EDITORIAL

Critical Condition: What Are We Doing About Nuclear War?

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Editorials on nuclear risk and health appeared in over 150 leading health journals in 2023 and 2025[1,2]. Why, then, are we publishing this new series of editorials on the subject?

Tensions affecting the planet have become extreme. Nuclear sabre-rattling has been heard in Russia and Ukraine, India and Pakistan, Iran, Israel and the United States, and intensified over much of the globe. Nuclear arsenals carrying the instruments of death have been modernized, upgraded and expanded. In 2025, the nuclear armed states – China, France, India, Israel, North Korea, Pakistan, Russia, the United Kingdom and the United States – spent just under $119 billion, or $3,768 per second, on their nuclear arsenals, an increase of 19% from the previous year[3]. The Doomsday Clock is inexorably approaching midnight[4].

Nuclear armed states collectively hold more than 12,000 nuclear warheads[5]. Given the number of cities on the planet, it may seem that the world could survive a full-scale nuclear war. But this is not the case. Urban sprawl links everyone: about 2.8 billion people (30% of the world's population) live in 33 megacities[6]. In fact, it would take very few bombs to kill billions directly, and then bring about abrupt global cooling in a nuclear winter that would kill billions more from ensuing famine[7].

Today's climate models show that even a "small" nuclear war would have far more catastrophic effects on world climate and food supplies than previously thought[7]. These models have begun to look at what would happen to our ozone and what the effects of increased ultraviolet radiation would be on crops[8], but as yet do not account for disruption of agricultural labour, food transport, storage and distribution, disruption of agricultural inputs including fuel, machinery, parts, seed, fertiliser or pesticides, contamination of croplands, or wider political and economic unrest. Modern civilization could not survive even a small nuclear war, while using just 2-3% of the weapons we currently possess could cause billions to die, mostly from starvation.

The imperative to pull back from the brink has pushed the multilateral system into action. In late 2024, the United Nations (UN) General Assembly, declaring itself "alarmed at the renewed prospect of nuclear war, and gravely concerned by the catastrophic humanitarian and environmental consequences that would result," voted to initiate a comprehensive review of current knowledge about the consequences of nuclear war[9]. The UN Secretary General appointed a 21-member independent scientific panel to prepare a report, which is due in 2027.

In 2025, thanks to global pressure (including our last editorial[2]), the World Health Assembly voted to update obsolete World Health Organization (WHO) studies on the public health effects of nuclear war[10]. A new WHO report is due in 2029. In March 2026, WHO staff were reported as being "vigilant in the event of a nuclear incident" in relation to the war on Iran[11].

Together, the forthcoming reports of the UN and WHO represent the first major international reassessments of the effects of nuclear war by these bodies in nearly 40 years.

Meanwhile, work on top-level international nuclear treaties has intensified. In 2017, an overwhelming majority of the world's nations adopted a global agreement to ban nuclear

weapons, known officially as the Treaty on the Prohibition of Nuclear Weapons (TPNW)[12]. The Treaty entered into force in January 2021 and, to date, 75 countries have become "states parties" legally bound to it, and a further 25 have signed it[13]. However, as we approach the first TPNW review conference, to be held in New York at the end of the year, none of the nine nuclear weapons-armed states has signed or ratified the Treaty, although pressure for them to do so is growing.

The principal focus of those in favour of nuclear weapons is that they prevent nuclear war through nuclear deterrence: nuclear weapons are presumed to provide "strategic stability" among the states that possess them, since nobody wants to escalate quarrels into a nuclear war. However, deterrence creates a form of security, or merely a feeling of security, that remains fragile, asymmetric, dependent on the permanent threat of catastrophe, and blind to the needs of non-nuclear states.

Insights from psychology and neuroscience suggest that decisions about nuclear weapons are not 'rational', as deterrence implies, but are likely to be shaped by mental shortcuts, statistical reasoning errors and slight changes in decision contexts[14,15]. All of these may lower the threshold regarding the use of nuclear weapons and lead to an irrational reluctance to abandon vast nuclear arsenals that are more than sufficient to end human civilisation. Humanity's survival is thus in the hands of few fallible decision-makers. A future editorial will address evidence from neuroscience and cognitive and social psychology.

Apart from geopolitical developments, the world is witnessing the growing impact of technology on war – artificial intelligence used in profiling and targeting, drones and other delivery technology[16,17] – accompanied by the rise of "infodemics" of mis- and disinformation[18,19], which raise the likelihood of nuclear accidents and have their own impact on health. We will be considering these information disorders in another future editorial.

Health professionals have a vital role to play in keeping a health focus in public discussions on nuclear risk. We need a verifiable, deadline-driven agreement to eliminate all nuclear weapons. This is why it is essential that the health sector continues to demand that every country – including the nuclear armed states – should join the Treaty on the Prohibition of Nuclear Weapons. The flourishing, and even the survival, of the human species is at stake.

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