



Nobel Laureate series

Evgeny Chazov and Bernard Lown

In 1985, a group of physicians led by two eminent cardiologists bridged the Cold War divide and were awarded the Nobel Peace Prize for their stance against nuclear war. Mark Nicholls focusses on the achievement



Bernard Lown (L) and Evgeny Chazov (R) together at 1985 Nobel ceremony in Oslo.
credit: IPPNW/PSR

In the autumn of 1985, the world was still locked in the grip of the Cold War, a red-button-push away from nuclear Armageddon. The eastern bloc of the Soviet Union faced the West, with both sides pointing nuclear missiles at one another across the ideological divide, loaded with enough explosive to wipe out humanity many times over.

Against this backdrop, a group of physicians—collectively known as International Physicians for the Prevention of Nuclear War (IPPNW)—had taken a stance.

Significantly, it was led by two cardiologists: Bernard Lown from the USA, who was renowned as the developer of the direct current defibrillator for cardiac resuscitation and the cardioverter for correcting rapid disordered heart rhythms, and a prominent peace activist; and the man who arguably had his finger on the Kremlin heartbeat, Evgeny Chazov from the Soviet Union, who was cardiologist to Communist

Party general secretaries such as Khrushchev, Brezhnev, Chernenko, and even Gorbachev.

Formed in 1980, the IPPNW was awarded the Nobel Peace Prize 1985 by the Norwegian Nobel Committee for its work. An accompanying statement noted: 'It is the committee's opinion that this organization has performed a considerable service to mankind by spreading authoritative information and by creating an awareness of the catastrophic consequences of atomic warfare'. Praising the IPPNW for 'an awakening of public opinion', the committee attached particular importance to the fact that the organization was formed 'as a result of a joint initiative by Soviet and American physicians'.

The founders, Lown and Chazov, who were invited to receive the Peace Prize on behalf of their organization, had become acquainted in the 1960s and shared a mutual concern about the medical aspects of a nuclear war.



Despite sitting on opposing sides of the Cold War, they agreed to found an international organization for physicians that would seek to counteract the nuclear arms race. Holding annual congresses, the IPPNW recommended a nuclear test ban and demanded that the global superpowers should refrain from first use in conflict situations. By 1985, the organization had 135 000 members in 40 countries, including 28 000 in the USA and 60 000 in the Soviet Union.

In his acceptance speech for the Nobel Peace Prize in Oslo, Chazov said: I am convinced that today is a great and exciting day not only for the members of our international movement but also for all physicians on our planet, irrespective of their political and religious beliefs. 'For the first time in history, their selfless service for the cause of maintaining life on Earth is marked by the high Nobel Prize. True to the Hippocratic Oath, we cannot keep silent knowing what the final epidemic—nuclear war—can bring to humankind'. He acknowledged that the first 5 years for IPPNW were difficult, having to cope with 'mistrust, scepticism, indifference, and sometimes animosity'.

Meanwhile, in his acceptance address, Lown stated: 'Dr Chazov and I are filled with deep emotions of gratitude, of humility, and of pride as we accept this most prestigious prize on behalf of our movement. We are both cardiologists and usually speak about the heart. If we are to succeed in our goal of ridding military arsenals of instruments of genocide, we need the extraordinary energizing strength that comes when mind and heart are joined to serve humankind'.

Now aged 90, Chazov was born on 19 June 1929 in Nizhny Novgorod. As a prominent physician, specializing in cardiology, he rose to serve as USSR Minister of Health, Academician of the Russian Academy of Sciences and the Russian Academy of Medical Sciences, and has received numerous honours including the Gold Medal of the European Society of Cardiology in 2013. He became director of the

Moscow Cardiological Center in 1976 where his professional interests concentrated on basic research and the clinical aspects of atherosclerosis and acute myocardial infarction (MI). His major contribution to cardiology has been in the development of thrombolytic therapy for MI, particularly when applied in a pre-hospital setting.

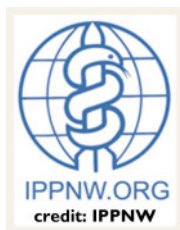
Lown, now 98, was born to a Jewish family in Lithuania on 7 June 1921. The son of a rabbi, he emigrated to the USA when he was 14. Throughout his medical career, a key focus was on the major medical challenges of sudden cardiac death and the role of psychological stress on the cardiovascular system. Best known as the developer of the current defibrillator, he also introduced a new use for the drug lidocaine to control heartbeat disturbances.

Graduating from the University of Maine, he received an M.D. from Johns Hopkins University School of Medicine in 1945, and is currently Professor of Cardiology Emeritus at the Harvard T.H. Chan School of Public Health; Senior Physician Emeritus at the Brigham and Women's Hospital in Boston; and founder of the Lown Cardiovascular Center, the Lown Cardiovascular Research Foundation and of the Lown Institute.

He has a long record of peace activism having formed Physicians for Social Responsibility (PSR) in 1961 to address the threat of nuclear war and being involved in organizing COR (Committee of Responsibility to Save War Burned and War Injured Children), which worked to bring child victims of the Vietnam War to the USA for treatment. Later forming IPPNW, the bridge that connects the cities of Lewiston and Auburn in Maine was renamed The Bernard Lown Peace Bridge in 2008.

Between them, Lown and Chazov not only helped drive an organization of physicians that helped curb the threat of nuclear war—they also made significant contributions to the advance of cardiovascular medicine.

IPPNW legacy—Ira Helfand



IPPNW is a federation of national groups dedicated to mobilizing the influence of the medical profession against the threat of nuclear weapons. The initial impetus came via the long-standing professional association between Lown of the Harvard School of Public Health and Chazov of Moscow Cardiological Center.



credit: IPPNW/PSR

IPPNW co-president Dr Ira Helfand takes up the story: 'With the Cold War raging in the late 1970s, Dr Lown and several other American physicians, including James Muller and Herbert Abrams, both at Harvard Medical School, began discussing ideas to foster medical cooperation between physicians of the two superpowers. In 1979 and early in 1980, Dr Lown wrote Dr Chazov with their proposal to create a Soviet-American physicians' movement to prevent nuclear war. The proposal reasoned that physicians from East and West—sharing traditions, languages, and practices that transcend national boundaries—could spearhead a worldwide movement away from nuclear disaster'.

The exchange of letters between Lown and Chazov led to an initial meeting of three American physicians (Lown, Muller, and Chivian) and three Soviets (Chazov, Leonid Ilyin, and Mikhail Kuzin) in Geneva in December 1980 to lay the foundations of IPPNW (www.ippnw.org).

Dr Helfand said: 'Today, the IPPNW continues to work on a broad range of issues as we pursue our mission to create a more peaceful and secure world freed from the threat of nuclear annihilation. IPPNW's core mission and focus remains the abolition of nuclear weapons as a medical and humanitarian imperative'. He believes IPPNW's efforts contributed greatly to reducing the risk of a nuclear war between the USA and USSR, helping to end the Cold War and pointed out that Mikhail Gorbachev publicly credited IPPNW with shaping his thinking, and Soviet policy, on nuclear weapons.

In 2007, IPPNW launched ICAN—the International Campaign to Abolish Nuclear Weapons—which received the Nobel Peace Prize in 2017, after campaigning successfully for the Treaty on the Prohibition of Nuclear Weapons (TPNW), adopted at the United Nations in July of that year.

Today, IPPNW is a federation of 62 independent national medical associations, comprising thousands of doctors, medical students, health-care professionals, and concerned citizens.

The humanitarian legacy of IPPNW and the cardiological contribution of its founders—Dr Eugene Braunwald



Dr Eugene Braunwald described Evgeny Chazov as 'the leading clinical cardiologist of his era'. 'By injecting a fibrinolytic agent directly into the occluded vessel, he became the first to successfully restore blood flow through an obstructed coronary artery in patients experiencing an acute myocardial infarction. His ingenious work changed forever the management of this very important condition', he said.

Meanwhile, he highlighted how Bernard Lown's development of the direct current defibrillator 'has successfully prevented thousands of sudden cardiac deaths secondary to otherwise fatal arrhythmias and allowed closed chest cardioversion for a variety of arrhythmias, including atrial fibrillation'.

Another of those involved in the IPPNW from the outset, Dr James Muller, a cardiologist at the Brigham and Women's Hospital and Harvard Medical School, described circadian variation in the frequency of onset of acute myocardial infarction.

'This led Muller ultimately to develop the concept of the 'vulnerable plaque' that requires detection and treatment before its rupture would cause a massive myocardial infarction,' said Dr Braunwald.

Lown, Chazov, and Muller—who served as the first secretary of the IPPNW—were at the forefront of an organization that had a 'profound effect during the Cold War', he said.

Lown legacy—Professor Amitava Banerjee



Professor Amitava Banerjee, who is Associate Professor in Clinical Data Science and Honorary Consultant Cardiologist at University College London and Barts Health NHS Trust, was greatly influenced by Professor Lown in his own research interests, which include cardiovascular prevention, global burden of cardiovascular disease (CVD; particularly in the Indian subcontinent), and health informatics. ‘Bernard Lown’, he said, ‘could equally have earned the Nobel Prize in Medicine as the developer of defibrillation and cardioversion, or his advances in early antiarrhythmic therapy and preventive cardiology. The fact that, as a leading clinician scientist, he was awarded the Nobel Peace Prize for his personal and collaborative efforts to avert nuclear war are nothing short of inspirational and totally unique in the history of the award’.

Professor Banerjee, who currently chairs the World Heart Federation Emerging Leaders programme, said Lown was an early advocate of CVD as a global health issue, which is, to this day, often championed by public health and global health communities, rather than practising cardiologists.

‘He showed that public health and global health are very much within the gift and the responsibilities of cardiologists and “walked the walk” throughout his exceptional career’, he continued. ‘Whether through his clinical work in prevention at the Lown Medical Centre, or mentorship at the Harvard School of Public Health, he has shaped the thinking of generations of cardiologists’.

Chazov legacy—Professor Evgeny Schlyakhto



Professor Evgeny Schlyakhto, Director General of the Almazov National Medical Research Centre in Saint-Petersburg and President of the Russian Society of Cardiology, said that Dr Chazov—as a prominent physician, scientist, and organizer of public health—made a significant contribution to cardiovascular medicine. ‘He developed and put into practice a myocardial infarction treatment system, which included pre-hospital care, intensive monitoring, and new treatment plans, and with his students, he introduced prevention and rehabilitation for patients with cardiovascular diseases, which was of great practical importance. He was also widely known for his pioneering work on thrombolytic therapy’. Professor Schlyakhto also said that Chazov played a key role in the development of the Russian healthcare system including new forms of management and a cardiac care system.

As for the significance of the IPPNW, he said it sparked a broad public movement against the nuclear arms race and contributed, according to political leaders, to the signing of an agreement on the limitation of nuclear weapons. ‘The IPPNW key point was to inform the world community, using scientific research, about the possible direct medical consequences of a nuclear disaster and more long-term effects, in particular the significance of changes in the biosphere for the future of mankind’, added Professor Schlyakhto.

Chazov legacy—Dr Frans Van de Werf

While playing a pivotal role in IPPNW, Evgeny Chazov also made significant contributions to advance cardiovascular medicine.



credit: Sam C. Rogers

Dr Frans Van de Werf, from the Department of Cardiovascular Sciences at the University of Leuven in Belgium outlined how Dr Chazov was the first to give STEMI patients an intracoronary infusion of the first fibrinolytic agent (streptokinase). ‘This happened in the early 1970s before the concept of an occlusive thrombus as the direct cause of a STEMI was generally accepted’, he said.

Chazov published the results in a number of Russian journals but there was limited awareness in the West of his findings. Several years later, Rentrop and co-workers from Göttingen published a series of 29 STEMI patients treated with intracoronary streptokinase in *Circulation* (1981;63:307–17) to be followed by the landmark GISSI-1 study of intravenous streptokinase in thousands of patients (*Lancet*, 1986).

‘Since fibrinolytic therapy paved the way for primary PCI and is still frequently used around the world one could say that Chazov is the father of reperfusion therapy for STEMI’, concluded Dr Van de Werf, whose key area of research for many years has focused on acute coronary syndromes, thrombolysis, and antithrombotic treatment.

Conflict of interest: none declared.



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