation services to CAF members. The caseload comprises a larger group with minor but incapacitating MSK injuries and a smaller, more complex group of seriously or very seriously injured personnel with injuries or illness leading to limb amputation, life-altering limb injury, traumatic brain injury, and chronic pain. The program's primary mandate is to facilitate the reintegration of meaningful activity for military personnel who have sustained complex injuries or illness. It is based on the World Health Organization International Classification of Function model, and takes into account the biological, psychological, and social aspects of disability.

Since 2010, the program has fostered and developed close ties with internal DND stakeholders such as Director Casualty Support Management, Soldier On, Injured Soldiers Network, Personnel Support Programs (PSP), Canadian Forces Environmental Medicine Establishment (CFEME), and Defence Research and Development Canada (DRDC), as well as external collaborators such as the U.S. military medical services, those of other NATO partners, the Canadian Institute for Military and Veteran Health Research (CIMVHR), the Canadian Association of Physiotherapists, the Canadian Association of Occupational Therapists, Veterans Affairs Canada (VAC), the Canadian Association of Prosthetists and Orthotists, the Canadian Association of Physical Medicine and Rehabilitation, the True Patriot Love Foundation, and War Amps Canada.

Through this wide-ranging collaboration, many complex issues have been addressed from a clinical and research perspective, such as guidance on vehicle and home modification, inter-professional care for complex conditions, prosthetic trials to identify objective benefits, and user preferences of recently developed prosthetic components, many of which were the first trials of their kind in Canada. Current trials

include evaluating prosthetic gait using the Computer Assisted Rehabilitation Environment (CAREN), purchased by the CFHSG in 2009 and installed at the Ottawa Hospital Rehabilitation Centre and the Glenrose Rehabilitation Centre in Edmonton in 2011. This sophisticated rehabilitation tool has allowed the program to provide an alternative form of treatment when conventional treatments are insufficient or have reached a plateau.

One of the most fruitful collaborations has been the program's involvement with “Soldier On,” supporting patient participation in such events as the Nijmegen Marches, World Paralympic Trials, warrior games, ski and aquatics camps, and many others. These events epitomize the collaboration between clinical and non-clinical stakeholders in the care of ill and injured CAF personnel, while providing CAF physiotherapists an ideal opportunity to enhance their knowledge and experience dealing with the unique issues confronting such physically active and motivated patients.

Military personnel are motivated by friendly competition in sometimes austere and challenging environments. Standard physiotherapy in isolation is limited by a perceived lack of context within which rehabilitative exercise programs are conducted, while the reintegration of high-level sports and recreation provides for the ideal continuum in the process of rehabilitation and reintegration.

Through affiliations with the True Patriot Love Foundation, program volunteers provided medical support to expeditions involving ill and injured former CAF members to Mount Everest Base Camp and Island Peak in Nepal, as well as to the North Pole. Although these activities only involve a dozen serving or former CAF personnel at a time, the ripple effects can inspire and motivate other injured and ill service members to set ambitious but achievable goals for themselves. The program also demonstrates to participants that they are not alone in their quest to attain high-level goals and aspirations.

The program has collaborated with allies on various NATO scientific fora on research, education, and best practices pertaining to outcome measures in high-functioning poly-trauma patients, rehabilitation and reintegration for return to service, and regenerative medicine. CFHSG rehabilitation clinicians conduct and publish their research and participate in national and international scientific meetings to ensure that CAF personnel benefit from the latest knowledge and best practices in rehabilitation.

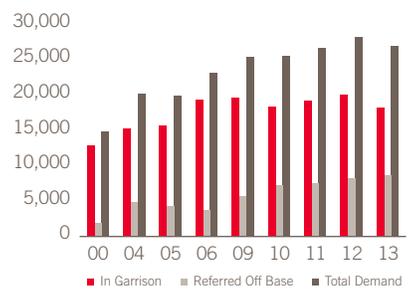
In the coming years, changing operational climates are expected to change the program's focus from severe trauma rehabilitation to chronic pain management and functional restoration following training or motor vehicle accidents. Ongoing efforts will be directed to optimizing the care of members with acquired brain injury and to further enhance inter-professional care in CFHSG centres. The burgeoning science of neuroplasticity and the impact of cognitive-behavioural and mindfulness-based practices on physical rehabilitation offer promising prospects for injured and ill service members and their families.

MSK injuries are one of the most prevalent sources of disability in the world's modern armed forces. Between 35% and 45% of CAF sick parade visits and 42% of medical releases are related to MSK conditions. Over 90 highly trained and dedicated military and civilian physiotherapists deliver comprehensive services at 20 bases across Canada. Our largest group of physical rehabilitation providers, they use a militarized sports medicine approach to help CAF personnel return to full, active duty as quickly as possible.



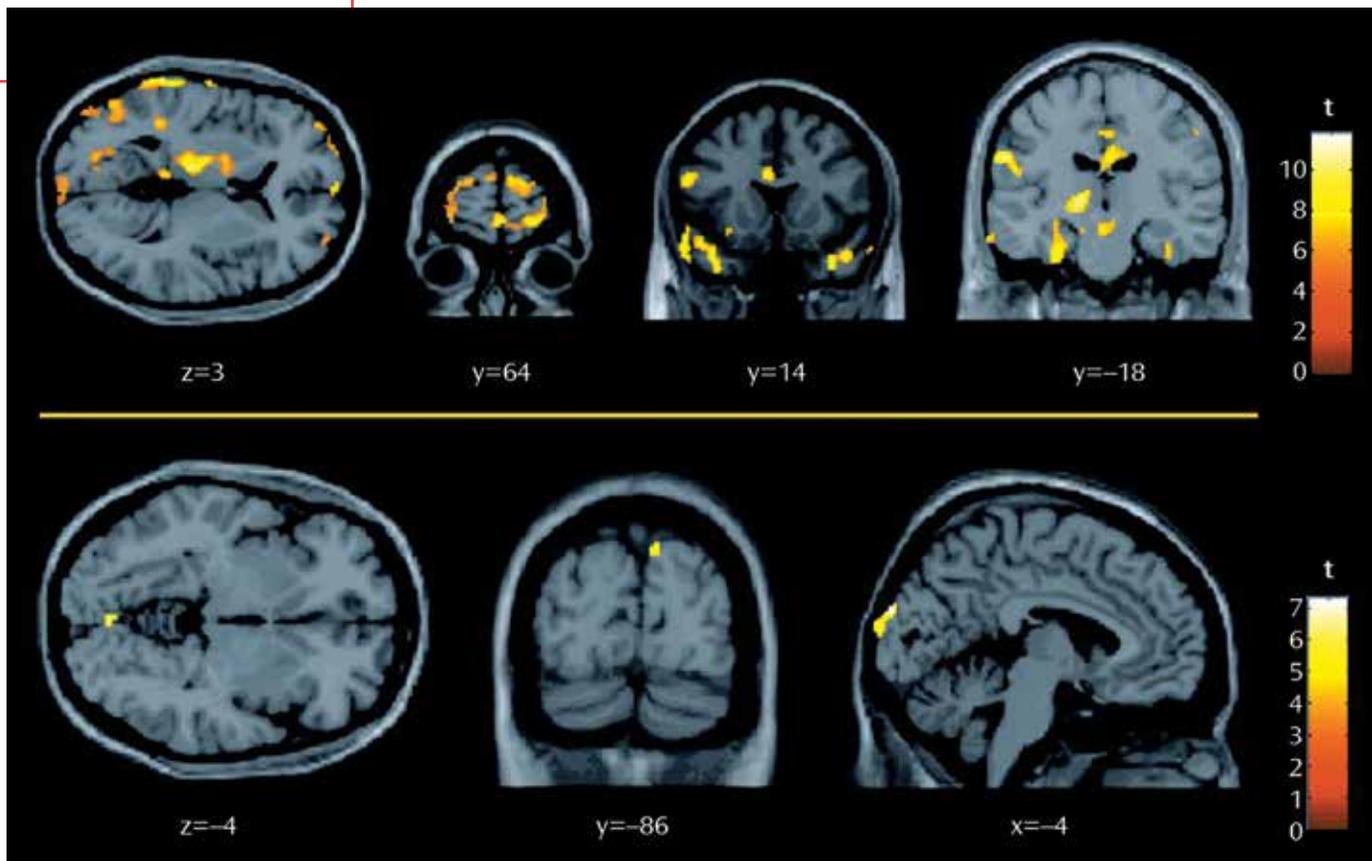
Through the Canadian Innovation and Commercialization Program, our Physical Rehabilitation Program led the first clinical study of six Kinova JACO arms in patients with severe neurological injuries. This robotic arm allowed a former CAF member with a severe spinal cord injury to leave the hospital bed to which he had been confined for three years and move into an apartment—a huge step in reclaiming a meaningful life.

CAF PHYSIOTHERAPY DEMAND



The quality of CFHSG's rehabilitation program was reflected in the selection of its head, LCol Markus Besemann, to receive the 2014 AMSUS Rehabilitation Award. This is the first time that AMSUS, the national health professional association for all U.S. federal government departments, has selected a non-American to receive the award. LCol Besemann was also selected by NATO to co-chair its 2013 international symposium in Milan, Italy on Rehabilitation, Regeneration and Prosthetics for Re-Integration to Duty.



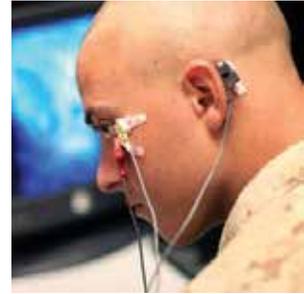
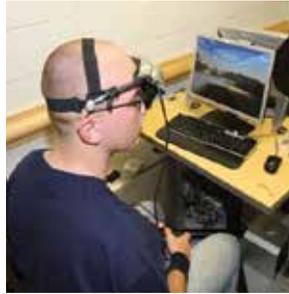


## MENTAL HEALTH CARE

There has been a significant psychological impact on many CAF members returning from operations in such places as the former Yugoslavia, Somalia, Rwanda, and Afghanistan, among others. Over the past two decades, many CAF personnel have developed operational stress injuries (OSIs) that have led to long-term illnesses that are difficult to manage. Many military and civilian health professionals who supported or deployed on these operations have also been impacted psychologically and are themselves suffering mental illnesses and injuries.

Despite the increase in mentally ill and injured CAF personnel, the CAF has developed a mental health system that has been independently acknowledged across Canada and around the world as a model for mental health promotion and care. Its multi-disciplinary, evidence-based approach to mental health has been recognized as the best means to improve the health of those who present for care. Its education and resiliency program developed for deployed operations in Afghanistan is now being adopted for use by thousands of Canadian civilians to help improve mental health literacy and to reduce stigma and suicide risk.

Starting in 2012, the Directorate of Mental Health conducted a detailed year-long analysis of the latest mental health literature and of the cumulative CAF mental health data, research, experience, and lessons learned. It led to the development and initiation of the Surgeon General's Mental Health Strategy in late 2013 to further enhance the CAF's mental health system over a five year period. Above all, the analysis highlighted the critical role of CFHSG's dedicated frontline clinicians, including all members of the pre-hospital, primary care, and mental health care communities. Since its establishment in 2009, the Directorate of Mental Health has greatly contributed to the establishment of a clear, objective, evidence-based vision for CAF mental healthcare. The CAF mental health system aims to improve mental health, reduce risk of illness, deliver high-quality healthcare, and enhance understanding of all aspects of mental illness through three program components: understand, educate, and care.



## Understand

The mental health challenges affecting our unique military population require that CFHSG maintain close health surveillance and remain on the leading edge of research to safely and scientifically integrate new therapies into our existing mental health programs. Ongoing, detailed information on the incidence, prevalence, and impact of mental health problems is essential to guide all facets of the mental health system. This information directs research, guides resource allocation, and contributes to the evaluation of mental health programs and services. Among many other research efforts since 2010, key projects have included:

- the 2013 CAF Cross-Sectional Mental Health Survey (conducted for the CAF by Statistics Canada), which focuses on the mental health impact of the Afghanistan mission and the performance of the CAF's mental health system. Dozens of data analyses will be conducted and published over the next two years in order to inform further optimization of the CAF mental health system;
- the Operational Mental Health Assessment, which provides critical information on the mental health of CAF members deployed in support of the mission in Afghanistan, as well as their use of clinical services;
- the Operational Stress Injury Incidence and Outcomes Study, which analyzed diagnoses and occupational outcomes in a large representative random sample of those deployed in support of the mission in Afghanistan from 2001 to 2008; and
- a group-randomized trial of the CAF Road to Mental Readiness (R2MR) mental health education and resiliency program among CAF recruits. It is designed to evaluate the effect of R2MR on well-being, stress, strain, and attitudes towards mental healthcare.

Collectively, these studies have so far resulted in 17 peer-reviewed publications in scientific journals. More importantly, the resulting information indicates that 1) most CAF members are in good mental health; 2) with few exceptions, the prevalence of mental disorders in the CAF is similar to the general population; 3) structural barriers to care are uncommon in the CAF Regular Force; and 4) most CAF members hold largely forward-thinking attitudes about mental health and mental healthcare. While there are many well-established treatments for mental health conditions, the limited efficacy of some have necessitated ongoing CFHSG research to improve treatment using such modalities as virtual reality exposure therapy, transcranial magnetic stimulation, and neurofeedback.

In response to recommendations of the 2009 multinational military-civilian CAF expert panel on suicide prevention, the Surgeon General established the Medical Professional Technical Suicide Review process. Like the Royal Canadian Air Force's (RCAF) Flight Safety Program, it is conducted by mental health professionals who investigate and analyze each suicide in depth within a few weeks in order to identify areas for potential program and system improvement. No other employer or health jurisdiction analyzes suicides among its population to this extent, and over 100 recommendations have been implemented to-date.

## Educate

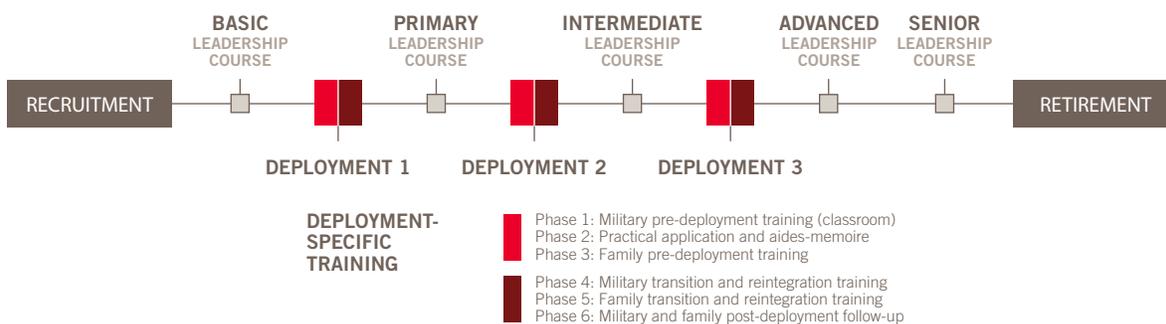
The R2MR Mental Health Education Program encompasses the entire spectrum of resilience, mental health, and suicide awareness training and is embedded throughout the career of CAF members, including during the deployment cycle. The program is designed to provide CAF personnel the knowledge and skills needed to manage reactions to stress, recognize mental health distress, overcome barriers to care, and seek assistance when required. Its mandate has grown from delivery at two points during the career cycle in 2008 to an integrated developmental program delivered at nine points during the career and deployment cycles of CAF personnel. Since 2008, 25 R2MR training packages have been developed for military audiences. Specialized content is also delivered to military occupations with special considerations, as well as a train-the-trainer program to increase delivery capability and capacity by non-medical CAF personnel with current first-hand tactical and operational experience. Training them to help deliver the mental health curriculum is further shifting the CAF culture toward positive perceptions about mental health conditions and care. Uniformed operators in partnership with mental health professionals, they now deliver the mental health and resilience curriculum through the Canadian Defence Academy

and Land Force Doctrine and Training System on various leadership courses for non-commissioned members, during pre- and post-deployment training, and on army officer training courses. Since 2008, the R2MR program has been delivered through over 2,000 training sessions to approximately 60,000 CAF personnel, family members, and Department of National Defence civilians. The content has evolved to ensure that it incorporates new and emerging evidence and to integrate suicide awareness and family violence prevention content.

The R2MR program has also been adapted to civilian organizations through a partnership with the Mental Health Commission of Canada. The Working Mind Program, a version specifically tailored for civilian workplaces, is scheduled for implementation in 10 provincial government departments, colleges, universities, and civilian corporations, while the R2MR for Police is being implemented in 11 police departments across Canada, including the Royal Canadian Mounted Police (RCMP). We will continue to work with the Mental Health Commission and its partners to ensure that R2MR's ongoing evolution benefits all Canadians.

## Institutionalization of Resilience

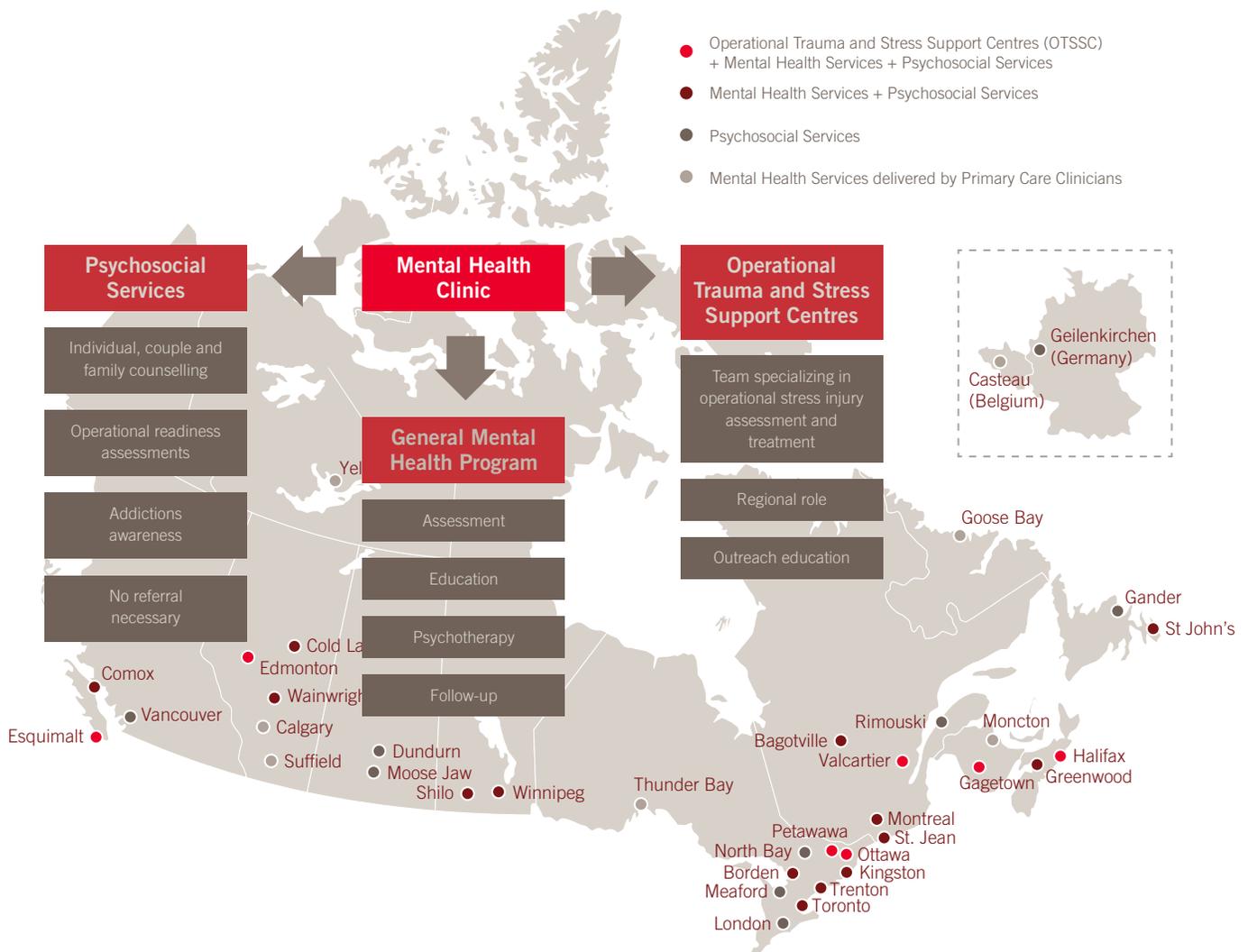
### THE ROAD TO MENTAL HEALTH READINESS (R2MR)



# Care

Our care approach takes into account that the interdependency of physical and mental health requires that our system supports both, whether in-garrison or during deployed operations. Varying levels of specialized mental health services are available on all operations according to the demands of the mission. In-garrison mental healthcare is provided by our primary care system and our speciality mental healthcare clinics at health services centres and detachments across Canada and in Europe through three programs: Psychosocial Services, General Mental Health, and specialized regional Operational Trauma and Stress Support Centres (OTSSC).

Mental healthcare is delivered by interdisciplinary teams that include primary care clinicians, mental health nurses, psychiatrists, psychologists, social workers, addictions counsellors, and mental health chaplains. Over the past four years, the number of frontline mental health staff has greatly increased, but continues to fluctuate because of normal attrition and the challenge of high national demand for mental health professionals. Current staff levels against our 454 established positions represent the highest ratio of providers to population in NATO. These CFHSG professionals are supported by an external referral network of over 4,000 civilian healthcare providers.



Mental health support/services available to CAF members feeling distressed:

- Health Services Centres personnel on base/wing – Physicians, Nurses, Nurse Practitioners, Med Techs, Physician Assistants, Social Workers, Mental Health Nurses, Addictions Counsellors, Psychologists, Psychiatrists, Mental Health Chaplains, referrals to Operational Trauma and Stress Support Centres
- Base/wing chaplains, trusted colleagues and unit leadership, family and friends
- Operational Stress Injury Social Support (osiss.ca)
- CAF Member Assistance Program (1-800-268-7708)
- Road to Mental Readiness training (forces.gc.ca/r2mr)
- Health Promotion courses – Mental Fitness and Suicide Awareness, Managing Angry Moments (Coping Strategies), Top Fuel for Top Performance, Stress: Take Charge!, Alcohol, Other Drugs and Gambling, Inter-Comm: Dealing with Conflict and Improving Communication in Personal Relationships

CAF families can access:

- Family Information Line (1-800-866-4546)
- Military Family Resource Centre on base/wing (familyforce.ca)
- CAF Member Assistance Program (1-800-268-7708)



Our focus continues to be on improving the mental healthcare delivery system through such initiatives as:

- policies and guidance on standardized, evidence-based care through a strengthened treatment standardization committee structure and governance;
- meaningful program quality and performance measures, including the use of clinical outcome tools;
- incorporating mental health notes in electronic health records for enhanced clinical communication;
- formalizing and expanding the Addictions and Suicide Prevention Programs;
- increased research and other collaborations with our partners;

- managing wait times through efficient use of resources and tele-mental health technology; and
- reducing stigma and barriers to care by enhancing communications and education of members and military leaders on identifying signs of mental illness and access to services.

These initiatives over the next five years are among many others highlighted in the Surgeon General's Mental Health Strategy to ensure that we continue to deliver the best possible care to CAF members.

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*“...Canada’s program on operational stress injury was held as the example to be applied in the United States and, they hope, in other countries.”*

Lt Gen, the Hon. Romeo Dallaire,  
Chair, Senate Committee on Veterans Affairs

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In the CAF Ombudsman’s 2012 review, entitled *Fortitude Under Fatigue: Assessing the Delivery of Care for Operational Stress Injuries That Canadian Forces Members Need and Deserve*, Mr. Pierre Daigle commends the CAF for significant improvements over the past decade and said: *“I was pleased to see that care and treatment for Canadian Armed Forces members suffering from an operational stress injury has improved since 2008 and is far superior to that which existed in 2002.”* He also stated: *“The ceaseless devotion of the medical professionals, care providers, managers, clerical staff, and peers both enabling and delivering care has been the single constant throughout this analysis.”*

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*“... the CAF is more progressive and more advanced than most other employer and public institutions in forging an understanding and response to these health conditions as authentic health concerns requiring support and care.”*

Bill Wilkerson, Co-Founder and CEO,  
Global Business and Economic Roundtable  
on Addiction and Mental Health

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*“The Mental Health Commission of Canada (MHCC) commends the work of the Canadian Armed Forces (CAF) on the release of the Surgeon General’s Mental Health Strategy. .... Despite the differences between military and civilian contexts, there is much to be learned from the CAF approach to comprehensive, population-based approaches to mental health and about providing a comprehensive range of integrated mental health services.”*

*“The efforts... have established the CAF as a recognized leader.”*

Mental Health Commission of Canada

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*“The Canadian Psychiatric Association (CPA) welcomes the release of the Surgeon General’s Mental Health Strategy. The strategy will bring CAF’s mental health initiatives within an integrated framework that includes prevention, clear priorities and timelines, an evidence-based approach to assessment and treatment, performance-based evaluations, and a focus on research and communications. ... Lessons learned through research and leading practices in the military mental health community may benefit other populations such as police, firefighters, industry, and the general public.”*

*“The Canadian Forces is right to take pride in its mental health program which has been recognized by its NATO allies and civilian organizations.”*

Dr. Fiona McGregor, President of the Canadian  
Psychiatric Association 2011-2012

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## DENTAL CARE

2010 to 2014 has seen the Royal Canadian Dental Corps (RCDC) go through one of its busiest operational periods in its nearly 100-year history. Ongoing operations in Kandahar saw an oral and maxillofacial surgery team in the Role 3 Multi-National Medical Unit (R3MMU), a comprehensive dentistry team in the Role 1 medical facility supporting the Canadian Battle Group, and personnel fulfilling non-traditional roles such as deputy commanding officer of the R3MMU, deputy commanding officer of the Joint Task Force Health Services Unit, Bison Ambulance crew commanders, and leading the R3MMU's Patient Administrative Division.

At the same time, dental corps personnel deployed to earthquake-ravaged Haiti: a comprehensive dentistry team to the field hospital, dental technicians to the headquarters for the first time on an expeditionary basis, and three forensic teams on the Department of Foreign Affairs, Trade and Development (DFATD)/RCMP Disaster Victim Identification Operation. With the launch of Operation (Op) ATTENTION, as many as five dental teams were deployed in Afghanistan. Dental teams also deployed with U.S. and international humanitarian assistance missions on exercises such as PACIFIC PARTNERSHIP, CONTINUING PROMISE, and NEW HORIZON.

First envisioned after the RCDC's participation in the Swiss Air 111 crash investigation, and later forged from our forensic operation with DFATD and RCMP following the 2010 earthquake in Haiti, the Canadian Armed Forces Forensic Odontology Response Team (CAF FORT) was established as a high-readiness capability to support the CAF, RCMP, provincial coroners, and the Government of Canada. Twelve RCDC personnel remain on high readiness to respond to requests for identifying human remains resulting from mass fatalities, with an additional twelve members in reserve.

CAF FORT team members have all received their forensic training through either the U.S. Armed Forces Institute of Pathology or the Bureau of Legal Dentistry (BOLD) at the University of British Columbia. In step with NATO and American, British, Canadian, Australian, and New Zealand (ABCA) doctrine, the 2013 BOLD course was expanded to include military dental personnel from both alliances. The 2014 iteration saw dental personnel from the U.S., United Kingdom, Netherlands, New Zealand, and Australia training alongside RCDC personnel and being taught by BOLD and RCDC experts in the field of forensics. CAF FORT personnel also participate in collective training once a year and post-disaster training provided by the Canadian Police College. They recently exercised with first responders in Alberta on a mock plane crash scenario.

Through our operational experience and unique place in the ABCA and NATO forensic community, the RCDC has taken a lead role on not only updating the NATO Standardization Agreement (STANAG) on Military Forensic Dental Identification, but also creating the ABCA Standard, Military Identification - Forensic Odontology, which aligns and standardizes capabilities with internationally recognized protocols and procedures. A memorandum of understanding has also been signed with the RCMP and DFATD to support the efficient and rapid deployment of resources as required by the Government of Canada.

Since the Haiti earthquake, the team has deployed or been placed on stand-by on four occasions. At the request of the Government of Canada, the team was

readied to respond to the Christchurch, NZ, earthquake and the Japan earthquake and tsunami. In August 2011, in the midst of the Op NANOOK exercise Major Air Incident Disaster (MAJAID), First Air Flight 6560 crashed on approach to Resolute Bay, killing 11 passengers and crew on board. Dental personnel on exercise initiated post-mortem dental autopsies, with CAF FORT personnel deploying later to the morgue at the Ottawa General Hospital to complete the task while other members worked the ante-mortem and reconciliation aspects. In January 2013, in the wake of a hostage crisis at a gas facility in North Africa, CAF FORT personnel deployed with the RCMP on an integrated national security enforcement team to assist with the forensic and criminal investigation surrounding the alleged participation of Canadian citizens in the attack.



Throughout the last 99 years, the Canadian Army Dental Corps, the Canadian Dental Corps, the RCDC, and the Canadian Forces Dental Services (CFDS) have been responsible for the dental care for uniformed personnel from each of the services of the CAF, and for other unique professional capabilities. In light of Dental Corps history and traditions, in October 2013, the Governor General and Commander-in-Chief of the CAF, in his role as federal vice-regal representative of the Canadian monarch, announced the approval of the CFDS by restoring the name 'Royal Canadian Dental Corps'. "The bestowing and restoration of the CFHSG historical names is an essential part of the government's commitment to honour the memories of so many brave Canadians who have sacrificed in service to Canada," said the Honorable Rob Nicholson, Minister of National Defence. "It reinstates an important and recognizable part of our military heritage, as well as a key part of our nation's identity."

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*"Our Canadian uniformed dental services are an integral part of the fabric of professional dentistry in Canada."*

Dr. Robert Sutherland, President of the Canadian Dental Association, 2013

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*"The Royal Canadian Dental Corps is clearly the standard-bearer for forensic dentistry training..."*

Christopher G. Fielding, Col, DC, USA Consultant to the Army Surgeon General in Oral and Maxillofacial Pathology and Forensic Odontology, 2014

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*"Unequivocally, I can say that the CAF forensic response team is currently seen as the standard to which all other similar military teams aspire."*

Dr. David Sweet, former Chief Forensic Scientist, INTERPOL Standing Committee on Disaster Victim Identification

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# CARE ENABLERS

# HEALTH INFORMATION SYSTEM

As the largest health information system in Canada, the Canadian Forces Health Information System (CFHIS) operates in over 60 locations across Canada and around the world, including in deployed operations and onboard Royal Canadian Navy ships. CFHIS electronic health records provide bilingual access anytime and anywhere to health-related documentation critical to enabling clinical decision-making and optimizing health outcomes. Its integrated health information services include electronic medical records, dental records, medical and dental digital imagery, laboratory services, and a report-generating system. The CFHIS supports a collaborative model of patient management, ensuring that patients feel confident that their health information is protected and secure and that healthcare providers have the information they need.

The CFHIS development and implementation project has now fully transitioned to in-service support (ISS). The ISS team consists of personnel from CFHSG and the Directorate of Application Development and Support, with additional technical support through contracted technical services. CFHSG personnel consist of CAF and civilian managers, business analysts, clinical specialists, and national subject matter experts for health information management,

information security and privacy, diagnostic imagery, laboratory, operational support, and training services. The primary face for functional and technical support is a specially trained group of professionals providing CFHIS users with person-to-person contact through the dedicated CFHIS Help Desk. CFHIS users have confidence that their support needs will be met quickly, ensuring uninterrupted patient-focused services.

Over 3,000 healthcare providers are registered and trained to operate the system. Providers schedule more than 750,000 appointments and integrated laboratory and diagnostic imagery applications produce more than 300,000 results each year. In addition to the electronic information directly entered into the CFHIS, approximately 2 million documents have been scanned into medical and dental charts, thereby providing clinicians anywhere in the world with instant access to all sources of patient information. Although the goal is to move towards a virtually paperless healthcare system, the mobility of CAF personnel and the use of multiple health systems around the world will require ongoing document scanning. To support the goal of a future paperless system, CFHSG participates in various efforts and forums to advance electronic health information system development and integration.

**3,000**  
number of healthcare providers registered and trained to operate CFHIS

With the increasing impact of operations on mental and psychosocial health and the practical impacts of their inter-dependency with physical health and operational readiness, the ability to input appropriate mental and psychosocial health information at the point of care became more important to operational screening and holistic clinical management. A project was therefore initiated in 2014 to electronically input mental health and psychosocial records to CFHIS to optimize decision-making and ultimately improve the mental health care of CAF personnel.






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Astronaut Dr. Dave Williams publicly pointed to the Canadian Forces Health Information System, the first pan-Canadian e-health system, as a national model of innovation, and the Government of Canada's Chief Information Officer requires all other government departments to use its basic framework.

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CFHIS was selected for a 2012 Distinction Award at GTEC, "*Canada's premier Information Technology event*" which "*recognizes and celebrates projects and individuals within the public sector who have demonstrated leadership and excellence in the innovative management and application of information technologies.*"

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CFHIS reporting capability provides senior CAF leaders with real-time information to support operational decision-making. The health information collected also supports population health surveillance, permitting health professionals to link health concerns with occupational, environmental, and operational exposures.

CFHIS electronic health records include multiple support systems designed to ensure the security and privacy of patient information. They include a clinical review process to ensure that physicians examine and sign all clinically relevant diagnostics and reports, thereby enhancing patient protection. The integrated nature of the CFHIS allows clinicians to access all parts of the health information system without needing to electronically log on and from separate applications. This reduces the time needed for clinicians to access the various information sources required for decision-making and ultimately improves patient care.

No other jurisdiction in Canada can boast of such an accomplishment. CFHIS remains a great success for the CAF and the Government of Canada, and no other military health system in the world faced with similar demands provides such an integrated health information system.

# INFRASTRUCTURE RENEWAL

Since the 2010 Surgeon General's Report, the CFHSG Healthcare Facility Recapitalization Program (HCFRP) continues to deliver state-of-the-art, requirements-based, functionally purposed health clinics across the Canadian military estate. Following the Senior Review Board's alignment in 2009 of all clinic recapitalization projects into program status, 17 major capital projects continue to be guided from identification to implementation through the project approval process. Beneficial occupancy by CFHSG staff has been achieved at three new health services centres, with one more presently under construction. Of the remaining centres, three await final approval prior to tender and subsequent construction, while the others are being developed in various stages of conceptual and detailed design.

Each new health services facility consolidates all health services functions under one roof, thereby providing a single, integrated facility. Each centre will deliver services in a modern facility designed and built to meet best-practice healthcare delivery models. Medical services provided to CAF personnel include sick parade, medical appoint-

ments, prescriptions, periodic and other specialized health assessments, preventive medicine, and immunizations. Development of additional programs introduced by the CFHSG in recent years, such as improved mental health services, case management, physiotherapy and physical rehabilitation, and occupational trauma and stress support, have had an impact on infrastructure requirements and are fully incorporated into the statement of operational requirements infrastructure for each project. Dental services provided to CAF personnel include emergency care, specialist care, and general dentistry, all scaled to meet the demands of the CAF and its patient population.

The three new centres already completed, Greenwood, Kingston, and Comox, have been subjected to a rigorous post-occupancy evaluation as part of the lessons-learned process. User feedback and critical observations are being addressed within the new centres and incorporated into the design of subsequent projects. The new facilities are successful and complementary to the delivery of care under the Primary Care Initiative Renewal and Dental Philosophy of Design.

HCFRP Planned Delivery	
Borden	2016
St-Jean	2017-18
Edmonton	2017-18
Petawawa	2017-18
Bagotville	2018
Gagetown	2018
Esquimalt	2018
Valcartier	2018
North Bay	2018
Meaford	2019
Halifax/Shearwater	2019
Cold Lake	2019
Winnipeg	2019



Rendering of future St-Jean Health Services Centre



Greenwood Health Services Centre



The Royal Canadian Medical Service and the Royal Canadian Dental Corps Defence Health Care Recapitalization Program team was selected by the Real Property Institute of Canada for their 2014 Award under the Best Practices – Comprehensive Planning category. The application of their best practices has enabled the Department of National Defence to move the Health Care Recapitalization Program forward in a timely and cost-effective manner and realize estimated savings of \$4M in the overall program and savings of approximately 3 months in the implementation of each infrastructure project.



CFHSG's extensive work to develop and deploy a system-wide patient safety education program was recently recognized by the Canadian Patient Safety Institute with its 2014 Innovation in Patient Safety Education Award. The award recognizes organizations and groups that demonstrate best practices in patient safety and quality improvement. CFHSG is the first Canadian hub to implement the train-the-trainer model to advance patient safety education nationally in order to effect system-wide change.

## QUALITY AND PATIENT SAFETY

A high priority for health organizations in Canada and around the world, patient safety is the result of high-quality care to prevent and mitigate adverse events within the healthcare system. Adverse events are unintended injuries or complications that can arise from healthcare management and result in death, disability, or prolonged hospital stays. CFHSG is committed to the safest possible delivery of health care. To this end, we have adopted patient safety as a priority in our strategic plan for the Quality Improvement and Risk Management Program. Newly created in 2014, the Medical Clinical Quality Assurance Committee is a subcommittee of the Surgeon General's Clinical Council to monitor and report on the quality of the clinical care provided to CAF members.

The overall intent of the program is to continuously improve the quality and safety of patient care within CFHSG by simultaneously pursuing initiatives within

the patient experience, the health of the population, fiscal responsibility, and clinical and operational readiness. CFHSG is committed to each of the following aims:

- provide patients with a high-quality healthcare experience focused on CFHSG dimensions of quality (patient-centred, safe, appropriate, continuous, accessible, efficient, effective, equitable, and delivered in a healthy work environment);
- promote health and illness prevention by encouraging positive health behaviours and addressing root causes of ill health;
- be fiscally responsible by eliminating waste, reducing unwarranted variation, and understanding financial impacts of care; and
- maintain readiness, not only to provide deployable health services for healthcare delivery anytime, anywhere, but also to ensure that all CAF members are operationally fit for deployment.

CFHSG is committed to keeping our patients safe while they are in our care. It is with this commitment in mind that CFHSG continues to develop a supportive environment by partnering with and adopting best practices from the RCAF Flight Safety Program and patient safety organizations such as the Canadian Patient Safety Institute (CPSI). One of the core components of the CFHSG Patient Safety Program is education and training for staff and patients. CFHSG has partnered with the CPSI to adopt the Patient Safety Education Program–Canada (PSEP–Canada), a comprehensive education and training capability based on a train-the-trainer concept. Adapted for CFHSG’s military and federal government environment, the program will further strengthen our patient safety and health service quality culture within both the medical and dental services. The program is being implemented in a phased approach: education sessions will first focus on attitudes and knowledge modules and then target skills and behaviours. Five CFHSG master facilitators from various health professions were recently certified to train patient safety trainers, who will in turn train patient safety officers to deliver training to frontline staff and patients within the clinics and detachments. The education sessions are designed for frontline delivery in five- to ten-minute sessions in order to minimize time away from patient care. Over the long term, patient safety education sessions will be incorporated in training for all roles within CFHSG.



*First group of Patient Safety Trainers certified through the Canadian Forces Health Services Patient Safety Education Program.*

Much of CFHSG’s past work around quality has been through quality assurance to ensure that programs meet specific standards. While essential to maintaining a high standard of care, it does not primarily focus on continuous improvement. Quality improvement is a systematic approach to ensure that a health system evolves and improves continuously. CFHSG has devoted considerable effort over the past four years to integrating the structures, tools, and methodology needed to build knowledge of a system, test change ideas, and implement successful change. To identify opportunities for improvement and assist in decision-support processes, a system-wide set of quality measures is under development.

Internal quality-monitoring activities involve both staff inspection and staff assistance visits that apply national standards and regulations as well as CFHSG policies, directives, and instructions. Such visits provide formal feedback and recommendations to improve the quality of health services and risk mitigation. External quality-monitoring activities focus on accreditation programs that involve an independent external peer-review process to evaluate the quality of services based on standards of excellence. Comprehensive accreditation programs use evidence-based standards and rigorous peer review to foster risk reduction and ongoing quality improvement. CFHSG’s first accreditation review of medical services under Accreditation Canada’s new Qmentum program was completed in 2013. CFHSG will submit its dental services to a similar accreditation process with external quality-monitoring activities in place in 2015.

As a result of its most recent external health service quality survey in 2013, Canada’s national health service quality authority awarded CFHSG the status of “Accredited with Commendation.” This accreditation status validates that CFHSG not only continues to meet health service quality standards, but does so to a standard that “surpasses the fundamental requirements of the accreditation program.”



In operations requiring the deployment of CFHSG in-patient treatment facilities, quality assurance and improvement are maintained through application of the U.S. Joint Trauma System (JTS), which is based on civilian trauma system models tailored to the unique features of deployed military operations. The JTS aims to improve trauma care delivery and patient outcomes across the continuum of care utilizing continuous performance improvement and evidence-based medicine driven by the concurrent collection and analysis of data maintained in the Department of Defense Trauma Registry. Such systems are credited with reducing mortality by 15-20%.

# PERFORMANCE MEASUREMENT

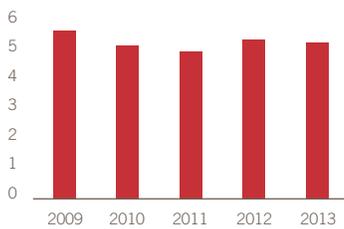
CFHSG's Performance Measurement Strategy has been developed to consistently and objectively assess its performance in delivering accessible, cost-effective, high quality health services in garrison and in deployed operations. Performance measurement supports objective decision-making based on credible and reliable performance data. CFHSG currently tracks approximately 60 performance measures, all of which are regularly reviewed for applicability and currency in today's operating environment. The performance measures developed to date are identified from logic models for each health program, focus on efficiency and effectiveness, and address areas such as primary care, nursing, case management, physiotherapy, pharmacy, medical diagnostics, laboratory services, privacy, and credentialing and licensing.

The performance measures support program managers in continuously monitoring and assessing the results of their programs and the economy and efficiency of their management. Performance measurement tracking has informed improvements in our mental health wait times for appointments, quality controls in the Laboratory program, and enhanced efficiency in the Recruiting Medical Office, Diagnostic Imaging, Physiotherapy and Pharmacy programs. Economic analysis of our case management system has also been established and has assisted in the identification of workload stresses.

The future focus of CFHSG performance measurement is the evaluation of each program to ensure that CFHSG corporate and directorate-specific objectives are met. This will include the development of logic models focused on activities, outputs, and outcomes that support the respective objectives, and lines of operation within the directorates of Mental Health, Dental Services, Health Services Operations, and Health Services Personnel.

## PHYSIOTHERAPY

AVERAGE NUMBER OF TREATMENTS PER PATIENT



### What are we measuring?

This graph demonstrates the efficiency of in-garrison physiotherapy care versus the number of treatments required for patients referred to off-base private clinics.

### Why is it important?

Since demand for services is currently greater than what we can supply, more efficiently-delivered services will allow Bases the capability to see more CAF personnel on-base and reduce the utilization of more expensive off-base providers.

### What does our performance tell us?

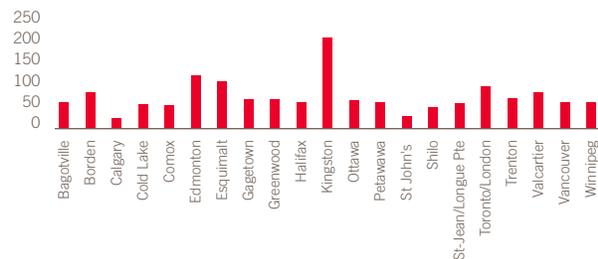
On average, in 2013, our in-garrison physiotherapy services required 5.3 treatments versus 10.5 required for off-base care. These additional 5 appointments off-base can cost up to \$350 more per patient as well as 2-3 additional weeks of light duties and lost manpower.

### Action:

Bases that exceed the average will be monitored closely to encourage efficiencies that will further maximize productivity. The future combination of this measure of efficiency with a clinical outcome will enable us to examine the overall effectiveness of the Physiotherapy Program.

## CASE MANAGEMENT

AVERAGE CASELOAD PER CASE MANAGER



### What are we measuring?

The workload of each nurse case manager is tracked in order to ensure equitable distribution of caseloads. Target caseload is currently at 50 clients per nurse case manager which is deemed appropriate considering the complexity of the cases.

### Why is it important?

It allows the nurse case managers to balance their workload in order to deliver efficient case management services.

### What does our performance tell us?

The current data demonstrates that the average nurse case manager is carrying caseloads above the target. In addition to case managers, at some locations Team Leaders take on cases as well – up to 10 cases. These are located at Edmonton, Esquimalt, Gagetown, Halifax, Ottawa, Petawawa, Valcartier, Winnipeg, and Borden.

### Action:

National Office will work with Team Leaders and local clinics to ensure proper distribution of caseload and delegate tasks as appropriate. National Office will also monitor that all approved and funded case management positions are staffed.





## ATTRACTION AND RETENTION

All modern armed forces must commit significant resources to meet their diverse corporate operational needs and the health needs of their individual military personnel. In addition to the expertise needed to provide routine primary clinical and occupational health care, CFHSG must maintain comprehensive multidisciplinary health system capabilities that are necessary to support forces and personnel engaged in hazardous occupational activities and facing extraordinary health threats in extreme and hostile environments, whether in maritime, aerospace, or field environments. Meeting these challenges requires a multidisciplinary team approach and extensive specialized clinical and operational training.

In providing such capabilities, most modern armed forces also face a difficult and chronic challenge to recruit and retain key clinical occupations for which demand exceeds supply, particularly medical specialists whose production requires up to 16 years of post-secondary education. This challenge is such that NATO's Secretary General publicly noted medical support as one of the gaps restricting Alliance capabilities. This challenge has increased for the

CAF since 2010 after completion of the mission in Afghanistan, which had drawn many clinicians to military service, and as a result of increasing competition with attractive civilian practice opportunities. Civilian competition is also a key factor in challenges to attract or retain Physician Assistants, General Duty Medical Officers, Critical Care Nursing Officers, Pharmacy Officers, Social Work Officers, and civilian Psychologists and Psychiatrists.

Mental health staffing remains very dynamic and competitive, but strong support from the staff of the Associate Deputy Minister Human Resources-Civilian permitted successful hiring for all newly-authorized civilian mental health positions. Routine attrition, however, is a constant that precludes maintaining full strength at all times, and ongoing focus and effort will be required to maintain our authorized establishment. For both military and civilian CFHSG positions, constant recruiting efforts are underway and various measures to increase service and retention incentives are under review.

# TRAINING AND DEVELOPMENT

Once initial professional education qualifications are achieved through civilian academic institutions, the majority of in-service health professional training and education is provided at the Canadian Forces Health Services Training Centre (TC), located at Canadian Forces Base (CFB) Borden, Ontario. The TC provides basic and advanced occupation and field training for personnel within the following Regular and Reserve Force health service occupations:

- Dental Technicians
- Medical Technicians
- Medical Assistants
- Physician Assistants
- Preventive Medicine Technicians
- Medical Officers

- Bioscience Officers
- Dental Officers
- Physiotherapy Officers
- Healthcare Administrators
- Health Services Operations Officers
- Social Work Officers
- Nursing Officers
- Pharmacy Officers

While these represent CAF occupations as defined by the military personnel management framework, several have sub-categories and sub-qualifications such that CFHSG de facto employs 34 non-interchangeable military and civilian health services specialties and sub-occupations.



### 2013–2014

CF H SVCS TC	CFEME/SOM	Outservice Training
68 courses 1381 graduates	6 specialty courses 102 graduates	51 courses 98 graduates



TC in-service training is developed under the direction of CFHSG Headquarters in collaboration with the TC and School of Operational Medicine (SOM) at the Canadian Forces Environmental Medicine Establishment (CFEME) to ensure standardization and that it meets CFHSG and CAF requirements. A focus since 2010 has been on distributed learning and course modularization wherever possible in order to maximize opportunities and accessibility for Reserve personnel and decrease time away from home units and family for all CFHSG personnel. Established in 2013, the Health Services Operations and Staff Officer Course provides common training for all CFHSG officers to ensure that they possess common core knowledge, understand the roles and responsibilities of other CFHSG personnel, and establish networking relationships across occupations early in their CAF career.

CFHSG partners with civilian and foreign military health facilities and academic institutions to provide clinical specialty and specific post-graduate training for bioscience officers, dental officers, healthcare administrators, health services operations officers, nursing officers, medical officers, pharmacy officers, and physiotherapy officers in Canada, the U.S., and the United Kingdom. As part of the Maintenance of Clinical Readiness Program (MCRP), CFHSG also partners with civilian health institutions to ensure maintenance of clinical skills and competencies to meet in-garrison and operational requirements. Basic and advanced education in aerospace medicine and hyperbaric diving medicine occurs at the SOM and CFEME in Toronto. The submarine medicine course is delivered through the SOM at CFB Halifax. Aeromedical technician training is provided through the CAF School of Survival and Aeromedical Training in Winnipeg and at CFEME.

CFHSG is at the forefront of high-impact, realistic Medical Simulation (Med Sim) training, which is progressively integrated into CFHSG training at all levels. The use of new technology, such as trauma patient mannequins and other computerized training equipment, has increased the capability to simulate critically ill patients and combat-injuries, thereby minimizing the use of live tissue in medical training. As part of the MCRP, Med Sim team training is conducted through 1 Canadian Field Hospital Trauma Training Centres East and West, as well as the Medical Simulation Centre Valcartier. All CFHSG units use Med Sim at a lower level in their regular unit training. In 2012, a CFHSG team competed against hospital teams from across the country to win the first annual SimWars National Cup in Canada, hosted by the Royal College of Physicians and Surgeons to test clinical teams in the management of complex, high-stress casualty scenarios.



*The CAF Resuscitation Team took the top prize in 2012, edging out the University of Ottawa Emergency Medicine Team in the finale of the first SimWars competition in Canada. This medical simulation competition challenged teams with highly complex patient scenarios.*

# COLLABORATION AND PARTNERSHIPS

## Health Services Civilian Military Cooperation

# 60

number of memoranda of understanding established in 2010-14 with learning institutions and hospitals (well over 300 in total)

With the 1990s closure of military hospitals, the need to integrate CFHSG personnel in civilian health facilities for education and maintenance of clinical skills became more critical. To meet this need, Health Services Civilian Military Cooperation (H Svcs CIMIC) works collaboratively with civilian health partners to establish, develop, and maintain privileged arrangements with domestic federal, provincial, territorial, regional, and local government and private sector health organizations. Collaborations implemented and managed through the H Svcs CIMIC Program are critical to:

- identify civilian centres of excellence for various educational training initiatives;
- develop, implement, and manage formal corporate arrangements such as memoranda of understanding with external partners and stakeholders;

- have better access to civilian healthcare facilities;
- negotiate and co-ordinate formalized physician specialist / family medicine postgraduate residency training arrangements and other academic healthcare programs;
- support the MCRP by negotiating favourable conditions and facilitating partnerships that allow CAF healthcare providers to maintain acute care competencies in public healthcare environments;
- support the acquisition of new clinical skills; and
- coordinate with civilian healthcare networks in support of exercises and operations.

## NATO and Other Allied Partnerships



In order to operate effectively within allied coalitions, many CFHSG personnel are engaged in working groups, expert panels, and teams under the Committee of Chiefs of Military Medical Services in NATO, the ABCA Armies Program, the Air and Space Interoperability Council, the Quadripartite Medical Intelligence Committee, the Multinational Interoperability Council, and other bi- or multi-lateral allied partnerships.

They help develop allied Standardization Agreements (STANAGs), publications, and practices to support common standards and integration for nations engaged in coalition activities. In the past four years, many related products were developed and issued for national application. Several more are under development, many of which will result in new STANAGs to improve interoperability.



## CFHSG and the Israel Defense Forces

Among other mutually-supporting multi- and bi-lateral alliances, the CAF and the Israel Defense Forces (IDF) have collaborated on several military health initiatives since 2010. One of the key collaborations has been on the use of the Computer-Assisted Rehabilitation Environment (CAREN), a suite of computer hardware and software designed to assist soldiers suffering from physical injuries or post-traumatic stress disorder in dealing with their afflictions. Canada chaired a CAREN user group meeting in May 2012

and agreed to collaborate on research and clinical program development. Its core steering committee includes medical military representatives from Canada, Israel, the Netherlands, and the U.S. to collaborate on mental health issues. Other joint CFHSG-IDF initiatives underway include clinical and research information exchanges and collaborations in mental health, battlefield trauma, forensic dentistry, and other areas, with five joint CAF-IDF medical scientific publications in 2014.

## Civilian Partners

CFHSG maintains close relationships with national health professional and policy organizations in order to assist them with military health expertise help maintain CFHSG visibility of national health authority trends and policy alignment, and facilitate mutual consideration of civilian and military factors and interests in policy development. Since 2010, for example, CFHSG was invited to sit on the Canadian Medical Forum, which consists of the Presidents and CEOs of all major national medical professional organizations, as well as the Council of Chief Medical Officers of Health, which is composed of the head of the Public Health Agency of Canada and the provincial and territorial Chief Medical Officers of Health. These synergistic partnerships help

mobilize national expertise and resources in support of the health of CAF members, while assisting civilian authorities with CFHSG's health-related expertise in such areas as mass trauma casualty management, disaster medical management, tropical infectious diseases, foreign humanitarian assistance operations, medical defence against chemical, biological, radiological, and nuclear weapons, etc. CFHSG similarly maintains extensive partnerships with academia to support military health research, either directly with specific institutions in which CFHSG clinician-scientists are embedded or through the large university network of the Canadian Institute for Military and Veteran Health Research.



*The CDS, Gen Tom Lawson (left), and the CAF CWO, CWO Kevin West (right), presenting the CF Medallion for Distinguished Service to the Canadian Medical Association (CMA), accepted by the President of CMA, Dr. Louis Hugo Francescutti. Dr. Francescutti is also the 1 Fd Amb Honorary Colonel. (2014)*



The ABC and Global television networks broadcast the television drama series “Combat Hospital” based on specific personalities who served and scenarios that occurred at the Canadian-led Role 3 Multi-National Medical Unit (field hospital) in Kandahar during combat operations in southern Afghanistan. It was one of the only shows ever broadcast in the U.S. where the leaders are Canadians.

CFHSG personnel are members of key national and international health science and leadership entities, for example:

- Academy of General Dentistry
- Accreditation Canada
- Association of Prosthodontists
- Canadian Agency for Drugs and Health Technologies
- Canadian Association of Physician Assistants
- Canadian Academy of Periodontology
- Canadian Dental Assistants Association
- Canadian Dental Hygienists Association
- Canadian Dental Association
- Canadian Dental Specialties Association
- Canadian Medical Association - General Council
- Canadian Medical Association - General Practice Forum
- Canadian Medical Association - Specialists Forum
- Canadian Medical Forum
- Canadian Institute of Military and Veterans Health Research Advisory Council
- Canadian Institute of Military and Veterans Health Research Technical Advisory Group
- Canadian Psychiatric Association – Military Section
- Canadian Society for Medical Laboratory Science
- College of Family Physicians of Canada’s Patient Medical Home steering committee
- Committee to Advise on Tropical Medicine and Travel
- Council of Chief Medical Officers of Health
- Fatality Management Canada
- FDI World Dental Federation
- Federal Drug Benefits Committee
- Fédération Internationale Pharmaceutique - Military and Emergency Pharmacy Section
- Nursing Association (CNA) National Nursing Leadership Forum
- National Advisory Committee on Immunization
- National Association of Pharmacy Regulatory Authorities
- Paramedic Association of Canada
- Royal College of Physicians and Surgeons of Canada

CFHSG Honorary appointments play an important role and contribute in such areas as promoting esprit de corps, providing advice to unit commanders, acting as CFHSG advocates in the community, and serving as custodians of history and heritage. Several honorary appointments hold, or have held, important appointments and positions within the Canadian health sector, for example:

- Royal Canadian Medical Service Colonel Commandant – MGen (ret’d) Pierre Morisset, former Surgeon General;
- Royal Canadian Dental Corps Colonel Commandant – MGen (ret’d) Victor Lanctis, former Director Dental Services, former President of the International College of Dentists;
- 1 Fd Amb – Honorary Colonel Louis Hugo Francescutti, former President of the Canadian Medical Association, former President of the Royal College of Physicians and Surgeons of Canada, Professor, University of Alberta in Emergency Medicine;
- 1 Fd Amb – Honorary Lieutenant-Colonel Ruth Collins-Nakai, former President of the Canadian Medical Association, former President of the Canadian Medical Foundation;
- CF H Svcs Centre (Atlantic) – Honorary Colonel John Haggie, former president of the Canadian Medical Association;
- 23 (Hamilton) Fd Amb – Honorary Lieutenant-Colonel Michael Sanderson, Chief/Director, Hamilton Paramedic Services;
- 28 (Ottawa) Fd Amb – Honorary Lieutenant-Colonel Anthony Di Monte, Chief, Ottawa Paramedic Services;
- 1 Dental Unit – Honorary Colonel Claude-Paul Boivin, Executive Director, Canadian Dental Association; and
- CF H Svcs Centre (Ottawa) – Honorary Colonel Jack Kitts, President and CEO of the Ottawa Hospital, former Chair of the Health Council of Canada.

## CFHSG Participation in International Fora

Air and Space Interoperability Council  
American, British, Canadian, Australian, and New Zealand Armies Program  
Multinational Interoperability Council  
AUSCANUKUS Chemical, Biological, Radiological Memorandum of Understanding,  
Medical Counter-Measures Consortium  
International Committee on Military Medicine  
International Academy of Prosthodontists  
International Academy of Osseointegration  
Quadripartite Medical Intelligence Committee  
Quadripartite Medical Intelligence Analysts Working Group  
NATO – Biological Medical Advisory Council  
NATO – Committee of the Chiefs of Military Medical Services  
NATO – Dental Service Expert Panel  
NATO – Emergency Medicine Expert Panel  
NATO – Food Water Safety and Veterinary Support Expert Panel  
NATO – Force Health Protection Working Group  
NATO – Medical Communication and Information Systems Expert Panel  
NATO – Medical Health Care Working Group  
NATO – Medical Intelligence Expert Panel  
NATO – Medical Material and Military Pharmacy Expert Panel  
NATO – Medical Information Exchange Requirements Expert Panel  
NATO – Medical Naval Expert Panel  
NATO – Medical Standardization Board and Working Group  
NATO – Military Medical Structure, Operation and Procedure Working Group  
NATO – Military Mental Health Expert Panel  
NATO – Submarine Escape and Rescue Working Group Medical Panel  
NATO – Telemedicine Expert Team

A sampling of CFHSG members with national or international scientific and clinical reputations who chose military service with all its risks, dangers, and discomforts because of their dedication to our country's defence and the protection of our troops:

- Maj Vivian McAlister, professor of surgery, Co-Editor in Chief of the *Canadian Journal of Surgery*, and one of Canada's top transplant surgeons
- Maj Paul Farrell, president of the World Association of Disaster and Emergency Medicine
- Maj Mike Christian, an infectious disease specialist of such renown such that the WHO asked the Canadian government to second him to Geneva to help evaluate the MERS epidemic in Saudi Arabia
- LCol Naisan Garraway, medical director of the Vancouver General Hospital trauma program
- Capt(N) Ray Kao, a world-class critical care researcher at London's Lawson Health Research Institute and holder of the CAF Group Captain G. Edward Hall, AFC, RCAF Chair in Military Critical Care Research
- Col Homer Tien, medical director of Canada's largest trauma centre at Sunnybrook Health Sciences Centre Toronto, and holder of the CAF Major Sir Frederick Banting, MC, RCAMC Chair in Military Trauma Research



Capt(N) Ray Kao

## **Military model might help cure what ails N.S. health-care system**

**CANADIAN FORCES AWARDED HIGHEST NATO HONOUR FOR MEDICAL ACHIEVEMENTS IN AFGHANISTAN**

**Dr. Raymond Kao presented with first Chair in Military Critical Care Research in Canada**

Canadian Armed Forces Medical Officers Recognized by the College of Family Physicians of Canada

CFHS team wins first national SimWars competition

**Military Surgeon Selected as Co-editor of the Canadian Journal of Surgery**

**Mental Health Commission of Canada—In Support of An Evolution of Excellence: the Surgeon General's Mental Health Strategy for the Canadian Armed Forces**

# CARE EXCELLENCE



## INSTITUTIONAL RECOGNITION

### Presentation of Royal Banner by Her Royal Highness The Princess Royal



On 23 October 2013, CFHSG was honoured to host the Colonel-in-Chief of The Royal Canadian Medical Service, Her Royal Highness (HRH)

The Princess Royal, at its Home Station, the Canadian Forces Health Services Training Centre at CFB Borden. Her Royal Highness inspected a 103-person CFHSG Honour Guard, unveiled the new CFHSG formation badge based on that of the Army Medical Department of 1899, visited students on Training Centre courses, met with RCMS members, civilian staff, Honorary Colonels, and strategic civilian partners at a Royal

Reception, and toured a 1 Canadian Field Hospital static display and demonstration of its deployable collective protection capability. The highlight and main purpose of the visit, however, was her presentation of a Royal Banner authorized by Her Majesty the Queen to the Royal Canadian Medical Service to honour the valour, sacrifice, and clinical excellence of its personnel during operations in Afghanistan since 2002. The “Princess Royal’s Banner” was only the third Royal Banner ever granted to a Canadian Armed Forces element since Confederation, the second of which was also presented to the RCMS in 1985 by its former Colonel-in-Chief, Her Majesty Queen Elizabeth the Queen Mother.





## Address by Her Royal Highness The Princess Royal

### COLONEL-IN-CHIEF OF THE ROYAL CANADIAN MEDICAL SERVICE

23 October 2013



*Mon général Bernier, mon général Morisset, Lieutenant-gouverneur Onley, Madame la ministre Leitch, membres et supporteurs du Service de santé royal canadien, je suis très heureuse d'être parmi vous aujourd'hui pour cette occasion spéciale.*

*It was an honour and privilege to be asked to become your Colonel-in-Chief in 2003. I've had the pleasure of visiting members of your Canadian medical service in Kandahar in 2010.*

*I've met the former Surgeon General in London, but was very disappointed that my planned visit to you in Halifax was prevented by, of all things, a volcanic eruption in Iceland that year.*

*Having closely followed reports of your service in Canada and overseas, I am delighted to visit you at your home to recognize your success by presenting this Royal Banner to your Home Station.*





*This banner is only the third presented to a Canadian Forces element since Confederation, and one of the two previous banners was presented to you, in 1985, by your former Colonel-in Chief, Her Majesty Queen Elizabeth the Queen Mother, to honour the first century of the Canadian military medical service.*

*Your significant success at protecting health and saving lives over the past decade in Afghanistan, Haiti, and other operational theatres has already been widely recognized by our allies, by Canadians, and most importantly, by your colleagues in the combatant arms, whose morale and confidence are so heavily dependent on your professionalism.*

*Your most significant international recognition was receipt of NATO's highest honour for medical support, the Larrey award. It was presented to the Royal Canadian Medical Service for leading the multinational tertiary care combat hospital in Kandahar and achieving the highest war casualty survival rate in what was sometimes the busiest trauma centre in the Afghan and Iraqi theatres of operations. This is only the second time it has ever been awarded and the first time it has been awarded to a collective entity rather than to an individual.*

*Your success, however, came with great sacrifice in Afghanistan. Within the Canadian Forces, the medical service suffered the highest number of casualties and personnel killed in action after the combat arms, and many of our members continue to suffer mentally as a result of the horrific injuries they encountered and treated daily among their colleagues and Afghan civilians.*

*Success also came from the continued support of your families, civilian members of the Health Services Group, colleagues who lead elements of the civilian medical and academic communities, and societal leaders who share your sense of duty to the country and to the armed forces, and I am delighted that some of them are present here today because they also merit the recognition which has been bestowed on the Medical Service. And I hope you will all consider the Princess Royal's Banner as a symbol of that commitment and support. Before the First World War, General Sir Ian Hamilton, Inspector General of Overseas Forces, reported that the medical service was by far the best prepared for war of all Canadian military elements due to the wholehearted support it received from the entire civilian medical community. A situation, fortunately, that has not changed to this day.*

*Reforms and experience in operations over the past decade have also resulted in the Royal Canadian Medical Service and many of its individual members being considered national and international leaders in primary care, pre-hospital care, mental health, trauma management, critical care, emergency and disaster medicine, rehabilitation, and other areas of military medicine. Your contributions to and leadership of military health research are among the greatest of all our allies, and much of the new knowledge you generate can be applied to the great benefit of civilian populations.*

*This Royal Banner honours and recognizes the dedication, courage, valour, and sacrifice that you and your comrades who fell in Afghanistan have so faithfully demonstrated in doing your duty, aptly summarized by your motto: "Militi Succurrimus," "We Come to the Aid of the Soldier."*

*In his report at the end of the First World War, Canadian Corps Commander General Sir Arthur Curry noted "The devotion of the medical personnel has been, as always, worthy of every praise." By your service, which merits the distinction of this banner, you have truly honoured your predecessors.*

*Thank you. Je vous remercie, et que Dieu vous protège dans votre service.*



## NATO Dominique-Jean Larrey Award

The Larrey award, named after Napoleon's famous Surgeon General, is the highest honour that NATO can bestow for medical support to the Alliance. It was awarded to Canada and the Canadian-led Role 3 Multi-national Medical Unit in 2012 for its service as the first multi-national NATO hospital in combat operations and, despite

operating under enemy fire and extreme environmental conditions, for having achieved a 98% NATO casualty survival rate, the highest in history until that time. This was only the second time that it was awarded, and the first time it was awarded to a collective entity rather than to an individual.



## Visits from Allies

In order to help inform their military health system reforms, several allied medical delegations visited CFHSG since 2013 including one led by the Polish Surgeon General, the New Zealand Surgeon General, and the General responsible for the French military hospital system. The French

Service de Santé des Armées has since launched a reform that includes many elements of the CAF model, and the Director of the U.S. Defense Health Agency has asked to visit CFHSG in order to help inform options for the U.S. Defense Health System.

## Canadian Patient Safety Institute 2014 Award for Innovation in Patient Safety Education

The *Canadian Journal of Surgery* appointed a CAF Medical Officer as a co-editor of this publication, symbolizing the high esteem in which CAF doctors are held in the Canadian medical community. "The appointment of Major Vivian McAlister as co-editor of the *Canadian Journal of Surgery* illustrates the exemplary work of the CAF medical team" said the Honourable Peter MacKay, Minister of National Defence. "The health of CAF personnel is a top priority for this government and medical officers such as Major McAlister represent the finest doctors in our country and abroad. On behalf of the Government of Canada, I wish to say congratulations."

## Real Property Institute of Canada 2014 Award for Best Practices in Comprehensive Planning

"The Canadian military medical service has got a worldwide reputation for its outstanding work and its professionalism."

Medical Corps International (Germany), 2012



# INDIVIDUAL NATIONAL HONOURS

## OFFICER OF THE ORDER OF MILITARY MERIT

Capt(N) Cyd Courchesne  
 LCol Daniel Farris  
 LCol Rakesh Jetly  
 Capt(N) Raymond Kao  
 Col James Kile  
 Col Colin Mackay  
 Col Richard Pucci  
 Col Danielle Savard  
 Col Kristiana Stevens  
 Col James Taylor  
 LCol Homer Tien  
 Col David Weger

## MEMBER OF THE ORDER OF MILITARY MERIT

LCol Patrick Brizay  
 WO Mario Charette  
 Sgt Russell Coughlin  
 WO Kevin Dickson  
 CWO William Doupe  
 Sgt Jason English  
 Sgt Michael Escott  
 Sgt Timothy Ferguson  
 LCdr L.A. Forward  
 CWO Dominique Geoffroy  
 CWO Stephan Goupil  
 WO Donald Haley  
 MWO John Hann  
 Maj Wendy McKenzie  
 CWO Diane Maidment  
 PO1 Derick Nearing  
 CWO André Normandin  
 MWO Brad Olmstead  
 CWO Dorothy Paradis  
 CPO1 Mario Richard  
 WO Marie Seaward  
 Sgt Yan St-Pierre  
 MWO Micheal Vandepol  
 CWO Helen Wheeler

## MERITORIOUS SERVICE CROSS

CPO2 Martin Bedard

## MEDAL OF MILITARY VALOUR

Cpl B. Belanger  
 Cpl Bradley Casey  
 Sgt Gilles-Remi Mikkelson

## MEDAL OF BRAVERY

MCpl Jean-Francois Vaillancourt – 2014

## MERITORIOUS SERVICE MEDAL

LCol Suzanne Bailey  
 LCol Annie Bouchard  
 WO Jules Berube  
 Capt Marc Dauphin  
 LCol Michael Kaiser  
 Col Martin Lipcsey  
 LCol Stephan Plourde  
 Capt(N) Rebecca Patterson  
 Cpl Corey Sagstuen  
 Col Danielle Savard  
 Capt Shane Smith  
 LCol Maxime Talbot  
 Capt Connie Watson  
 Cdr David Wilcox

## ORDER OF ST JOHN OF JERUSALEM

CWO Maurice Chapman  
 MCpl Kathryn Davis  
 Maj Jason English  
 Capt David Fortin  
 Maj Dean Gresko

## U.S. MERITORIOUS SERVICE MEDAL

BGen Hillary Jaeger  
 Maj Guy Langevin  
 Sgt Daniel Simoneau  
 LCol Ewen Wrighte

## MENTION IN DISPATCHES

MCpl Marie Bilodeau  
 Maj Serge Blier  
 MCpl Hugh Dixon  
 Sgt Kelly Harding  
 Cpl Valerie Noel  
 WO Cecil Plamondon  
 Cpl Corey Sagstuen  
 PO1 Kenneth White

## VICE-REGAL COMMENDATION

LCol Roger Scott

## PUBLIC SERVICE AWARD OF EXCELLENCE

Dr. Janick Lalonde

## DEPUTY MINISTER/CHIEF OF DEFENCE STAFF INNOVATION AWARD

LCol Jean-Pierre Picard – 2014



*The Governor General of Canada, the Right Honourable David Johnston, presented the Order of Military Merit at the Officer level (O.M.M.) to LCol Homer Tien.*



*His Excellency presented the Order of Military Merit at the Member level (M.M.M.) to Sgt Yan St-Pierre.*



*The CDS/DM Innovation Award was awarded to LCol Jean-Pierre Picard for his visionary approach to generating innovative and efficient changes to the CAF dental care system.*

**CDS COMMENDATION**

MCpl Richard Alam  
 Cpl Marc-Andre Amyotte  
 PO1 René Asselin  
 Maj Barbara Anne Besenyodi  
 LCol Sean Blundell  
 Sgt Michael Bursey  
 LCol Paul Charlebois  
 LCol Pierre Charpentier  
 MCpl Yannick Coté  
 Maj Bernard Couillard  
 MWO Peter Coyle  
 LCol Andrew Currie  
 Cpl Christopher Dwyer  
 LCol Paul Eagan  
 Cpl Chase Encil  
 LCol Anne Espenant  
 MS David Finamore  
 MCpl Jean-Francois Gauvin  
 Sgt Alannah Gilmore  
 Maj Eric Girard  
 MCpl Veronique Girard-Dallaire  
 LCdr Peter Hatfield  
 Maj Rachel Jette  
 LCol Robert Johnston  
 LCol Douglas Kromrey  
 Col Martin Lipcsey  
 LCol Scott Malcolm  
 MWO John McBride  
 Maj Francois Melancon  
 Cpl David Morrissette  
 Maj Catherine Mountford  
 Lt April Murphy  
 Maj Monica Ott  
 Capt Dylan Pannell  
 MCpl Richard Paul  
 WO Luc Piquette  
 WO Timothy Ralph  
 LCol William Rideout  
 LCdr Linda Rodger  
 LCol Randolph Russell  
 LCol Erin Savage  
 Maj Yvonne Severs  
 Sgt Jean-Paul Somerset  
 Sgt Yan St-Pierre (Ret'd)  
 LCdr Kirk Sundby (Ret'd)  
 William Swales

Maj Daniel Thibodeau  
 Sgt Dany Tremblay  
 Cpl Joan Villabroza  
 MWO Douglas Wheatland  
 Sgt Robert Wickens  
 Maj Brent Wolfrom

**VCDS COMMENDATION**

MCpl Stephen Laroche  
 Maj Yves Parisot  
 LCdr Suzanne Thistle

**CMP COMMENDATION**

Sgt Kevin Bergeron  
 Capt Rachel Cane  
 Col Scott McLeod  
 Sgt Mitton  
 WO Pellerin  
 Capt Samantha Roman  
 LCol Ewen Wright

**CEFCOM / CJOC  
COMMENDATION**

LCol Robin-Marie Adams  
 Capt Edith Arbour  
 WO Gerald Arsenault  
 Cpl Amy Bailley  
 LCdr James Barnes  
 Cpl Monique Bartlett  
 MCpl Cheryl Belanger  
 CPO2 Martin Bédard  
 LCdr Jeffrey Biddiscombe  
 CPO2 Eric Bouchard  
 Cpl Joannie Breton  
 LCdr Wade Brockway  
 Cdr Ross Brown  
 Sgt Michael Brushett  
 Maj Buisserie  
 WO Glenn Bureau  
 Cpl Amélie Cases  
 Cpl Johathan Choinière  
 Capt(N) Peter Clifford  
 Capt William Colas  
 Sgt Lance Coleman  
 Maj Lisa Compton  
 Sgt Martin Côté  
 Sgt Guillaume Couture

Lt(N) Allan Crawford  
 Maj Brent Crawford  
 LS James Dalebozik  
 Sgt David Desjardins  
 WO Kevin Dickson  
 Pte Stephanie Dort  
 MWO Trent Doucette  
 Lt(N) Jan Dana Downing  
 Capt Maurice Ennis  
 Capt Robert Ennis  
 Cpl Martin Falardeau  
 LCol Edward Fieg  
 MCpl Jason Fink  
 MCpl Stephanie Flood  
 Sgt Forester  
 LCdr Joni Forsyth  
 Cpl Stéphane Fortin  
 Cpl Bernard Gagnon  
 Cpl Martin Gagnon  
 MCpl John Gallant  
 Maj Andre Grenier  
 Capt Adam Hannaford  
 Sgt Kelly Harding  
 Capt Réal Hébert  
 CPO2 Pete Jardine  
 Cdr Sandy Jalonen  
 Capt Meghan Joiner  
 MCpl Frank Labodi  
 MCpl Stephane Lajeunesse  
 Cpl Travis Lanoway  
 Capt Terry Larson  
 MWO William Leahy  
 Cpl Sophie Leduc  
 Sgt Andre Lemire  
 Capt Hélène Lescelleur  
 Cpl Louis-Maxime Lévesque  
 Maj MacAuley  
 MCpl Matthew MacAulay  
 Maj Marsha MacRae  
 LCol Scott Malcolm  
 Maj Vivian McAlister  
 MCpl John McGinn  
 Cpl Daniel Meeking  
 Maj Rajmund Miksa  
 Jennifer Miron  
 CWO Chris Moffatt  
 MCpl Frederick Morissette



Capt Alexander Natale  
 Capt Jean-Francois Noel  
 MCpl Gretel Quinonez  
 MCpl Michel Racine  
 Sgt Julien Ricard  
 Capt Robertson  
 Capt Michéle Robichaud  
 MCpl Richard Robichaud  
 Cpl Alexandre Robitaille  
 Sgt Nathan Ronaldson  
 MCpl Lucie Rouleau  
 LCol Erin Savage  
 Capt JoAnne Schmid  
 MCpl Brent Schriener  
 MCpl Pascal Simoneau  
 MWO Todd Sinclair  
 MCpl Bradley Studham  
 Sgt John Thomson  
 Sgt Ken Voutour  
 Cpl Heather Watkins  
 Maj Cher Whynot  
 Cpl Robert Wickens  
 Cpl Melissa Wiseman  
 Cpl Johnny Wong  
 CF Health Services Centre (Ottawa)  
 Detachment Geilenkirchen  
 Joint Task Force Afghanistan Health  
 Services Unit – ROTO 4

**CHIEF OF LAND STAFF  
 COMMENDATION**

Maj Barbara Anne Besenyodi  
 Dr. Heather McCuaig

**CANADA COMMAND  
 COMMENDATION**

Maj Stephane Roux

**CANOSCOM  
 COMMENDATION**

Lt(N) Elodie Tremblay

**DEPUTY  
 COMMANDER NORAD  
 COMMENDATION**

LCol Douglas Kromrey

**MAJOR-GENERAL  
 J.W.B. BARR AWARD  
 OF EXCELLENCE**

WO Anthony McKenzie – 2010  
 WO Craig Harvey – 2011  
 LCol Dwayne Lemon – 2012  
 Capt Stephanie Smith – 2013

**CANADIAN FORCES  
 UNIT COMMENDATIONS**

**CAF Aeromedical Evacuation Flight –  
 Trenton – 2012**

Awarded a Unit Commendation for their extraordinary efforts since 2008 to ensure that injured CAF personnel were swiftly returned to Canada with great professionalism, dedication, and compassion. In addition, their vital role in Op UNIFY and Op HESTIA alleviated the suffering of many Canadians and foreign nationals from the devastating effects of natural disasters. The entire team displayed an uncommon dedication and adaptability that has contributed to ensure successful operations.

**CAF GROUP CAPTAIN  
 G. EDWARD HALL,  
 AFC, RCAF CHAIR IN  
 MILITARY CRITICAL  
 CARE RESEARCH**

Capt(N) Raymond Kao

**MAJOR SIR FREDERICK  
 BANTING, MC, RCAMC  
 AWARD FOR MILITARY  
 HEALTH RESEARCH**

Dr. Jitender Sareen – 2011  
 Dr. Jacqueline Heber – 2012  
 Dr. Mark Zamorski – 2013



*BGen J.-R. Bernier presented the CEFCOM/ CJOCC Commendation to Capt JoAnne Schmid.*



*BGen J.-R. Bernier presented the Major-General J.W.B. Barr Award to LCol Dwayne Lemon.*



*BGen J.-R. Bernier, Surgeon General, and Michael Burns of the True Patriot Love Foundation, presented the 2013 Major Sir Frederick Banting Award for the best oral presentation related to military health to Dr. Mark Zamorski.*



*BGen J.-R. Bernier with the Banting family.*

**SURGEON GENERAL'S  
CLINICAL COIN****1 July 2010 to 31 Dec 2014**

Dr. Alice Aiken  
 Dr. Stephanie Belanger  
 David Boulos  
 Dr. Maureen Carew  
 MWO Maurice Chapman  
 Maj Steve Cooper  
 Col George Costanzo  
 MCpl James Craig  
 Cdr Charles Cross  
 Maj Daniel Crumback  
 Scott Currie  
 WO Kevin Dickson  
 Cpl Mark Dixon  
 Deniz Fikretoglu  
 RAdm David Gardam  
 Claire Griffin  
 Sgt Brenda Hay  
 Robert Hawes  
 Sandra King  
 Edyta Kowalska  
 Wendy Kowaluk-Crozier  
 Col Martin Lipcsey  
 Deborah Livergood  
 Susan Marlin  
 Maj Vivian McAlister  
 Capt Mike McBride  
 Maj Heather Morin  
 Maj Cheryl Netterfield  
 Heather Robinson  
 Peter Schieldrop  
 Maj Paul Sedge  
 Capt Shane Alexander Smith  
 Elaine Somers  
 Maj Sunil Sookram  
 Mary Ann Spott  
 MCpl Robert James Thibeault  
 Maj Jean Tiefenbach  
 LCdr Patrick Wahl  
 Capt Raymond Wiss  
 Dr. Scott Young

**INTERALLIED  
CONFEDERATION OF MEDICAL  
RESERVE OFFICERS****PRESIDENT'S AWARD**

LCol Mark Thibert – 2013

**MEDAL OF MERIT**

LCol Ross Purser – 2013

**ASSOCIATION OF MILITARY  
SURGEONS OF THE UNITED  
STATES REHABILITATION  
AWARD**

LCol Markus Besemann – 2014

**CANADIAN MEDICAL  
ASSOCIATION  
JOHN MCCRAE AWARD**

LCol Bethann Meunier – 2014

**CANADIAN COLLEGE  
OF HEALTH LEADERS  
AWARD FOR  
DISTINGUISHED SERVICE****Eastern Ontario**

Col David Weger – 2013

**ROYAL COLLEGE  
OF PHYSICIANS AND  
SURGEONS OF CANADA  
HONORARY FELLOWSHIP**

BGen Jean-Robert Bernier – 2013

**COLLEGE OF FAMILY  
PHYSICIANS OF CANADA****MURRAY STALKER AWARD**

Capt Scott MacLean – 2012

**FAMILY MEDICINE RESIDENT  
LEADERSHIP AWARD**Capt Scott MacLean and  
Capt Jason Lorette – 2012**BOB ROBERTSON AWARD**

Capt Melissa Welsh – 2012

**AWARD OF EXCELLENCE**

Shawn Benninger – 2012

**CANADIAN ASSOCIATION OF  
GENERAL SURGEONS  
RESIDENT TEACHING AWARD**

Capt Dylan Pannell – 2014

**AMERICAN COLLEGE OF  
SURGEONS COMMITTEE ON  
TRAUMA****MILITARY RESIDENT CLINICAL  
SCIENCE AWARD**

Capt Dylan Pannell – 2014

**CAF MEDALLION FOR  
DISTINGUISHED SERVICE**

Dr. Peter Blackie  
 M. Eykelenboom  
 Steve Stawiarski  
 Dr. David Sweet  
 The Canadian Medical Association  
 The Ottawa Hospital  
 The Royal College of Physicians and  
 Surgeons of Canada





PROVIDING DEPLOYABLE HEALTH SERVICES  
CAPABILITIES TO SUPPORT OPERATIONS





## MOBILE SURGICAL RESUSCITATION TEAM

In 2009, CFHSG identified a requirement for a light, mobile surgical asset that would be operationally versatile and capable of working in all environments and under austere conditions. The Mobile Surgical Resuscitation Team (MSRT) was thus established as a small and light surgical asset capable of caring for two critically wounded patients for up to 24 hours without imposing a logistical burden on a deployed task force. Originally intended for short-notice, short-duration, high-risk deployments such as special operations missions, it can also be used as an initial response in other contingencies while larger forces are being prepared.

Teams are composed of six CFHSG personnel, including an emergency room physician, anaesthesiologist, trauma surgeon, orthopaedic surgeon, critical care nurse, and operating room technician. Since its inception in 2010, the MSRT has trained with several international partners on a variety of military platforms and deployed domestically and abroad. It is a capability that continues to evolve to effectively support CAF operational needs.





## MEDICAL TRAINING AND READINESS EXERCISES

Since 2010, CFHSG personnel have participated in several humanitarian and civil assistance missions with U.S. forces to areas of Latin America, the Caribbean, and the Pacific. They include the Operations PACIFIC PARTNERSHIP and CONTINUING PROMISE, and the Exercises BEYOND THE HORIZON and NEW HORIZON.

PACIFIC PARTNERSHIP is an annual deployment U.S. Navy Pacific Fleet forces in cooperation with regional governments, regional armed forces, and humanitarian non-government organizations. The deployment aims to improve the interoperability of these entities during disaster relief operations, while providing humanitarian, medical, dental, and engineering assistance to Pacific nations. CFHSG personnel aboard the hospital ship USNS Mercy provided humanitarian medical assistance to the Philippines, Vietnam, Timor-Leste, and Papua New Guinea in collaboration with India, Australia, and New Zealand.

Similar to Op PACIFIC PARTNERSHIP, Op CONTINUING PROMISE saw the deployment of CFHSG personnel for up to 5 months aboard the hospital ship USNS Comfort. They worked with medical and dental professionals from the armed forces of five allies and dozens of non-governmental organizations to provide health care to patients ashore and aboard the ship

in under-served regions of Columbia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Jamaica, and Nicaragua.

Exercises BEYOND THE HORIZON and NEW HORIZON are regular land-based medical training and readiness exercises sponsored by U.S. Southern Command. They consist of multiple 2-week deployments of health personnel to provide health care from Forward Operating Bases in rural areas. Regular and Reserve CFHSG personnel have been embedded within U.S. Army and U.S. Air Force medical teams to provide health services such as public health and preventive medicine, dental care, adult and pediatric medicine, medical education, immunizations, and nutritional counseling to thousands of patients in Belize, Haiti, Honduras, and El Salvador. These exercises provide CFHSG members valuable experience in dealing with medical realities in austere areas of the world and medical needs rarely or never encountered in Canada. They also enable CFHSG to maintain professional ties and interoperability with health professionals of allies and civilian counterparts.



## HEALTH SERVICES RESERVE

Since 2010, the Health Services Reserve (H Svcs Res) has continued to contribute to the defence of Canadian interests at home and abroad.

Many reservists have full-time careers outside the CAF in a diverse range of civilian healthcare professions, including medicine, nursing, and social work. Many are full- or part-time students or members of other trades or professions. This diverse group, representing over a dozen health professional disciplines, trains up to 52 days per year in military and occupationally specific skills, in addition to undergoing leadership and advanced professional training.

The H Svcs Res has contracted in size since 2010 in response to the reduced commitment to Afghanistan, but it has continued to prepare for and deliver health care in support of routine and deployed CFHSG missions. These have included:

- deploying on humanitarian missions abroad with international partners;
- undertaking full-time duties in support of CFHSG clinics across Canada;
- relieving Regular Force clinicians across Canada who are deployed on operational missions; and
- representing the CAF within their own communities and in the far North for Territorial Defence and Arctic Response.

Focused on combat humanitarian assistance scenarios, the H Svcs Res has delivered health care to people from nations in Central and South America and Mongolia. Since late 2010, the H Svcs Res has partnered with U.S. Southern Command (Army Reserve South and Air Force South), U.S. Pacific Command, U.S. Army Reserve, U.S. Air National Guard Bureau, and Alaskan Air National Guard in the execution of 13 humanitarian assistance or combat exercises across the U.S., Central America, South America, and Mongolia.

The H Svcs Res evolves with the Regular Force elements of CFHSG to support the government's defence and security priorities. Constantly modernizing its occupational structures, updating scopes of practice, and mirroring national standards, the H Svcs Res has remained relevant and current and continues to develop its members by providing progressive leadership training and responsibilities. Those who have experienced this training have that "been there" confidence that is unique and invaluable in establishing institutional credibility and ensuring operational effectiveness on future deployments.



## OP ATHENA

The Canadian legacy in southern Afghanistan will be forever remembered by those who served there and whose lives and health were preserved by CFHSG personnel. Operation (Op) ATHENA (Phase 2) started in 2006 and concluded in December 2011, followed by a transition to a training mission in Kabul and Mazar-e-Sharif (Op ATTENTION). During this period of combat operations, CFHSG suffered great sacrifices in providing health care to coalition forces and to Afghan civilians, with Medical Service personnel suffering the highest number of wounded and killed-in-action after the combat arms, almost all Medical Technicians. The professionalism and dedication of its members, however, contributed to mitigating the operational and environmental risks to life and health, saving the lives of countless Canadian, coalition, and Afghan personnel, returning half our ill and injured CAF members to duty in theatre, and helping preserve the morale and will to fight among military personnel who knew they would receive the best possible health care if injured.

CAF combat operations in Afghanistan ceased in July 2011 following a Relief-in-Place conducted with the U.S.-led Task

Force “Arctic Wolves.” Roto 11 was known as the Mission Transition Task Force (MTTF) to which the Joint Task Force Health Services Unit (HSU) provided health care while repatriating or disposing of medical materiel, supplies, and equipment as the mission closed out.

The conclusion of Op ATHENA saw the end of an important and illustrious chapter of CFHSG history. The decade of conflict in Afghanistan particularly challenged CFHSG when it led the Role 3 Multinational Medical Unit in Kandahar from February 2006 to October 2009. Supplementation by allied military and Canadian civilian medical staff, collaboration with civilian partners, and mobilization of a robust medical Reserve Force helped CFHSG effectively provide the tertiary care treatment facility for Canadian and allied forces in southern Afghanistan. The combination of superb pre-hospital care in the field and hospital care in the R3MMU resulted in a 98% NATO and a 97% overall survival rate, the highest in history until then. After transferring R3MMU leadership to the U.S. Navy, a robust but reduced CFHSG staff continued to serve in the R3MMU under U.S. command until November 2011.





DND's Chief of Review Services evaluated the relevance and performance of Medical Support to Deployed Operations (MSDO) between 2008 and 2013. It confirmed the need, and concluded that it met expectations and delivered high quality, world class care that was recognized with several national and NATO honours. Some of its key points were that medical support is an essential enabler critical to deployed fighting forces, that improvements to training like Tactical Combat Casualty Care and Tactical Medicine courses increased survival, and that leveraging non-CAF support for the R3MMU gave us capacity to deliver a historically unprecedented 98% survival rate.

## Reconstitution of the Field Hospital

Repatriation of the 1 Canadian Field Hospital (1CFH) equipment on which the R3MMU was founded occurred in July 2010. A team of medical, supply, and biomedical equipment technicians deployed to Afghanistan for one month to oversee the collection and shipping of items from the Kandahar Airbase back to Canada.

Items deemed unserviceable or that were left in theatre for use by our American counterparts were replaced through the Major Medical Equipment Program from 2011 through 2013. The cost to repair and replace items was low as a result of the efforts of biomedical equipment technicians to carefully maintain the equipment while in theatre. The most expensive and complex item of medical equipment, the CT scanner, was refurbished and repatriated to Canada for daily use at CFB Valcartier.

Throughout the Afghanistan mission, 1CFH maintained the required consumable holdings in preparation for secondary missions. With its equipment stores fully replenished post-Afghanistan, 1CFH has been ready to again support multiple operations. In addition to maintaining readiness to deploy the Acute Medical Surgical Capability, 1CFH currently holds a number of other high-readiness tasks, including serving as the primary force generator of the Mobile Surgical Resuscitation Team (MSRT) and Major Air Disaster (MAJAD) medical platoon. Finally, the Advance Surgical Centre is the hospital model used for expeditionary operations and is capable of providing Role 2 Enhanced and Role 3 in-patient care. The combination of these capabilities enables 1CFH to achieve its mission of providing tailored Role 2 and Role 3 health service support to CAF operations and maintaining a flexible high-readiness posture to respond rapidly when called upon.





## OP ATTENTION

Op ATTENTION was Canada's contribution after 2011 to the NATO Training Mission – Afghanistan (NTM-A), which delivered leadership development and training support to the Afghan National Security Forces (ANSF). CFHSG led the NTM-A medical advisory mission from July 2011 to December 2013 at the Armed Forces Academy of Medical Sciences (AFAMS), the Regional Military Hospital in Mazar-e-Sharif, the Kabul Military Training Centre (KMTC) medical clinic, and the 438 Air Expeditionary and Pohantoon-e-Hawayee (PeH) medical clinics. In addition to the advisory mission, an integral support team provided Role 1 medical support to the Canadian Contribution Training Mission – Afghanistan (CCTM-A) Task Force and various coalition forces located throughout Kabul and satellite sites.

## Armed Forces Academy of Medical Sciences (AFAMS)

A significant component of the advisory mission was to re-establish AFAMS as an academic institution and develop a standardized medical and dental individual training and education system. Essential to this task were the establishment of Afghanistan's first training standards and quality control capability and introduction of the concept of formal management training and instructor development. The advisory team brought relevant Afghan ministries together for Graduate Medical Education planning and curriculum development, a first in recent history, and facilitated the Public Health Ministry's adoption of an Infectious Disease and Preventive Medicine Residency Curriculum for all Afghan residency programs. They helped civilian dentists organize the Afghanistan Dental Association (ADA) and obtain government recognition, facilitated strategic relations between the ADA and the Canadian Dental Association (CDA), and supported CDA sponsorship of the ADA in the FDI World Dental Federation and attendance at the World Dental Congress. Health Canada provided the advisory

team its nationally recognized Dental Therapist curriculum, which was then tailored for the Afghan National Army (ANA). The occupations of dental therapist and nursing assistant were established, as well as an ANSF stomatology (dental) institute. The team helped build continuing medical education packages for the refresher training of various health occupations and for practicing Afghan healthcare providers with little to no formal training in their field.

Working with Afghan physicians and Canadian academic and professional associations, the advisory team developed a Graduate Medical Education specialist residency program for General Surgery, Urology, Anaesthesiology, Internal Medicine, Infectious Diseases and Preventive Medicine, Orthopaedics and Traumatology, and Ear Nose and Throat. This residency program received Minister of Defence approval and Ministry of Public Health accreditation, a first for the ANSF, and was launched in October 2012.





## Mazar-E-Sharif Regional Military Hospital

The Medical Training Advisory Team (MTAT) deployed in Mazar-e-Sharif provided administrative and clinical advice and guidance to the Afghan staff of the 100-bed Regional Military Hospital–North at Camp Shaheen, an ANA facility serving northern Afghanistan. A combined American, Canadian, and German team, MTAT drew on the experience of diverse medical professionals, including

an Anaesthetist, Orthopaedic Surgeon, General Surgeon, Infection Control, Operating Room, General and Critical Care Nurses, Laboratory Technician, X-ray Technician, Preventive Medicine Technician, Internal and General Practice Physicians, Pharmacist, Biomedical Equipment Technician, and Medical Administrators.

## Kabul Military Training Centre (KMTC)

The KMTC medical mentorship team provided assistance to an 87-person Afghan clinic that provided medical services to 10,000 soldiers undergoing ANA basic training. Mentorship accomplishments included:

- improvement of the vaccination program;
- development of an EKG course;
- development of a trauma-response system;
- implementing a grand-rounds program;
- improving KMTC Preventive Medicine inspections;

- facilitating the AFAMS Preventive Medicine course field phase; and
- assisting in the design and establishment of the new KMTC clinic.

The mentorship team also provided integral medical support to 800 multinational coalition forces in Camp ALAMO, collocated within KMTC.





## OP RENAISSANCE

Op RENAISSANCE was the CAF contribution to the Government of Canada's humanitarian response in the wake of Typhoon Haiyan, which struck the Philippines on 8 November 2013. This response included deployment of the CAF's Disaster Assistance Response Team (DART) and personnel from DFATD.

The DART was deployed on short notice with the first personnel departing 48 hours after Typhoon Haiyan made landfall. Over 300 CAF personnel were deployed as part of Op RENAISSANCE between 10 November and 15 December 2013. With the main camp located in Roxas City, Panay Island, core elements of the DART, including medical, engineering, and logistics, provided humanitarian assistance to the population. An aviation detachment also augmented the DART for movement of personnel and relief goods throughout the region.

The DART medical platoon is a critical element that is designed to respond to the medical needs of the population during the relief phase of a humanitarian crisis. It comprised 49 members of 2 Field Ambulance and 1CFH, based primarily in Petawawa. It included medical, laboratory, and preventive medicine technicians, general and critical care nursing officers, a pharmacy officer, healthcare administration officers, and medical officers.

Based on the unique humanitarian response environment in the Philippines, the medical platoon was unconventionally employed in several deployable mobile medical teams (MMTs) capable of functioning independently. MMTs were deployed efficiently with logistics and security support to meet the humanitarian needs of the population. Under this

construct, DART MMTs conducted over 70 medical missions across all four provinces of Panay.

Medical personnel from the Armed Forces of the Philippines and CAF conducted joint medical missions. This effort highlighted the extensive international co-operation between DART, the Philippine Government, and international aid organizations. The United Nations Under-Secretary-General for Humanitarian Affairs remarked on the outstanding level of civil and military co-operation while visiting the Regional Disaster Relief Coordination Centre in Roxas City, where DART headquarters was co-located.

The production of potable drinking water was another critical capability of DART during this mission. While engineering specialists operated the reverse osmosis water purification units, preventive medicine technicians were responsible for ensuring that water was potable for distribution.

The CAF contribution to the humanitarian response in the Philippines was outstanding. By mission completion, over 230,000 pounds of food aid and over 10,000 pounds of shelter items were distributed throughout the region. Engineers cleared over 140 km of roads, repaired eight generators, and completed 14 construction projects. The medical contribution to the success of Op RENAISSANCE included the provision of health services to over 6,600 patients.

All CAF personnel who participated in Op RENAISSANCE will forever be reminded of the amazing strength and resilience of the people of the Philippines in the face of a devastating natural disaster.





## OP REASSURANCE

In early 2014 in response to Russian aggression and provocation against the Ukraine, Canadian Air, Naval and Army elements deployed to reinforce NATO's collective defence and to demonstrate the strength of allied solidarity. CFHSG deployed medical personnel to various locations to support Canada's contribution to NATO.





## OP IMPACT

In late 2014 in response to Alarming advances of the Islamic State of Iraq and Levant (ISIL) and threats to regional security, the MSRT was deployed with integral CANSOFCOM medical elements to support CANSOFCOM's mission to advise and assist Iraqi forces on the ground. A Health Services Unit was also deployed to Kuwait in support of RCAF strike, reconnaissance, and refuelling elements contributing to the multinational mission.



## OP SIRONA

Up to 40 CAF doctors, nurses, med techs and support staff will deploy to Sierra Leone for up to six months in support of Canada's whole-of-government response to fighting the Ebola outbreak in West Africa. They will be treating suspected and confirmed cases of Ebola in local and international healthcare workers. The initial deployment into Sierra Leone will commence late December 2014 and will be preceded by comprehensive training which will allow CAF personnel to safely and effectively augment United Kingdom military medical personnel operating at the Kerry Town Treatment Unit, near the capital city of Freetown. CAF personnel will be fully trained on the use of personal protective equipment and security protocols required to keep staff safe and to prevent infection.



PROVIDING HEALTH ADVICE



## ADVICE THROUGHOUT THE CHAIN OF COMMAND

In accordance with Queen's Regulations and Orders article 34.011, "the senior medical officer at all levels of command is the responsible advisor to the senior officer exercising the function of command or executive authority on all matters pertaining to the health and physical efficiency of all personnel under his jurisdiction." At all levels of the CAF, commanders require expert medical advice on a wide variety of health issues to ensure that they are adequately discharging their responsibilities for the health of their command. There is also a requirement for military health professionals to exercise control on behalf of commanders over professional and technical aspects of health services, related training, and compliance with federal and provincial health-related statutes.

The Surgeon General has an established network of medical advisors to exercise these responsibilities in support of the lowest level of sub-unit commander up to the Minister of National Defence, who is also the de facto "provincial" minister of health for the CAF population. This "professional-technical net" includes a central staff of subject matter experts who develop policy and exert national-level authority on the Surgeon General's behalf, and senior medical officers at all levels of command with accountability for the quality of medical services and advice provided within their area of responsibility. At local, regional, and national levels, clinical practice leaders for each of the CAF's health occupations are responsible for occupation-specific professional technical issues.

CFHSG policies are developed in consultation with civilian health authorities and subject matter experts in order to ensure consistency with Canadian health statutes, regulations, and policies, and they are updated as necessary to reflect evidence-based national best practices.

Decision-making at all levels is guided by the needs of CAF personnel and the unique military operational context. Policies, important decisions, direction on specific issues, and lessons-learned are quickly communicated through the "prof tech net." Advice to commanders typically focuses on medical standards and fitness to complete required tasks, public and occupational health, operational force health protection and readiness, health aspects of operational planning, and maintenance or enhancement of human performance. This advice may impact selection and training of military personnel, policies, personnel employment practices, acquisition of new clothing and equipment, and the conduct of operations.

Medical advice is an important component of the strategic, operational, and tactical planning processes. Command surgeons, specialist advisors, and CFHSG subject matter experts provide advice on medical training content and medical requirements for deployments within Canada and around the world.



*CFHSG Advanced Dive Medical Officers and consultants in Dive Medicine provide invaluable advice to the RCN chain of command concerning an individual's fitness to dive, immediate treatment of dive casualties, and hyperbaric considerations for remote diving operations.*



*Medical advice is central to the development of safe and effective RCAF environmental training, as seen in the evolution of aircrew hypoxia training. Rather than using high-altitude exposures, this training now uses reduced oxygen breathing devices (ROBD) to safely simulate hypoxic conditions.*

- advises senior departmental authorities on significant health issues (Minister, Chief of Defence Staff, Armed Forces Council)
- liaises with other military and civilian health organizations, including the Surgeons General of NATO and non-NATO countries, other government departments with health-related mandates, and civilian clinical, academic, professional, and regulatory health authorities
- formulates an overarching strategy for CFHSG's profession-technical organization, policies and procedures

## STRATEGIC FOCUS

## SURGEON GENERAL

## OPERATIONAL FOCUS

- provides guidance and direction on all aspects of CAF health matters and services
- develops health services policy, sets standards, establishes procedures, and responds to issues
- is the final authority on all health service issues and resolves inter-professional issues affecting various groups of DND/CAF health occupations
- serves CAF functions analogous to those of a provincial deputy minister of health, chief medical officer of health, and health professional regulatory colleges



Marine disasters often require a coordinated, joint civilian-military response. Through ongoing collaboration with provincial and federal partners, CFHSG subject matter experts advise the RCN planners on the development of realistic training scenarios.



The chain of command relies on CFHSG medical advisors for advice on operationally-relevant topics such as fatigue management, spatial disorientation, and life-support equipment. Understanding these areas is essential in the aerospace environment where complex operations, such as air-to-air refueling, demand optimal human performance.



## HEALTH RESEARCH

The mission of the CIMVHR is to enhance the lives of Canadian military personnel, veterans, and their families by harnessing the national capacity for research. The vision of the CIMVHR is that the health and well-being of Canadian military personnel, veterans, and their families are maximized through world-class research resulting in evidence-informed practices, policies, and programs.

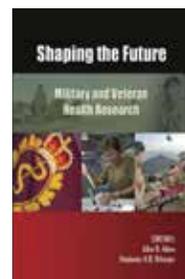
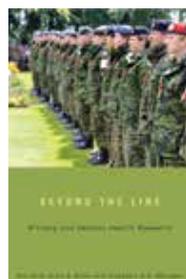
CFHSG members have contributed 69 scientific presentations and 19 scientific posters to the Military and Veterans Health Research (MVHR) Forums held since the first in 2010. Including the Forum to be held in November 2014, to-date:

- 2,000** participants
- 512** presentations
- 211** scientific posters

The Surgeon General's Health Research Program (SGHRP) includes projects and studies conducted exclusively by CFHSG directorates and clinician-scientists, as well as others conducted with a wide variety of external partners, including Defence Research and Development Canada, the Canadian Institute for Military and Veteran Health Research (CIMVHR), Veterans Affairs Canada, other government departments, provincial health authorities, and allied military and civilian health research entities. Since publication of the first Surgeon General's Health Research Strategy in 2009, the SGHRP has successfully consolidated and co-ordinated many formerly fragmented research activities into a single, unified national framework. It has come to support a more robust research and evidence-based culture among CFHSG members, has established military health research as a distinct focus within the broader defence science and technology enterprise, and has more

effectively and coherently mobilized the Canadian academic community in support of military health research.

A significant strategic SGHRP achievement was the conception and cultivation of the CIMVHR to help mobilize greater national academic support to military health research and to coordinate the disparate related interests of individual university researchers. Since the concept was first proposed by the former Surgeon General in June 2009, the CIMVHR has grown to become a consortium of 33 universities led by Queen's University and the Royal Military College. It is governed by a board of directors representing stakeholders, as well as an advisory council that provides it direct links to the beneficiaries and government health research organizations and ensures ongoing relevance of its activities. The Surgeon General delivers a keynote address at every MVHR Forum.





The vision of the Surgeon General's Health Research Strategy has been progressed through strong support from military, political, and academic leaders as well as individual clinicians and scientists within CFHSG and among its many research partners. The practical results are now having a significant impact on how CFHSG helps promote, protect, and restore the health of CAF members. The Strategy's progress since 2010 is reflected in the following accomplishments by CFHSG members:

- completed 23 major research projects, with an additional 20 in progress and 18 more in various stages of approval
- led or currently lead six major NATO Science and Technology Organization research task groups
- Head of Rehabilitation chaired HFM 228, NATO's international symposium on Rehabilitation, Regeneration and Prosthetics for Re-Integration to Duty (Italy 2013)
- mentored, chaired, or co-chaired most NATO mental health-related research task groups
- published 66 scientific articles in peer-reviewed journals
- presented 98 times at MVHR Forum and NATO scientific conferences
- invited to hold 32 honorary academic appointments (one associate dean, one full professor, 12 associate professors, 11 assistant professors, and seven lecturers)
- held two newly-established CAF academic chair positions in military trauma research (Toronto 2012) and military critical care research (London 2013) with two others in development

- members of both the Scientific and Technical Advisory Boards for CIMVHR
- co-led the DND Health Protection Science and Technology Board, which includes members from VAC and the Canadian Institutes for Health Research (CIHR)
- worked with the CIHR to facilitate recruiting a post-doctorate fellow and supported CFHSG participation in two major North American clinical trials with the Resuscitations Outcomes Consortium
- two consecutive Canadian Deputy Surgeons General were selected to chair NATO's research area committee on Health, Medicine, and Protection
- chaired the Technical Co-operation Program Technical Panel on Mental Health Research
- established a collaborative research agreement with the Surgeon General of the Israel Defense Forces in 2013, resulting in five peer-reviewed military health publications in 2014
- study on health impact of Afghanistan operations was selected by the U.S. Department of Defense to be its candidate for the American College of Surgeons' competition for the best research concluded by a surgical resident
- Sunnybrook Health Sciences Centre academic enrichment fund is sponsoring a Canadian Journal of Surgery supplement on military medicine
- provided or published numerous media interviews on military health research
- engaged with philanthropic groups in support of military health research



The Major Sir Frederick Banting, MC, RCAMC Award for Military Health Research was established by the Surgeon General in 2011 with sponsorship from the True Patriot Love Foundation. It is awarded to the researcher whose work presented at the annual Military and Veteran Health Research Forum is judged by the Surgeon General to be of greatest overall value to military health. Its purpose is to recognize and encourage high-quality scientific research that addresses military health issues. Major Banting was a world-renowned physician and researcher who was awarded the Nobel Prize in Medicine for the discovery of insulin. He was also a dedicated medical officer in the Royal Canadian Army Medical Corps who was decorated with the Military Cross during World War I for heroism under fire when wounded. He made extensive contributions to military health research before and during World War II, chaired Canada's first national medical research committee at the request of National Research Council president, General Andrew McNaughton, led the RCAF's No. 1 Clinical Investigation Unit, and is known as Canada's Father of Aviation Medicine. Although he often expressed his preference to serve as a battalion medical officer at the front, he faithfully led national medical research efforts in support of the Canadian and allied war efforts. He was killed on duty in 1941 while travelling on a military medical research mission and was buried in uniform.



# FORCE HEALTH PROTECTION

The Directorate of Force Health Protection (DFHP) is the CAF public health agency. It consists of a diverse group of health professionals with a common goal: keep CAF members healthy and prevent disease and its effects on military personnel in Canada and around the world. In addition to administrative support personnel, its four sections include the Occupational and Environmental Health section (OEH), Communicable Disease Control section (CDC), Epidemiology section, and Health Promotion – Strengthening the Forces (STF) – section.



The OEH section is principally concerned with ensuring a work environment that is free of health hazards. It has subject matter experts in occupational medicine, preventive medicine, industrial hygiene, toxicology, and audiology. In addition to providing occupational health advice and oversight to CFHSG personnel, they provide input and support to research through the SGHRP. Over the last four years, a stronger and more collegial relationship with our civilian DND safety community has resulted in positive initiatives to assure safe and productive work environments for DND. Improved cooperation between preventive medicine technicians and general safety officers has had positive effects at the base/wing level to achieve common shared goals. When requested to perform detailed health-hazard assessments in support of CAF operations in Canada and abroad, the OEH Section provides a Deployable Health Hazard Assessment Team (DHHAT) consisting of bioscience officers and senior preventive medicine technicians. DHHAT has provided direct operational support and expertise in Afghanistan, Haiti, the Middle East, and in Canada's North to address potential health hazards in the challenging environments in which CAF personnel must live and work.



OEH personnel have been actively involved at the local and national level to address occupational health issues. Whether it is a detailed health study of the survivors of the HMCS *Chicoutimi* fire or addressing concerns over the health effects of environmental contamination, radon, mould, or water quality issues, OEH personnel have worked in concert with the other members of CFHSG and the larger CAF/DND community to protect CAF members, DND civilians, and their dependants. A new subunit of OEH is the Medical Intelligence cell, which provides in-depth analysis of existing and evolving health threats and capabilities that may impact CAF missions and those of other government departments. The addition of this team to DFHP brings a unique skill set and expertise which will have positive effects on DFHP support to operations.

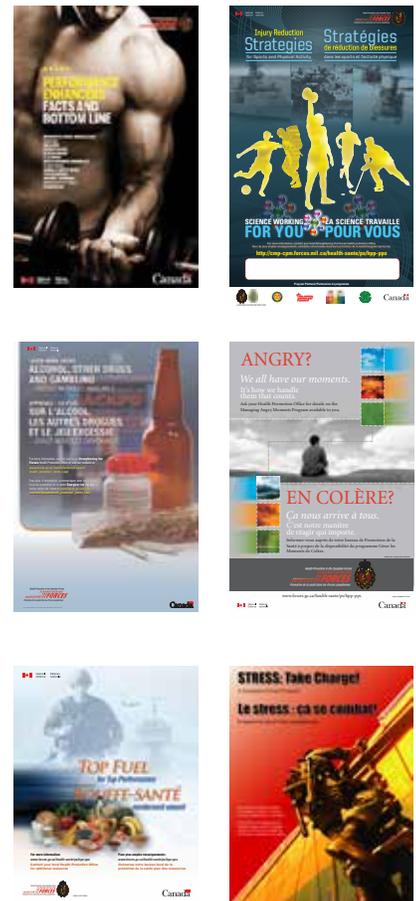
The CDC section is concerned with identifying and mitigating potential infectious disease threats and vector-borne diseases that may affect CAF personnel, mission readiness, and operational capability. This starts in-garrison with a robust immunization program delivered by immunization staff and Preventive Medicine Technicians. Preventive Medicine Technicians also function as public health inspectors at bases and wings to ensure that CAF dining facilities and accommodations meet or exceed civilian standards for public health safety and practice. In the planning and execution of deployed operations, the CDC section provides detailed analysis, health risk assessment, and mitigation strategies to the chain of command in food and water hygiene, immunization recommendations, and personal protective measures to guard against vector-borne disease. This operational focus has resulted in over one hundred published advisories in the last four years in support of operations. In addition, the format and approach of the advice that is provided to operational support has evolved to better address the needs of the chain of command. Increased support to immunizations clinics as well as garrison infection prevention and control programs

has continued to expand and improve over the last four years. Ongoing efforts to improve the training of garrison personnel continue as the level of service and competency of healthcare personnel meets and exceeds national public health standards.

The Epidemiology Section provides expert analysis and capability which benefits the activities of DFHP and the broader CAF health services community. The analysis and interpretation of detailed information from health data has provided the chain of command with answers and information which helps inform command decisions and guide the planning efforts of the organization. For example, the Health and Lifestyle Information Survey (HLIS) 2008/9 report completed in late 2010 indicated that injury was the major cause of inability to deploy. The CF Cancer and Mortality Study (CF CAMS), a record linkage project conducted in collaboration with Veterans Affairs Canada and Statistics Canada, demonstrated that mortality rates among serving and released CAF members was approximately two-thirds of the rate seen among the general Canadian population of the same age and sex distribution. The enhanced capabilities of CFHIS have made it possible to advise firefighters developing performance standards of the actual average weights of CAF members. The Injury Surveillance Pilot Project at CFB Valcartier demonstrated that injury surveillance with data collection at entry to the healthcare system in the CAF is feasible. Three health promotion programs were evaluated: the Alcohol, Other Drugs, and Gambling Awareness Supervisor Training Program; the Weight Wellness program; and the Stress: Take Charge program. One example of the utility of the Recruit Health Questionnaire was a linkage to the Enhanced Post-Deployment Screening questionnaire to investigate the association between pre-military factors and post-concussive symptoms. The Disease and Injury Surveillance System, a deployment health surveillance system, was validated against the electronic health record in Afghanistan. A refined laptop version was developed to allow use on humanitarian missions when intranet connectivity can be unreliable. The quality of care for severe injuries from

Afghanistan continued to be monitored using the Joint Theatre Trauma System. The four major areas of investigation and analysis for the Epidemiology Section in the near future include completion of the cancer linkage for the CF CAMS; creation of performance indicators for the healthcare system using CFHIS data; renewal of the content and process for the Periodic Health Assessment in collaboration with Directorate of Medical Policy; and finally, planning for the next HLIS.

A robust and responsive Health Promotion program is necessary to maximize healthy behaviours and minimize the adverse impacts of unhealthy practices. STF is CFHSG's main national health promotion program. It is primarily delivered across Canada by Personnel Support Program Health Promotion delivery offices. STF provides information, subject matter expertise, training, and skill-building activities to enhance wellness, foster healthy lifestyle behaviours, and support leadership in strengthening a culture of health in the CAF. The program reflects best practices in addictions awareness and prevention, active living and injury prevention, nutrition wellness, and social wellness. Over the last four years there have been a number of key initiatives developed by the section. Addiction education programs and awareness campaigns, such as Butt-Out, have been expanded and updated to better meet the needs of CAF personnel and their families. Working collaboratively with the Directorate of Food Services, STF has provided educational material and programs to improve healthy food choices and habits which have helped inform and educate members of the CAF. Innovative use of STF web-based media has increased the accessibility and relevance of STF programs and services. Efforts to educate CAF members and the chain of command on injury prevention strategies, nutritional supplement use and other performance enhancing drugs have met with great success and have increased awareness across the CAF.



The motto of the CAF's Health and Physical Fitness Strategy is "Healthy and Fit for Life." The long-term goal of STF is to establish a culture of health and physical fitness where people take their health seriously and choose a lifestyle dedicated to eating well, engaging in regular activities that support physical and mental fitness, maintaining a healthy weight, and living an addiction-free lifestyle.

# 369,000

number of person-days of operational and incremental tasks, domestic and expeditionary, from 2010-14

# \$8.9M + \$22.9M

(military ops) (in-garrison care) spent on pharmaceuticals and medical equipment

# 50

average number of CFHSG personnel deployed to ops outside Canada at any given time in 2013

# 1 in 6

suffered from mental illness in past year

# 13.2%

were diagnosed with an Operational Stress Injury within 4 ½ years of deployment in support of the Afghanistan mission

# 2.7%–5.3%

increase in prevalence of PTSD between 2002 and 2013 in the CAF Regular Force

# 48

number of health occupations and specialties

During the span of his 35-year career (assuming 3 deployments), **MWO I.M. Healthy** will live up to his name yet still undergo/receive:

**1** enrolment and **1** release medical

A number of vaccinations including annual influenza

**3** TB tests

**11** periodic health assessments (including vision and hearing screen and diagnostic tests)

**3** pre-deployment, **3** enhanced post-deployment screenings

**35** dental examinations and **35** cleanings

**2** six-month courses of antimalarial drugs

**5** promotion screenings, **1** isolated posting screening

**1** G&PD (test for an enzyme required in order to tolerate antimalarial treatment)

Blood type testing

# 79,000

approximate number of patients treated at R3MMU in Afg since 2006

# 119,412

days H Svcs Res worked in 2013-14

# 1,500

approximate number of health personnel trained in Op ATTENTION (Afghanistan)

# 98%

R3MMU Kandahar NATO casualty survival rate

# 97%

R3MMU total casualty survival rate

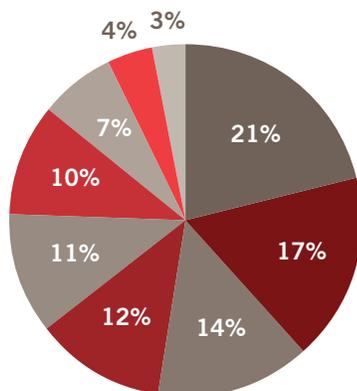
# 22

number of countries in which we provided health services (2010-14)

# 38

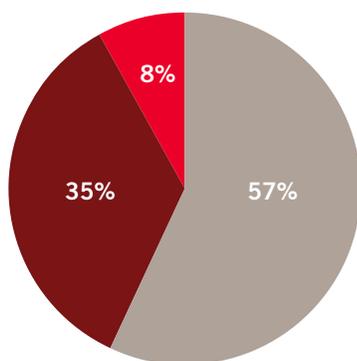
average age of CFHSG personnel

### DIAGNOSES OF 3 B RELEASES REGULAR FORCE 2013



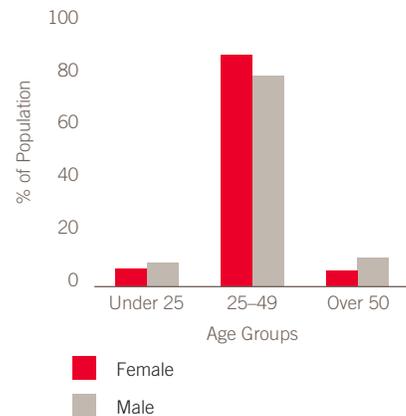
- MH - PTSD
- MSK - lower limb
- MSK - other
- MSK - lumbar spine
- MH - other
- MH - Depression
- Other
- Neurology
- Circulatory

### A TYPICAL DAY OF PATIENT ENCOUNTERS IN A CLINIC

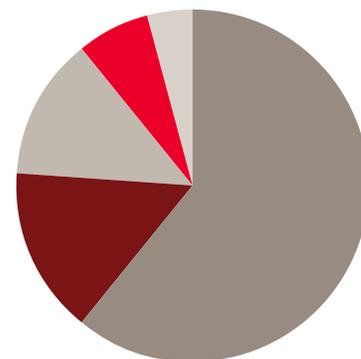


- Scheduled appointments
- Sick parade/walk-in
- Periodic health assessments

### CFHSG AGE/GENDER DISTRIBUTION REGULAR FORCE



### DIAGNOSTIC IMAGING STUDIES COMPLETED IN 2013



- X-ray 37,907
- Ultrasound 9,342
- MRI 8,146
- CT 4,232
- Other 2,433

# 400

approximate number of CFHSG personnel assigned to high-readiness tasks at any given time

# 1,103,651

lab tests in 2013

