



## History Matters

### War and Medicine: from shell shock to PTSD

#### Character Education

- Recognize the value of mental health
- Build enthusiasm for life-long learning
- Value military contributions to Canadian civil society

#### Facts

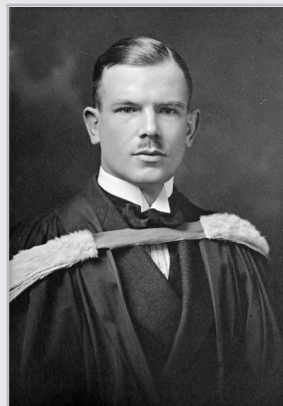
- Approximately 6% of Canada's 27,000 Canadian Forces personnel indicate they've suffered symptoms of PTSD and depression
- In 2010 there were 700,000 living Canadians who serve or had served in the Canadian Forces
- During WWII Canada had a population of just over 11 million of whom one million served in uniform; there were 45,500 military deaths and 54,000 wounded

#### Before the Reading

- Debate whether or not war can have benefits for society
- List all the reasons that mental illnesses and disorders are not regarded in the same way as physical disorders. Is this fair?
- Why is it important to learn not only in school but also all life long?

#### Reading

It has been said that wars change what they do not destroy. That is certainly the case for the individuals who take part in wars. The combatants, and their huge support network, are always affected thereafter by their experiences. Some of the surviving combatants suffer the rest of their lives—and not just from lost limbs and battle scars. During WWI the debilitating psychological impact of combat was called shell shock. At a time when society was very paternalistic it was considered shameful to show the emotional effects of war—real men don't cry! Those who



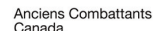
Norman Bethune 1922  
Library and Archives Canada/PA-160708

#### Norman Bethune, Bai Qiu-En

Born in Gravenhurst, ON, serving in WWI and the Spanish Civil War, and buried in China, Dr. Norman Bethune's legacy straddles three continents. Bethune continues to be revered in China decades after Chairman Mao made his essay "In Memory of Norman

Bethune" required reading for all school children. Mao stated, "We must all learn the spirit of absolute selflessness from him." The Chinese honour Dr. Bethune for his selfless service during the Sino-Japanese war; he conducted battlefield surgeries and transfusions—sometimes even using his own blood when no other blood was available. Exhausted from long hours of battlefield surgery, Bethune cut his finger and died of blood poisoning November 12, 1939.

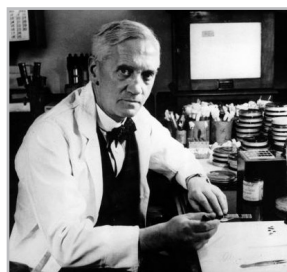
In 1952 his grave in China was moved to honour Dr. Bethune with an impressive tomb, statue and the nearby Norman Bethune International Peace Hospital.



suffered from shell shock were often considered weaklings. By WWII shell shock had been renamed Combat Stress Reaction; it was no longer treated as a sure sign of weakness. The Canadian Army called the syndrome—Battle Exhaustion and built in significant leave periods to try to prevent it. It wasn't until the 1980s, however, that the psychological symptoms caused by war—that had been documented since WWI—were recognized by Medical and Psychiatric Associations as Post-Traumatic Stress Disorder or PTSD. Canada's Dr. Hans Jung, the Canadian Forces Surgeon General, in a recent interview took pride that the CF's mental health program is the envy of the nations in NATO. Military acceptance of the need to treat PTSD and high profile cases such as that of Canada's Romeo Dallaire, who suffered greatly as a result of his experiences in Rwanda, have helped create an environment for acceptance for mental health issues. It has benefitted all. While the mental health issues caused by war moved slowly towards recognition and treatment, medical advances sped ahead. The Spanish Civil War of 1936–39 brought a Canadian doctor into the spotlight. Dr. Norman Bethune was part of the Mackenzie-Papineau Battalion of 1,300 leftist and communist Canadians who saw service in Spain's fight against the fascist forces led by General Francisco Franco. The Canadian Committee to Aid Spanish Democracy recruited Bethune to lead the Canadian medical unit within the Battalion. Dr. Bethune had already done work on blood transfusions in Canada and therefore immediately recognized the need for a mobile transfusion unit. He saw that patients who had survived battlefield wounds and surgery were dying of medical shock—due in large part to the loss of significant blood volume. Bethune had the first specialized blood transfusion vehicle equipped with a kerosene-run refrigerator, sterilizing unit and transfusion equipment on the road by December 23, 1937. Thereafter Bethune serviced a 1000 km front with five custom built trucks, 100 staff and 4,000 donors. The trucks collected, tested, stored and distributed blood for 100 transfusions a day. Bethune's model became the prototype for WWII blood transfusion services as well as for post-war civilian transfusion services.

In Spain Bethune is remembered for his pioneering work on mobile blood transfusion during the Spanish Civil War (1936-1939). The City of Malaga created the Walk of Canadians with a maple tree and an olive tree to signify their appreciation for Dr. Bethune's life-saving work there in 1937. Bethune's prototype transfusion service was used in WWII and Korea to save many lives.

In Canada, the Cold War placed Bethune's reputation in the cooler. Bethune had joined the Communist Party in 1935 and had even travelled to Russia as he was dismayed at the social inequities in Canada's health care system. That communist affiliation shaded his memory for decades. Fortunately, Dr. Bethune's place in Canadian history is finally recognized. The man who was an early advocate for universal health care, pioneered mobile blood transfusion, performed innovative surgeries and invented or redesigned 12 surgical instruments, including the Bethune Rib Sheers, has been named a Canadian Figure of National Historic Significance. His home in Gravenhurst and his bronze statue are part of a National Historic Site.



Dr. Alexander Fleming

Bethune was not alone in bringing about life-saving changes during war. Scotland's Dr. Alexander Fleming had discovered penicillin in 1928. It went into mass production during WWII due to its urgent need. Up until its introduction, wounded

soldiers frequently died of infection as the average wait for surgery in WWII was 14 hours. Bandages soaked in penicillin reduced gangrene and fatalities.

WWII troops also benefitted from influenza vaccines which did not become prevalent in public use until the 1950s. Additionally, of the 17,000 troops wounded at Dunkirk, not one died of tetanus. They had all been vaccinated!

As well as advances in medication and vaccination, WWII saw massive improvements in skin grafts and gas masks. Burn and gas fatalities were significantly reduced and the grafting techniques developed for burn victims came to be of great benefit later to the civilian population.



Commodore Hans Jung  
[www.navy.forces.gc.ca](http://www.navy.forces.gc.ca)

## Commodore Hans Jung, Surgeon General (retired)

"He is a true role model, not only for all immigrants but for all those who proudly serve our nation."

The Honorable Peter MacKay, Minister of National Defence

Born in Korea, Commodore Hans Jung, assumed the office of Canada's Surgeon

General in 2009. After an impressive three years in that position during a time that included Canadian medical involvement in Afghanistan and medical and humanitarian assistance in Haiti, Dr. Jung stepped down in July 2012. He had served for 31 years in the Canadian Forces and had attained the highest position available for a doctor in the country's military services. His legacy speaks to his sense of duty. He was the primary mover for the Physician Assistants Program that recently graduated its first class of "physician extenders". He was a driving force in the creation of the Canadian Institute for Military and Veterans Health Research, a network of university researchers focussed

on military and veterans' issues. As the keynote speaker at the 2010 forum that led to the document *Shaping the Future: Military and Veterans Health Research*, Jung stated, "By creating a national agenda that is open and transparent, I hope to break down the traditional boundaries that limited our ability to take a holistic approach to health research related to military service." Jung also established the Mental Health and Rehabilitation Program for Canadian Forces personnel who were ill and/or injured due to their involvement in Afghanistan. As Head of the Canadian Forces Dr. Jung oversaw 6,300 military and civilian health personnel; he also supervised the 200 CFHS personnel deployed on 13 missions across the globe.

The youngster who could speak no English when he came to Canada from war-torn Korea rose through extensive education and true dedication to assume all this responsibility and to instigate positive changes for the Canadian Forces in the field of technology and record-keeping—as well as all the other programs noted. Dr. Jung stated in an interview that he felt it was the duty of the military to protect and promote Canadian values. "And to my mind that's what all Canadians must be doing, particularly, for all immigrants that should resonate more so .... Because after all, it's the Canadian society that has allowed the recent immigrants in particular to come to Canada ..."

Retired Commodore Hans Jung, OMM, CD, OStJ, MD, MA



Dr. Wilbur Franks, centre, with two assistants, fitting a Franks Flying Suit. Franks is lacing the suit up to fit the individual wearer and thereby to obtain the maximum protection from [thecanadianencyclopedia.com](http://thecanadianencyclopedia.com)

During WWII the Canadian Dr. Wilbur Franks also developed the water-filled anti-gravity suit which was used to deter blackouts for pilots flying at high altitudes.

Whenever Frank tested his suit with a centrifugal unit in Toronto the

Eglinton streetcar line was

affected; it was on the same power grid. Frank's flying suit later became the prototype for space-suits.

Thus, as well as changing individuals forever, war also changed medicine. Nowhere was this more prevalent than in the development of artificial limbs. Many of the casualties of improvised explosive devices, or IEDs used in Sarajevo, Iraq and Afghanistan, who would formerly have

died of their wounds, were stabilized by better trained and equipped medics, triage and forward medical units—in which rapid blood transfusion played a great part. The men and women rescued by medical intervention required state of the art artificial limbs and as a result the military establishment sunk millions into their development.

The innovation in reconstructive surgery and development of cutting edge prostheses, pioneered by the military, have been of immense benefit to the civilian population as well. Olympian Oscar Pistorius of South Africa who was born without fibulae, qualified for the 400m at the 2012 Olympics. Called "Blade Runner", Pistorius sported the latest in prostheses.

Veterans and civilians are currently testing artificial limbs whose movements they control through their own thoughts. The command nerves that previously served a limb now severed are redirected to another part of the body and thus used to activate the artificial limb. It takes

training for the mind to connect its commands from the new nerve centre to the limb, but already test subjects have mastered controlling their new artificial limbs through their mind alone. The test subjects get the limbs to function with great similarity to the actions that their former limb performed. Most of the research for these "bionic" limbs came initially out of the military establishment.

Thus although war takes much away, it also gives something back in return.

### After the Reading

- How would you give a percentage to how much war takes away and how much it gives? Does it seem worth it?
- What did Canadians contribute to medicine as a result of war?
- List the most significant life-saving or life-enhancing medical breakthroughs from 1936-2012

### Extensions

- Research Oscar Pistorius and other people who have succeeded in life in spite of physical challenges
- List all the new topics for further discovery that were raised by this reading and follow up on one in detail
- Research the Canadian Forces "Be the Difference" Campaign and find your own way to make a meaningful difference

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