ISSN 2256-0580

World Medical Journal

Official Journal of The World Medical Association, Inc. Nr. 3, October 2016 vol. 62

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Official Journal of The World Medical Association

Editor in Chief
Dr. Pēteris Apinis, Latvian Medical Association, Skolas iela 3, Riga, Latvia
Phone +371 67 220 661
peteris@arstubiedriba.lv, editorin-chief@wma.net

Co-Editor
Prof. Dr. med. Elmar Doppelfeld, Deutscher Ärzte-Verlag, Dieselstr. 2, D-50859 Köln, Germany

Assistant Editor
Maira Sudraba, Velta Pozņaka; lma@arstubiedriba.lv

Journal design and cover design by
Pēteris Gricenko

Layout and Artwork
The Latvian Medical Publisher, "Medicīnas apgāds", President Dr. Maija Šetlere, Skolas street 3, Riga, Latvia

Publisher
The Latvian Medical Association, "Latvijas Ārstu biedrība",
Skolas street 3, Riga, Latvia.

ISSN: 2256-0580

Currently the Earth is a Planet of Plastics

Plastic is known to mankind for more than 100 years, and it has become part of our lives. It is hard to picture how many times per day each of us has something to do with plastics. Plastics are produced in the form of resin from oil, natural gas and coal, while there are also plastics of biological origin. Elements can be arranged around carbon in a number of ways to obtain the necessary properties for the plastic.

Globally, right now the four main health concerns for mankind are:
1. global heating and pollution of the planet;
2. agents impeding the development of hormonal system, the planet as a "chemical warfare";
3. shortage of potable water;
4. social determinacy problems and inaccessibility to health care services

As to plastics, global doctors focus on two aspects – the world is being polluted with plastics to such an extent that the global ocean will soon be kind of plastic soup, as well as bisphenols, phthalates, brominated flame retardants that are serious disruptors of hormonal system.

Plastics contain BPA or bisphenol, and most of plastics release it when heated. Bisphenols make plastics harder and more endurable. Bisphenol A is an agent impeding the functioning of glands of internal secretion; technically it is artificial oestrogen (the female hormone) which can get from a plastic bottle (including baby bottles) or a vessel into food or water. As artificial oestrogen, it affects the development of foetus of both sexes, hampers the development of hormonal system and contributes to the development of breast and prostate tumours.

It is the production of testosterone and sperm quality for males, increases the insulin resistance and promotes obesity.

Phthalates are chemical substances that are added to plastics to make it flexible, as well as for other organoleptic reasons. Phthalates cause damage to reproduction organs of foetus, damages DNS in sperm, damages liver, kidneys and lungs, causes inborn defects, anaemia, infertility and cancer. They have a serious impact on male potency and inhibit spermatogenesis in boys.

Apart from bisphenols and phthalates, also brominated flame retardants and other constituents of plastics and heavy metals cause disturbances to internal secretion system.

Plastics break down very slowly: the decomposition process takes about a thousand years. This means that all plastics that have ever been manufactured are still here on the Earth (even recycled) unless burnt down and polluted the atmosphere with poisonous smoke, thereby destroying the ozone layer, which is our sole shield against the solar and cosmic radiation.

Plastics can be recycled 10-15 times. Umbrellas, backpacks, carpets, blazers, artificial cobble stones, covers for mobile phones and new PET bottles are made of recycled PET bottles. However, currently it is about 12% of plastics that get recycled, while the rest is buried in landfills, and the major part, especially plastic bags, end up in environment, because part of people still are not aware that a forest, a meadow or a desert, mountains or roadside is not a dumpsite. Large part of plastics gets into waters and further on to seas and oceans. Most of this polluting plastic is various types of film, packets and boxes.

The main pollutants of environment are 15–50 micron thick plastic bags, usually available free of charge in shops. They constitute higher environmental risk than thicker bags, because are no used repeatedly – in 89% of occasions they are discarded after one-time use. These bags quickly disintegrate in small pieces and are blown by the wind till end up in water bodies. The 15–50 micron plastic bags have been found in the stomachs of all water birds.

According to different estimates, 500–700 billion of plastic bags are used annually worldwide. No less than one third ends up in environment or ocean. The sources of ocean waste are rivers, contributing 80%, and vessels, contributing the remaining 20%. The UN Environmental Programme has estimated each square mile of ocean water to contain 46,000 floating items of waste, mainly of plastic origin. At this moment, the ocean is kind of plastic soup consisting of plastic objects of various sizes and their remains, and forming a layer of waste with different density from the surface of the ocean down to the very bottom.

Plastic piles up mainly in ocean gyres, which is water vortex limited by currents, formed under no wind and high atmospheric pressure. Vortex keeps the plastic soup in continuous motion. The largest gyre, North Pacific Gyre, between 1350–1550 west longitude and 250–450 north latitude, is a 1760.000 square kilometres large field of plastic waste, which is equal to the aggregate area of three Iberian peninsulas (Spain and Portugal).

Plastics also pollute beaches and discourage tourists. Sea wildlife, like animals, birds and crustaceans, is trapped in plastic waste and gets constricted, drowned, immobilised, and dies.

In the sea, plastic is not biodegradable; however, being exposed to the sun and mechanical forces, it gets decomposed to minute particles.

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In 2010, the proportion of the minute plastic particles to zooplankton was as high as 60:1. This means that 5% of a blue whale's body weight is plastic which he has consumed instead of plankton.

There is nothing more dangerous for the Earth than burning plastics in low temperature. The end products of burning plastics are incredibly poisonous to human beings, plants and animals. The gases released in burning destroy the ozone layer (plastics can be burnt only in furnaces in extremely high temperatures, notably over 1000 degrees, where the plastic combustion products are carbon dioxide, sulphur dioxide and some other relatively simple compounds).

Relatively more girls die in childhood compared to boys. The reason is that in not so well-to-do countries boys play football, while girls are supposed to be indoors and help their mothers with cooking. In many countries trees have already been cut down and cooking is done by burning trash, namely, plastics. Such smoke in the room is the cause of unbelievably high mortality of children (girls).

The World Medical Association should become the initiator of introducing a global environmental tax on plastic, imposing a tax on all plastic bags. We trust that the World Medical Association is able to lead this initiative and promote it to the UN and other global organisations for discussion. It is critical that it is the manufacturer which is to be taxed, because traders will be compelled to pay this tax in the price as value added tax.

Pēteris Apinis, President,
Latvian Medical Association

Interview with Sir Michael Marmot, President of the World Medical Association

By Dr. Peteris Apinis. August, 2016

Sir Michael Marmot

1. First of all, I would like to ask you about Turkey. We know that televisions are being closed, judges and teachers are being removed from their positions, is this affecting physicians, too? Is Turkey becoming an authoritarian regime where doctors are also the aim of politicians?
M. M. Turkey. I will answer this question about Turkey's current situation the way I try to answer all questions concerned with the public's health: an appeal to evidence and to notions of social justice. Overall, evidence suggests that well-functioning democracies are good for health. There may be one or two exceptions. But, certainly, the history of Europe, post war, shows remarkable divergence between the good health of Western democracies, and the relatively poor health of communist countries of Central and Eastern Europe. There are ample reasons for the health-promoting effects of democracies: greater attention to human rights; greater possibility for enlightened debate; a free press, which includes the freedom to be critical of the powers that be. My own view is that satire, and other brands of humour, are vital to the functioning of democracy (perhaps that is a British point of view). The trend in Turkey has been toward erosion of democracy, with a dramatic turn downwards after the aborted coup. A military coup is always to be condemned. But one might have hoped that Turkey's president would have emerged as an even more vigorous champion for democracy. Regrettably, the opposite has occurred. Turkey's doctors have stood up and defended the ethical principle of providing health care to all members of the population, regardless of ethnic or political persuasion. This ethical principle, too, is under threat.

2. Unfortunately this is not new in our world. Can you remember any other country going through a situation like this and how that affects the public health (e.g. Venezuela) ?
M. M. Is this unique to Turkey? As described above, the later stage of communism in Europe appeared to be bad for health. This can be illustrated simply by comparing Austria, and Czechoslovakia – both important parts of the previous Austro-Hungarian Empire. Post war, health (as measured by life expectancy) was approximately equal in the two countries, and improved in parallel up until the 1970s. It is consistent with the view that, on both sides of the Iron Curtain, material conditions for health improved. There were reductions in poverty, and improvements in school, jobs and transport. But, from the 1970s on, life expectancy continued to improve in Austria, as it did in all countries in Western Europe. Life expectancy stagnated in Czechoslovakia, as it did in all countries of Central and Eastern Europe. People do need the basic material conditions in order to enjoy good health. But they also need the freedom to lead

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flourishing lives. Such freedoms were more likely to be delivered by healthy, functioning democracies.

3. Turkey is hosting a huge number of refugees from Syria, Iraq and Afghanistan. What do you think how this new situation may affect them?
M. M. What will happen to refugees in Turkey? Central to the functioning of a healthy society is high quality data, and free and open discussion of the implications of what the data show. There are two million official Syrian migrants in Turkey, and probably many more unofficial, in addition to migrants from Iraq and Afghanistan. With an authoritarian regime restricting the free flow of information, and taking arbitrary action against any individual it sees as threats, this is a precarious situation: it is quite conceivable that refugees could be seen as threats. The result could be calamitous.

4. How do these social determinants and migration correlate with public health in Europe? How can we help to improve the situation?
M. M. Migrants in general, and refugees in particular, illustrate the importance of taking action on the social determinants of health. Conditions from which people fled, the circumstances of migration, and conditions in the new country can all influence health. One obvious way this works is that refugees are poorer than the host population, and suffer ill health as a result. More generally, the conditions in which people are born, grow, live, work, and age, and inequities in power, money and resources – the social determinants of health – will all impact on the health of refugees.

5. Terrorist attacks are affecting many countries in the world. Fear is installing in people›s minds and can lead to psychological problems. Do you think this might become a social determinant of «mental» health? Explain your considerations about this.
M. M. There is a huge disparity between rates of crime, and fear of crime. In many, if not most, advanced countries, crime rates have been falling, but the public's fear of crime isn't. Each terrorist attack is appalling, and, rightly, fuels public anxiety about terrorism. But, overall, the number of deaths from terrorist attacks is small. Take the U.S. as an example. There are approximately 34,000 deaths a year caused by firearms. A tiny minority of these can be linked to terrorism. You would not guess that from some of the public rhetoric of politicians, which fuels public anxiety. That being said, we should not be complacent about terrorism. We need to add the medical voice to the argument for improving the social determinants of health, for all members of our populations, and reducing racism and intolerance.

Migration of Doctors and Working Time Arrangements from an International Perspective

The main aim of the first international conference of doctors' unions was to build a network between doctors' unions around the world and to discuss common problems and challenges. In his opening speech the Chairman of the Marburger Bund, Rudolf Henke, pointed out that such an exchange of experience and information will not only help to improve working conditions for doctors but contribute, in the end, towards better care for patients. Lutz Stroppe, a high ranking civil servant who reports to the German Minister of Health, emphasised the important role that foreign doctors play in maintaining high quality medical care in Germany. At the same time he considered the possible negative effects the emigration of doctors might have on the source countries. With his welcoming speech he reached representatives of 24 different nations from five continents.

Participants from 11 countries made use of the opportunity to give on the first day a snapshot presentation on the topic of emigration from and/or immigration of doctors to their countries. As the situation in the different countries is diverse the speakers were free to focus on those issues that are of special interest to their union. The representative from the Sindicato Médico do Rio Grande do Sul, for example, reported on the exploitation of Cuban doctors who take part in a government programme and work in underserved rural areas in Brazil. Presentations given by the Austrian Medical Chamber, Swedish Medical Association and Hong Kong Doctors' Union explained the system

Ruth Wichmann

of recognition of foreign diploma and the integration process of foreign doctors. In order to facilitate the free movement of doctors the representative of Sindicato Médico del Uruguay drew upon practical experiences to advocate better co-operation between countries

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and a facilitation of the recognition process of foreign diplomas.

Major push factors which make doctors leave their country such as poor working conditions, bad training opportunities, unemployment or political circumstances where pointed out by the Tanzania Medical, Dental and Pharmaceutical Workers' Union, Portuguese National Federation of Doctors, Bahamas Doctors' Union, Myanmar Medical Association Young Doctor Society and Slovak Doctors' Trade Union. Workforce shortages in New Zealand as well as low retention rates of foreign trained doctors were elaborated on by the New Zealand Association of Salaried Medical Specialists.

After the presentations, Armin Ehl, Chief Executive Officer of the Marburger Bund, opened the floor for a fruitful discussion which resulted in the adoption of a resolution. The participants supported the implementation of the 2010 WHO Code of Practice on the International Recruitment of Health Personnel. It was particularly stressed in the statement that all countries should strive to train enough doctors to meet their own internal needs. Furthermore, the participants agreed that doctors' unions should ensure that migrant doctors enjoy the same working conditions as domestically trained doctors and do not suffer any discrimination. All doctors' unions present agreed to disseminate relevant information to foreign doctors and to co-operate with one another in order to support migrant doctors.

The main topic of the second day of the conference was the working time of doctors. As all EU member states have to adhere to the European Working Time Directive (EWTD) the key elements of this Directive were explained by Richard Pond, Policy Officer of the European Federation of Public Service Unions (EPSU). Pond also described the continuous fight of EPSU to safeguard the health and safety provisions of this directive.

Examples of the transposition of the EWTD into national law were given by the German Marburger Bund, Slovak Doctors' Trade Union, Portuguese National Federation of Doctors and Austrian Medical Chamber. All four presentations focused on the average maximum weekly working time and the assessment of on-call periods as working time in theory and in practice. Whereas the Austrian Medical Chamber explained that the use of the opt-out clause will be gradually phased out so that from July 2021 onwards, the average maximum weekly working time in Austria will be 48 hours, appalling working time arrangements of up to 120 hours per week were reported by the Jamaica Medical Doctors' Association. Doctors in Jamaica severely compromised not only their own physical and mental health but, as a result, are not being able to give appropriate care to their patients.

Long working hours are also a problem in Hong Kong. The presentation from the Hong Kong Doctors' Union showed that while the average weekly working time of people in Hong Kong is 50 hours many doctors work more than 65 hours a week. A recent survey conducted by the Hong Kong Doctors' Union revealed that over 92% of the participants longed for a significant reduction in their working time. The Union of Employees in the Health and Social Protection of Serbia also complained that due to a shortage of doctors, long working hours of doctors are a reality. However, so far Serbian doctors are not willing to take action. Other interesting snapshot presentations were given by the Sindicato Médico del Uruguay, Bahamas Doctors' Union, Myanmar Medical Association Young Doctor Society and New Zealand Association of Salaried Medical Specialists before the audiences engaged in a lively discussion.

Again a resolution was adopted in which the participants demanded that patient safety and the health and safety of doctors should be the guiding principles of any working time regulations that cover doctors. The participating doctors' unions called upon the responsible authorities to enforce existing working time laws and expressed their will to fight against any attempts to reduce the health and safety provisions in existing working time regulations. Moreover, the union leaders wanted to reduce long working hours in accordance with their members' needs and preferences.

The Marburger Bund who organised the meeting in mid-June in Berlin was delighted that the Sindicato Médico del Uruguay expressed an interest in holding a follow-up conference in Uruguay next year. Also the Bahamas Doctors' Union is considering hosting a future meeting of doctors' unions. It is likely that the international co-operation between doctors' unions will thrive.

Ruth Wichmann, Head of International Office of the Marburger Bund
E-mail: wichmann@marburger-bund.de

Women in Migration: Beyond Statistics

Migration is a move somewhat reliant on will. But the majority of the migrants are forced to leave their loved ones, their country, and their past. Suddenly their lives change completely and they are forced to migrate and seek refuge in a foreign country. Data on the magnitude of the problem varies according to the source. Migration is intertwined with human tragedy. This short article will try to explain the human dimension of migration, with an emphasis on women.

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Feride Aksu Tanık

Hundreds of determinants such as country of origin, the international status of the country, the prestige of the country, whether they have legal documents, how they arrived in the country, whether they are exiled, the reasons of migration, religion, gender, age, profession, etc. contribute to determining not only the legal status but also the social prestige of the refugees [1]. The conditions in which migrants travel, live and work can carry exceptional risks for their physical and mental well-being. These include inequality in access to healthcare and services; vulnerabilities associated with migrant status, marginalization and abuse, and are often linked to restrictive immigration and employment policies, economic and social factors, and dominant anti-migrant sentiments in societies. These are often referred to as the social determinants for migrants' health [2].

Shelter, hygiene and nutrition are the most problematic areas. There are serious problems in access to food, both in terms of quantity and quality, the number of the meals provided are very few and irregular, and food hygiene is poor. Basic personal hygiene is also very poor due to poor living conditions.

Women are among the most vulnerable. As was highlighted by the United Nations Committee on the Elimination of Discrimination against Women (CEDAW), migrant women face specific challenges in the field of health throughout the migration cycle. Migrant women, for example, may be subject to sex and gender based discrimination such as mandatory HIV/AIDS, or other testing, without their consent as well as sexual and physical abuse by agents and escorts during transit [3]. Refugee women have lower status than men [4] and need more protection; especially victims of sexual violence, isolated, single parent women, lesbians and women in custody (The UN Refugee Agency (UNHCR)).

There are many variables affecting refugees' health that are not easily controlled. They include: stress caused by migration, damage of refugees' social networks, religious and cultural factors, culturally insensitive reproductive health services, discrimination in health services provision and also a lack of information about the services available. There are striking differences between the health status of refugees and the settled population, and their access to health care. Refugees are one of the most neglected groups of the world. They are usually excluded from health and social services.

Reproductive health is particularly important. There is an increase in fertility during migration. There are factors that make the situation more complicated such as: early marriages, multiple marriages etc. In general family planning needs are unmet.

In war and migration situations, exploitation of women and sexual abuse increases. Gender based violence is very common for refugees. During conflict, before escape the ruling parties abuse women. There are reports of sexual violence and torture inflicted by soldiers, gang rape and abduction by the conflicting parties. During the escape, bandits, border guards and human traffickers assault women. In the country of asylum, during the return journey and even in the reintegration phase, many similar incidents have been reported [5]. Women point out that human traffickers abuse women, there is systematic abuse and violence against women both in custody and at control points [6]. In other words, women's bodies are used as battlefields by conflicting parties and captured by the dominant powers. Women continue to carry all the burden of the conflicts, war and migration.

Physicians and health care workers should be aware of and sensitive to needs of refugee women and advocate their right to health and the right to access to health care. Refugees with and emphasis on refugee women should have the right to live in dignity and respect. The ultimate solution is the construction and protection of peace. Health care workers can have a crucial impact in building a less violent world and ensuring the protection of peace.

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Prof. Dr. Feride Aksu Tanık
Faculty of Medicine,
Department of Public Health
Ege University
E-mail: ferideaksu59@gmail.com

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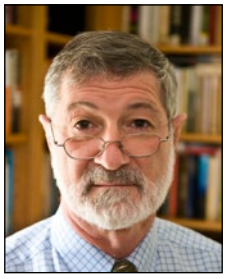
The Growing Threat of Nuclear War and the Role of the Health Community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Andy Haines


Tilman Ruff


Hans Kristensen


Patricia Lewis


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The Growing Risk of Nuclear War

After the end of the Cold War the intense military rivalry between the Soviet Union and the United States/NATO was replaced by a much more cooperative relationship, and fears of war between the nuclear superpowers faded. As recently as the 2014 US Quadrennial Defence Review, conflict between the two former adversaries was not considered a realistic possibility [1].

Unfortunately, relations between Russia and the US/NATO have deteriorated dramatically since then. In the Syrian and Ukrainian wars, the two have supported opposing sides, raising the possibility of open military conflict and fears that such conflict could escalate to nuclear war.

Over the past two years, both sides have engaged in nuclear sabre rattling that is reminiscent of the worst periods of the Cold War. Speaking about the conflict in Ukraine in August 2014, Russian President Vladimir Putin warned "it is better not to come against Russia as regards a possible armed conflict … I want to remind you that Russia is one of the most powerful nuclear nations" [2]. In the months following the Russian annexation of Crimea, the European Leadership Network (ELN) documented a large increase in incidents involving close encounters between nuclear capable NATO and Russian military forces. A report issued by the ELN concluded, "These events add up to a highly disturbing picture of violations of national airspace, emergency scrambles, narrowly avoided mid-air collisions, close encounters at sea, simulated attack runs and other dangerous actions happening on a regular basis over a very wide geographical area" [3]. Further, both sides have conducted large scale military exercises in Europe, leading the ELN to conclude, "Russia is preparing for a conflict with NATO, and NATO is preparing for a possible confrontation with Russia" [4]. The danger inherent in this situation is magnified by the current Russian military doctrine of "nuclear de-escalation". Rather than seeing nuclear weapons purely as a deterrent to nuclear attack, this doctrine embraces "the idea that, if Russia were faced with a large-scale conventional attack that exceeded its capacity for defence, it might respond with a limited nuclear strike" in order to force the other side to quickly end the conflict and return to the *status quo ante*" [5]. US/NATO military planning has always envisioned possible first use of nuclear weapons in the face of a Soviet/Russian conventional attack in Europe.

In this setting prominent leaders on both sides have expressed alarm about the growing danger of nuclear war.

Speaking in January, when the Bulletin of the Atomic Scientists announced that its Doomsday Clock would remain at three minutes to midnight, former US Secretary of Defence William Perry stated, "The danger of a nuclear catastrophe today, in my judgment is greater that it was during the Cold War … and yet our policies simply do not reflect those dangers" [6]. His assessment was echoed two months later by Igor Ivanov, Russian Foreign Minister from 1998 to 2004. Speaking in Brussels on March 18, Ivanov warned that, "The risk of confrontation with the use of nuclear weapons in Europe is higher than in the 1980's" [7]. The increased tensions between the US and Russia have been matched by a similar escalation in the danger of nuclear war in South Asia.

Since the nuclear weapon tests of May 1998 by India and then Pakistan, the two states have expanded many-fold their respective nuclear weapon and fissile material stockpiles, and undertaken extensive development and testing of a diverse array of ballistic and cruise missiles (with ranges from 60 to 5000 km) to acquire the ability to deploy and launch nuclear weapons from the air,

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from land, and from submarines at sea. They have put in place command and control systems and doctrines that involve, in the case of Pakistan, first use of nuclear weapons in a conflict and, in the case of India, massive retaliatory strikes against population centres [8–10].

In May-July 1999, the two countries fought a war which apparently included mobilization of nuclear weapons by Pakistan, making it the most significant military conflict between two nuclear armed states [11]. They also went through a major military crisis (December 2001 to June 2002) triggered by an attack on India's parliament by Islamist militants believed in India to be backed by Pakistan, which included the two countries moving a combined total of over half a million troops to their border [12]. The slow pace of Indian deployment and inconclusive outcome of the stand-off led India's army to begin planning and training for a more decisive and rapid conventional attack on Pakistan [13]. Pakistan began testing a short-range truck-mounted mobile missile to deliver low-yield nuclear weapons on the battlefield [14]. This latter development has increased long-standing international concerns about the security of nuclear weapons and fissile materials in Pakistan given the large-scale and frequent Islamist militant attacks on military targets in the country and the ideological polarization within the armed forces and broader society associated with the rise of hard-line Islamist political groups over the past three decades [15].

Potential triggers for armed conflict between Pakistan and India include another major attack on India by Islamist militant groups like the one in Mumbai in November 2008 that was linked to intelligence agencies in Pakistan [16]. A second possible trigger is the recurring artillery exchanges along the line of control in Kashmir, and occasionally the international border between Pakistan and India, which often claim significant military and civilian casualties [17]. In April 2016, at the conclusion of the Nuclear Security Summit, the White House Press secretary expressed concern about, "the risk that a conventional conflict between India and Pakistan could escalate to include the use of nuclear weapons" [18]. Should Pakistan use nuclear weapons against Indian conventional forces in such a situation, Indian nuclear doctrine calls for massive retaliation directed at Pakistani cities and Pakistan has threatened to respond in kind.

With Pakistan building ever closer military and economic ties to China, and India becoming a strategic partner of the United States, such a future South Asian conflict may quickly take on a global dimension given the increasingly tense nature of the great power rivalry between China and the US [20].

North Korea has a track record of repeatedly threatening the use of nuclear weapons; for example, in March 2016 it warned it would make a "pre-emptive and offensive nuclear strike" in response to joint US-South Korean military exercises [21]. It is capable of enriching uranium and producing weapons-grade plutonium and has deployed short- and medium-range ballistic missiles as well as testing long–range missiles [22].

Unintended Use of Nuclear Weapons

While these growing tensions amongst nuclear armed states could lead to the deliberate use of nuclear weapons, there is also the continuing danger that they could trigger the unintended or accidental use of these weapons.

There have been at least five occasions since 1979 when either Washington or Moscow prepared to launch nuclear weapons in the mistaken belief that the other side had already launched a nuclear attack or was preparing to do so [23]. In 1979 and again in 1980 computer errors in the US caused American radar systems to display, incorrectly, incoming Soviet missiles on their monitors. In September 1983, Soviet military radar incorrectly reported a NATO attack in progress. In November of that year the Soviet leadership incorrectly concluded that a NATO military exercise was the cover for an actual attack that was about to be launched. On January 25, 1995, a full 5 years after the end of the Cold War, Russian military radar incorrectly identified a Norwegian Black Brant XII rocket launched to study the aurora borealis as a Trident missile aimed at Moscow.

In each of these situations preparations for a counterstrike were initiated and nuclear war was averted by minutes.

The danger of this kind of mistake occurring again is amplified by current deficiencies in Russian radar warning systems. Russia has no space-based satellite early warning systems to alert them to the launch of nuclear-armed ballistic missiles from the ocean, so their warning time could be as short as 10 to 15 minutes. The only way for Russia to guarantee the ability to launch its forces before they are destroyed by a pre-emptive attack would be to pre-delegate launch authority to field commanders. Under these conditions, the time pressure to make a launch decision could greatly increase the chance of an accidental launch, especially if a computer error caused a false warning of attack during a crisis [24]. Recently, military leaders have begun to warn of a new threat that might cause the unintended launch of nuclear weapons: cyberterrorism. In a June 2015 speech, retired Marine Gen. James Cartwright, former head of the US Strategic Command, warned that it might be possible for terrorists to hack into Russian or American command and control systems and launch one or more nuclear missiles, a launch which would have a high probability of triggering a

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wider nuclear conflict. This danger is intensified by the continued US and Russian policy of maintaining their missiles on hair trigger alert, fully prepared for use and simply awaiting an order to launch [25]. There is also extensive evidence that individuals with responsibility for nuclear weapons have breached safety regulations. In 2003, for example, half of the US Air Force units responsible for nuclear weapons safety failed their safety inspections. In 2007 six cruise missiles armed with nuclear warheads were mistakenly loaded onto a B-52 bomber which sat on the tarmac overnight without armed guards before taking off and flying 1500 miles in violation of regulations which prohibit transportation of nuclear weapons by air over the USA [26].

Nuclear Weapons Modernization

The nuclear danger is amplified further by the extensive plans of all nine nuclear armed states to enhance their nuclear arsenals.

Although the world's inventory of nuclear weapons has declined significantly over the past two-and-a-half decades, from around 58,300 warheads in 1991, there remain roughly 15,375 warheads today of which 4,200 are deployed with operational forces. Nearly 1,800 warheads are on alert and ready for use on short notice [27]. (Figure)

While Russia, the US, and Britain continue to reduce their inventories, the pace of reduction has slowed compared with the past two decades. In fact, four of the world's nuclear-armed states (China, Pakistan, India and North Korea) are *increasing* their nuclear arsenals.

There are currently no negotiations between nuclear-armed states about reducing warhead inventories or curtailing operations and modernizations. Instead, there are signs that the deepening crises in Europe and the South China Sea are causing nuclear-armed states to increase the role of their nuclear forces.

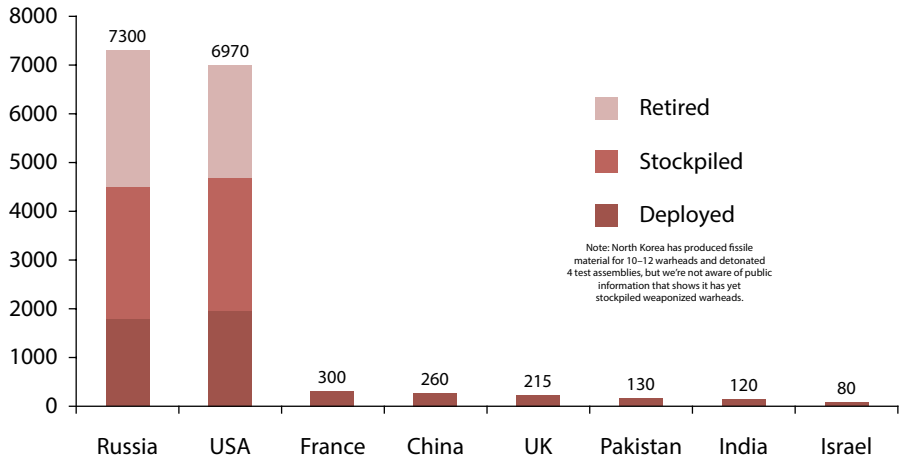

Figure. Estimated Global Nuclear Warhead Inventories, 2016

Instead of moving decisively toward deep cuts of their nuclear arsenals and making plans for the eventual elimination of nuclear weapons, the nuclear-armed states are reaffirming the importance of nuclear weapons and are carrying out extensive and costly modernizations of their nuclear arsenals [28]. (see table)

The scope of these modernization plans has led observers to characterize them as the beginning of a new arms race and a new Cold War [29].

The Health Consequences of Nuclear War

Given the growing danger of nuclear war, it is important to consider the health consequences of such a conflict.

The acute effects of nuclear weapons are well described in previous major reports by WHO and the US Institute of Medicine [30,31]. While there have been important developments regarding ionising radiation health effects in recent decades, it is in relation to the impacts of nuclear war on climate, agriculture and nutrition that scientific advances of the greatest moment have been made in the past decade, and these are therefore our focus here. As a result of these, we have come to understand that it is not just large scale nuclear war between the US and Russia that poses a global threat. A series of studies have shown that localized, regional nuclear war will also have catastrophic effects worldwide.

We undertook a literature search using the Web of Science database Topic Search function, on 14 March 2016, covering documents in English published from 2005 to 2016, using the search strategy: (("Nuclear Weapon*" OR "nuclear war*" OR "atomic weapon*" OR "atomic war*" OR "nuclear conflict*") and (Climate OR "Climate Change" OR environment* OR "Ozone Depletion" OR ozone OR Starvation OR famine OR Agriculture* OR crop* OR Food)).

The scenario that has been studied most frequently is a limited nuclear war between India and Pakistan involving 100 Hiroshima sized warheads, small by modern standards, targeted on urban centers. (This is a deliberate underestimate of the full potential of war in South Asia: the combined arsenals

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Table. Modernization Activities of the Nine Nuclear-armed States

Russia

- replacing all Soviet-era SS-18, SS-19 and SS-25 intercontinental ballistic missiles (ICBMs) by the early-2020s with different versions of the SS-27 and a new "heavy" silo-based ICBM.
- building eight new ballistic missile submarines (SSBNs) with the new SS-N-32 (Bulava) missile to replace eight operational Soviet-era Delta-class SSBNs and their missiles.
- upgrading its old Tu-160 (Blackjack) and Tu-95MS (Bear) bombers so they can continue to operate until a new bomber can replace them sometime in the 2020s.
- gradually replacing the old AS-15 air-launched cruise missile (ALCM) with a new ALCM known as the Kh-102.
- modernizing some of its non-strategic nuclear forces, replacing the old SS-21 short-range ballistic missile (SRBM) with the SS-26 (Iskander), replacing the old SS-N-21 sea-launched land-attack cruise missile (SLCM) with the SS-N-30A (Kalibr), and replacing the old Su-24 (Fencer) fighter-bomber with the Su-34 (Fullback).

United States

- building a new fleet of 12 SSBNs to replace the current 14 SSBNs. The new submarines will carry an improved version of the Trident II D5 sea-launched ballistic missile (SLBM) with new guidance system and enhanced warheads.
- modernizing its B-2 and B-52 bombers and developing the new B-21 stealth-bomber to replace the B-52s (and B-1s) from the late-2020s.
- developing a new guided nuclear bomb (B61-12) with increased accuracy, and a new ALCM with longer range and enhanced warhead.
- designing a new ICBM with enhanced warheads to replace the current Minuteman III ICBM by 2030.
- modernizing its non-strategic nuclear forces by replacing F-16s (and eventually F-15E) fighter-bombers with the F-35A stealthy fighter-bomber that will be carrying the new B61-12 guided nuclear bomb.

China

- replacing old liquid-fuel land-based missiles with DF-26 and DF-31A solid-fuel missiles on road-mobile launchers.
- equipping some of its missiles with multiple warheads.
- deploying a small fleet of Jin-class SSBNs with the new Jl-2 SLCBM.

France

- modernizing its SSBN fleet with the new M51 SLBM that will soon receive a new warhead.
- arming its bomber force with ALCMs.
- replacing Mirage 2000N aircraft with the Rafale which will be armed with a new ALCM.

United Kingdom

- developing a new SSBN class to replace the current Vanguard-class SSBNs which will carry the life-extended Trident II D5 with a new guidance system.
- equipping current SLBMs with enhanced warheads.

Pakistan

- deploying new and longer-range Shaheen-III ballistic missiles, Ra'ad ALCMs, Babur ground-launched cruise missiles, and developing a nuclear SLCM.
- deploying a tactical nuclear weapon, the 60-kilometer NASR missile.
- increasing production of fissile material for additional warheads.

India

- deploying and developing longer-range ballistic missiles that can target all of Pakistan and China, including several new versions of the Agni missile family.
- conducting sea-trials of its first SSBN, which will carry new types of SLBMs.
- building new reactors that can produce plutonium for additional warheads and expanding uranium enrichment capacity.

Israel

- modernizing its Jericho ballistic missiles and probably also its fighter-bombers.
- Possibly equipping its new German-built Dolphin-class submarines with a nuclear cruise missile.

North Korea

- deploying two new ballistic missiles (Musudan and Hwasong-13) that could potentially in the future be equipped with weaponized versions of the nuclear devices it has tested.
- developing a new longer-range missile.

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of India and Pakistan actually contain more than 220 nuclear warheads.) The direct effects in South Asia are catastrophic. Some 20 million people would die in the first week from the direct effects of the explosions, fire and local radiation [32].

The global consequences-global climate disruption and resultant famine-would be far more devastating. The fires caused by these nuclear weapons would loft 6.5 million tons of soot into the upper atmosphere. The impact of this soot has been examined by three teams of climate scientists using three different climate models and making the conservative assumption that only 5 million tons of soot are injected into the atmosphere [33-35]. Each model shows significant drops in average surface temperature and average precipitation across the globe with the effects lasting for more than a decade. The most sophisticated and recent model shows the most persistent declines in temperature and precipitation, which have not yet returned to baseline after 26 years, as long as the model was run. While the fuel density of modern cities varies, there is nothing specific to India/Pakistan about such a scenario. Nuclear weapons are extremely efficient at igniting, over large areas, simultaneous fires which rapidly coalesce and inject large volumes of soot and smoke into the stratosphere.

This climate disruption would in turn have profoundly negative impact on food production. The maize crop in the US, the world's largest producer, would decline an average of 12% over a full decade [36]. In China, the world's largest producer of grain, middle season rice would decline by 17% over a full decade, maize by 16%, and winter wheat, by a truly catastrophic 31% [37].

Under current conditions, adequate human nutrition cannot be sustained in the face of declines of food production of this magnitude. Total world grain reserves in January 2016 amounted to only 84 days of global consumption, and would not begin to offset the shortfall over a full decade [38]. Furthermore, there are currently 795 million people who are already undernourished at baseline [39]. There are also some 300 million people who enjoy adequate nutrition today, but live in countries highly dependent on food imports which would probably not be available as grain exporting countries suspended exports to feed their own people. In addition, there are nearly a billion people in China with incomes of $5 a day or less who are adequately fed today, but who have shared little in China's growing prosperity over the last several decades. All of these people, around two billion, would be at risk under the potential famine conditions that would result from this limited, regional nuclear war [40]. Large scale war between the US and Russia would be far worse. In early 2016, Russia and the US were estimated to possess 7300 and 6970 nuclear warheads respectively, 93% of the global total of 15,375. Under the provisions of the New START treaty, each of these countries will retain some 1550 strategic (long range) nuclear warheads when the Treaty is fully implemented in 2018. Most of these weapons are 10 to 50 times more powerful than the bombs which destroyed Hiroshima [41]. A 2002 study showed that if just 300 of the weapons in the Russian arsenal hit urban targets in the US, 75 to 100 million people would die in the first half hour from the firestorms and explosions [42]. This attack would also destroy most of the infrastructure – the electric grid, internet, banking and public health systems, food distribution network – needed to support the rest of the population, most of whom would succumb to exposure, starvation and epidemic disease in the months following. A US counterattack would be expected to cause the same level of destruction in Russia, and if NATO were involved in the conflict, Canada and much of Europe would face similar destruction.

These direct effects are only part of the story, however. As is true for a limited war in South Asia, the global climate effects would be far worse. A war involving only the strategic weapons that will still be deployed when New START is fully implemented would put some 150 million tons of soot in the upper atmosphere, and drop temperatures around the world by 8°C. In the interior regions of North America and Eurasia, temperatures would fall by 25 to 30°C. These conditions would persist for more than a decade. Temperatures on Earth have not been that cold since the last ice age. In the temperate regions of the Northern Hemisphere, the temperature would fall below freezing for some portion of every day for at least two years [43]. Under these conditions food production would stop and the vast majority of the human race would starve.

Efforts to Eliminate Nuclear Weapons

Understanding of the unprecedented existential threat posed by nuclear weapons was widely recognized in the very first resolution of the United Nations General Assembly in January 1946, calling for the elimination of atomic weapons [44]. The preamble of the 1970 nuclear Non-Proliferation Treaty (NPT) opens: "Considering the devastation that would be visited upon all mankind by a nuclear war and the consequent need to make every effort to avert the danger of such a war …" [45]. Yet for most of the past 71 years, the shared interests of humanity, based on the real consequences of any use of nuclear weapons, have been sidelined by the perceived interests of the 9 governments that possess and threaten use of nuclear weapons, which have dictated the pace and extent of nuclear arms control and disarmament. However, the obligation to pursue effective measures towards nuclear disarmament is a shared responsibility of all 190 NPT signatory states, and the International Court of Justice in its 1996 Advisory Opinion on nuclear weapons unanimously ruled that

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there exists an obligation not only to pursue in good faith, but to bring to a conclusion, negotiations leading to nuclear disarmament [46].

The contemporary 'Humanitarian Initiative' on nuclear weapons began with International Committee of the Red Cross (ICRC) president Jacob Kellenberger informing the Geneva Diplomatic Corps in 2010 that the world's largest humanitarian organization would make elimination of nuclear weapons – something it first called for on 5 September 1945 – a renewed priority [47]. A few weeks later, the five yearly 2010 NPT Review Conference outcome document referred for the first time to "deep concern about the catastrophic consequences of any use of nuclear weapons" [48]. In 2011, the Council of Delegates, the highest governing body of the Red Cross/Red Crescent Movement, called on all states "to ensure that nuclear weapons are never again used", and "to pursue in good faith and conclude with urgency and determination negotiations to prohibit the use of and completely eliminate nuclear weapons through a legally binding international agreement, based on existing commitments and international obligations" [49]. A special issue of the Movement's flagship journal, the *International Review of the Red Cross,* "The human costs of nuclear weapons", was recently published.

Beginning in 2012, at every NPT meeting and UN General Assembly (UNGA), a growing number of states, from 16 in 2012 to 144 in 2015, have supported resolutions affirming the centrality of humanitarian considerations in advancing nuclear disarmament, and the need to prevent use of nuclear weapons under any circumstances [50]. In 2013 and 2014 three successive fact-based international conferences on the Humanitarian Impact of Nuclear Weapons were held in Norway [51], Mexico [52] and Austria [53], the last with participation of 146 states. Remarkably, 68 years into the nuclear age, these were the first ever intergovernmental meetings dedicated to the humanitarian impacts of nuclear weapons. There was no significant disagreement at these conferences regarding the extensive expert evidence presented, leading to the conclusions 1) that any use of nuclear weapons would be catastrophic; 2) that no effective humanitarian response was possible to even a single nuclear detonation in an urban centre; 3) that the risk of nuclear weapons use had previously been underestimated, is growing, and exists as long as the weapons do; and 4) that there is a legal gap for nuclear weapons, in that the most destructive and indiscriminate of all weapons are the only weapon of mass destruction not yet explicitly prohibited under international law [54]. At the end of the Vienna conference, the Austrian government issued a pledge "to cooperate with all relevant stakeholders … to stigmatize, prohibit and eliminate nuclear weapons in light of their unacceptable humanitarian consequences and associated risks"; to "fill the legal gap for the prohibition and elimination of nuclear weapons" [55]. As of 20 March 2016, 127 states have endorsed this Humanitarian Pledge, with an additional 22 states voting in favour of a resolution bringing the Pledge to the UNGA [56].

The 2015 General Assembly also voted overwhelmingly to establish an Open Ended Working Group (OEWG) to address this legal gap, which though open to all states, was opposed and boycotted by all the nuclear-armed states. The Working Group was charged with reporting back to the 2016 UNGA on effective legal measures required to attain and maintain a world free of nuclear weapons. It "recommended with widespread support for the General Assembly to convene a conference in 2017, open to all States, with the participation and contribution of civil society, to negotiate a legally-binding instrument to prohibit nuclear weapons, leading towards their total elimination …"[57]. The Working Group's report provided detailed suggestions on specific elements that could be included in such a treaty. This recommendation was taken forward in a resolution co-sponsored by 57 states [58] and adopted by the UNGA First Committee on 27 October 2016, with 123 States voting yes, 38 (predominantly nuclear-armed and nuclear-allied) voting no, and 16 abstentions. The full UNGA will undertake a final vote in early December 2016, and the first negotiating conference will convene in New York on 27 March 2017. A new international treaty comprehensively prohibiting nuclear weapons is thus within sight. This is increasingly seen by a substantial majority of states as the most promising and realistic step which can now be taken to progress the eradication of nuclear weapons, and the conclusion of such a treaty would constitute the most significant development in nuclear disarmament since the end of the Cold War. Treaties unequivocally prohibiting unacceptable weapons and providing for their subsequent elimination has been the approach successfully used in relation to every other kind of indiscriminate, inhumane weapon – biological, toxin [59] and chemical weapons [60], followed by antipersonnel landmines [61] and cluster munitions [62].

The Role of the Health Community

Involvement of the medical community in these efforts to eliminate nuclear weapons flows from a long history of medical and scientific concern about nuclear weapons. After the hydrogen bomb code named Castle Bravo was detonated at Bikini Atoll with a yield of around 15 megatons (millions of tons of TNT equivalent), double that predicted, there was widespread protest from many world leaders together with Albert Einstein and the Federation of American Scientists [63]. In 1957, as atmospheric testing of nuclear weapons continued unabated, an appeal from Albert Schweitzer for a ban on nuclear tests was broadcast to audiences in 50 nations and a petition initiated by Linus Pauling, 1954 Nobel laureate in Chemistry, also demand-

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ing a test ban was signed by 9000 scientists in 43 countries. Pauling was awarded the Nobel Peace Prize in 1963 for his opposition to nuclear testing. Also in 1957 the British Atomic Scientists' Association set up a committee to assess the risks of cancer arising from the fallout from atmospheric nuclear tests, chaired by Professor Joseph Rotblat, a medical physicist (and during the 2nd World War an atomic scientist, working on the atomic bomb at Los Alamos). It concluded that for every 1 megaton exploded in the atmosphere, around 1000 people were likely to develop bone cancers, and made other estimates of the likely health consequences of atmospheric nuclear testing [64].

A series of four [65-68] influential articles appeared in the *New England Journal of Medicine* in 1962 describing the medical effects of a thermonuclear attack on Massachusetts, the (limited) role of the medical profession in dealing with the consequences, and the psychiatric and social aspects of civil defence. The authors, who were members of a new organization *Physicians for Social Responsibility*, concluded that as no effective clinical response was possible, doctors "must begin to explore a new area of preventive medicine, the prevention of thermonuclear, chemical and biological warfare".

Negotiations on a ban on nuclear testing continued inconclusively until 1963 because of concerns about the potential to conceal clandestine tests. With evidence of widespread radioactive fallout and accumulation of strontium-90 in the deciduous teeth of children around the world, public opinion swung strongly in favour of banning atmospheric nuclear testing and the Limited Test Ban treaty was agreed in 1963, but progress towards a comprehensive treaty proved frustratingly slow.

In the early 1980s a number of reports on the health effects of nuclear weapons appeared including a BMA report of 1983 which concluded that the casualties from the detonation of a single megaton weapon would overwhelm the resources of the entire UK National Health Service [69]. The World Health Assembly adopted a resolution in 1983 including reference to nuclear weapons as "the greatest immediate threat to the health and welfare of mankind" [70]. Scientific and medical evidence that civil defence programs against nuclear war provided at best an illusion of protection led to their widespread abandonment [71]. Evidence on the catastrophic health effects of nuclear war brought by physicians to Presidents Ronald Reagan and Mikhail Gorbachev had profound effect, bringing them to declare in 1985 that "A nuclear war cannot be won and must never be fought"; to end their nuclear arms race; agree on the elimination of intermediate range nuclear missiles; and come close to an agreement to eliminate their nuclear arsenals entirely. Gorbachev wrote that without the efforts of IPPNW – awarded the Nobel Peace Prize in 1985 – these disarmament initiatives "would probably have been impossible" [72]. Given the potential for nuclear war to occur as a result of error and the lack of evidence that a planned medical response can have any perceptible impact on the outcome, it has been suggested that "support for deterrence with these weapons as a policy for national or global security appears to be incompatible with basic principles of medical ethics and international law. The primary medical responsibility under such circumstances is to participate in attempts to prevent nuclear war" [73]. New evidence about the pervasive threats to health of the detonation of even a small percentage of the world's nuclear arsenals, together with the failure of the Non-Proliferation Treaty to prevent the retention and modernization of nuclear weapons has given impetus to a new global movement to ban nuclear weapons. The health professions therefore have a central role in advocating for the abolition of nuclear weapons, reflecting their ethical responsibility to protect health and prevent illness.

In 2007, IPPNW founded the International Campaign to Abolish Nuclear Weapons (ICAN) – a broad global campaign coalition working for a treaty banning nuclear weapons. ICAN now has 440 partner organisations in 98 countries, is the lead civil society partner for the governments hosting the Humanitarian conferences, and continues to grow as a major civil society coordinating initiative and partner for governments serious about the humanitarian imperative for nuclear disarmament.

In Moscow in October 2015, the World Medical Association General Assembly unanimously updated its Statement on Nuclear Weapons, adopted in 1998 and amended in 2008, requesting all National Medical Associations to educate their publics and governments about the health impacts of nuclear war and "to join the WMA in supporting this Declaration and to urge their respective governments to work to ban and eliminate nuclear weapons" [74].

In April 2016, the WMA joined with IPPNW, the World Federation of Public Health Associations and the International Council of Nurses, in submitting to the UN Working Group the first such united statement detailing the health and humanitarian imperative to ban and eliminate nuclear weapons [75]. All other global health progress and efforts could come to nought if we do not succeed in eradicating nuclear weapons before they are again used in war. There has never been a better opportunity nor greater need for united and effective health professional engagement to remove the most acute existential threat to global health and survival.

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Ira Helfand, MD
Co-President, International Physicians for the Prevention of Nuclear War, Malden, Massachusetts, 413 320 7829, E-mail: ihelfand@igc.org

Andy Haines, MD
Professor, Departments of Social and Environmental Health Research and of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, London, WC1H 9SH, E-mail: aphaines@doctors.org.uk

Tilman Ruff,
FRACP, Nossal Institute for Global Health, School of Population and Global Health, University of Melbourne, Melbourne, Co-President, International Physicians for the Prevention of Nuclear War, E-mail: tar@unimelb.edu.au

Hans Kristensen
Federation of American Scientists, Washington DC, E-mail: hkristensen@fas.org

Patricia Lewis, PhD
Chatham House, London, E-mail: PLewis@chathamhouse.org

Zia Mian, PhD
Program on Science and Global Security, Princeton University, Princeton, NJ, E-mail: zia@princeton.edu

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WMA Calls on Governments to Ban and Eliminate Nuclear Weapons

World Medical Association (WMA) Statement on Nuclear Weapons

Adopted 17 October 2015

The WMA Declarations of Geneva, of Helsinki and of Tokyo make clear the duties and responsibilities of the medical profession to preserve and safeguard the health of the patient and to consecrate itself to the service of humanity. The WMA considers that it has a duty to work for the elimination of nuclear weapons.

Therefore the WMA:

2.1 Condemns the development, testing, production, stockpiling, transfer, deployment, threat and use of nuclear weapons;

2.2 Requests all governments to refrain from the development, testing, production, stockpiling, transfer, deployment, threat and use of nuclear weapons and to work in good faith towards the elimination of nuclear weapons;

2.3 Advises all governments that even a limited nuclear war would bring about immense human suffering and substantial death toll together with catastrophic effects on the earth's ecosystem, which could subsequently decrease the worlds food supply and would put a significant portion of the world's population at risk of famine; and

2.4 Requests that all National Medical Associations join the WMA in supporting this Declaration, use available educational resources to educate the general public and to urge their respective governments to work towards the elimination of nuclear weapons.

2.5 Requests all National Medical Associations to join the WMA in supporting this Declaration and to urge their respective governments to work to ban and eliminate nuclear weapons.

The Value of Resiliency Training in Postgraduate Medical Education

Residency is a dynamic and stressful time. Trainees must continually balance their roles as both learners and clinicians within a high-stakes environment. Whether it's hearing that first code pager, witnessing a patient death, feeling the cumulative impact of long hours and on-call responsibilities, or missing an important life event at home – every resident deals with stress.

Stress impacts physician well-being. The majority of Canadian medical residents report that work-related fatigue affects their mental health, physical health, and relationships with family and friends (Resident Doctors of Canada National Resident Survey, 2015). The overall depression rate in U.S. medical students and residents is as high as 1 in 5 [1]. Burnout, a work-related syndrome due to chronic exposure to occupational stress, is prevalent in 27–75% of residents, depending on specialty [2].

RDoC's Resiliency Curriculum

Resiliency is the ability to recover from or adjust easily to adverse situations, and it is a critical trait for resident doctors. Training residents in resiliency skills equips them to effectively identify, cope with, and recover from challenging experiences in their personal and professional lives, while setting them up for rewarding and sustainable careers.

With content support from the Mental Health Commission of Canada and the Department of National Defence's Road to Mental Readiness Program, Resident Doctors of Canada (RDoC) has developed a practical, skills-based resiliency curriculum to help mitigate the negative consequences of stress during residency and beyond.

The curriculum is based on the importance of promoting mental resiliency in physicians by fostering supportive and positive

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learning environments. It advocates for a systematic approach to understanding and addressing anticipated stresses, and assists residents in overcoming personal adversity by providing them with tools to better support their peers and patients.

RDoC's resiliency curriculum encourages residents to learn how to become more aware of their own mental health, and to take action early when they start to notice shifts in their well-being. Students learn and practice a series of tools based on cognitive behavioural therapy, performance psychology and mindfulness to build and strengthen their resiliency. The curriculum also explores the barriers to seeking help, such as concerns regarding privacy or a fear of losing control, as well as some guidelines for approaching colleagues and peers who appear to be in distress.

What's Next?

RDoC has completed a pilot project that involved delivering and evaluating the resiliency curriculum in five clinical specialties at two Canadian faculties of medicine. The overwhelming response from participants has been that resiliency training is highly valuable to residents and is an essential part of medication education. RDoC's next steps include developing a strategy to continue delivering resiliency training across the country, in order to help residents manage stress, support their peers, and ultimately provide better patient care.

For more information, please e-mail *resiliency@residentdoctors.ca*

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Kimberly Williams, MD
President, Resident
Doctors of Canada

The Role of Physicians Fighting Children Trafficking and Illegal Adoptions: the Use of Genetic Identification

Jose A. Lorente

1. Human trafficking

According to UNODC, Article 3, paragraph (a) of the Protocol to Prevent, Suppress and Punish Trafficking in Persons, "*trafficking in Persons is the recruitment, transportation, transfer, harboring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs.*" [1]

Human trafficking involves the forced transfer of a person and the use of their services in order to recruit them for commercial trafficking. Frequently, the consent is obtained but through deceitful acts and false promises. Many times, due to the social conditions of the victim, they are not aware of being exploited. To make it easier, a person is trafficked if she or he is forced or tricked into a situation in which he or she is exploited. Child trafficking differs from human trafficking in that no force or deception needs to take place in order to prove that a child has been trafficked. This difference is based on

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the fact that a child is considered incapable of taking an informed decision.

2. Trafficking in children

Children, the most fragile members of society, can be subjected to many abuses. Indeed, one of these abuses is human trafficking, an apparently lucrative criminal activity. According to UNICEF, *"an estimated 300 million children worldwide are subjected to violence, exploitation and abuse including the worst forms of child labour in communities, schools and institutions; during armed conflict; and to harmful practices such as female genital mutilation/cutting and child marriage"*. Only in the United States are there figures to begin to appreciate the magnitude of the missing children problem within the country. Approximately 800,000 children are reported missing each year. Of these, approximately 360,000 are runaways and 340,000 are classified as "missing with benign explanation", and about 100,000 are abducted either by family members or other known individuals or are lost and/or injured (UNICEF 2004; Crimes 2009). While these figures are disturbing, they relate to mostly domestic situations and do not represent the greater international problem where children are illegally sold for malevolent purposes. These numbers also mainly show domestic situations and do not represent the huge international problem of the harmful illegal trade of children. Recent reports give information about the nature of trafficking of children but its real significance is still not clear. In 2002, the International Labour Organization (ILO) estimated that 1.2 million children are kidnapped and trafficked in a year [2].

3. The role of Physicians fighting children trafficking and illegal adoptions

The UNICEF's Convention on the Rights of the Child (resolution 44/25 of 20 November 1989, entered into force on 2 September 1990), states in art. 24.1 that States Parties recognize the right of the child to receive the highest attainable standard of health care and to have access to appropriate facilities for the treatment of illness and rehabilitation of health [3]. States Parties shall strive to ensure that no child is deprived of his or her right of access to such health care services.

Besides that, and according to art. 21, States Parties that recognize and/or permit the system of adoption shall ensure that the best interests of the child shall be the paramount consideration and they shall: (a) Ensure that the adoption of a child is authorized only by accredited authorities who determine, in accordance with applicable law and procedures and on the basis of all pertinent and reliable information, that the adoption is permissible in view of the child's status concerning parents, relatives and legal guardians and that, if required, the persons concerned have given their informed consent to the adoption on the basis of such counselling as may be deemed necessary.

There is no doubt that physicians have a role to play, since their professional activities are crucial in seeking to ensure the adherence to children's rights, and in particular to articles 21 & 24. Physicians play a relevant role in two different positions during the whole adoption process before the adoption is completed. First, in countries and areas where children are going to be given for adoption, because they will deal with children who are going to be adopted, and they must be sure that the child is healthy, with no injuries that could show battering or abuses; they must report to the proper authorities any suspicious adoption activities related to minors whose identities are not clear or where legal safeguards are not in place. Second, in countries and areas where children are going to be adopted, physicians should advise those families who are considering adoption of minors to verify that the adoption procedures meet all legal requirements in their jurisdiction. Since they are trusted, the fact of providing information about networks related to illegal adoptions is important.

Beside that, physicians should explain to families about genetic testing (DNA analysis) that can be used to confirm the biological relationship between the children that are going to be given for adoptions and the relatives (usually parents) who are presenting the children for adoption. It is crucial to make sure that children are being given for adoption on a voluntary basis and by their biological parents or relatives. Genetic analysis can also help to identify missing children that were not previously identified and facilitate family reunification.

4. One example: the DNA-PROKIDS Program: DNA to identify missing and vulnerable children

After a number of successful missing persons identification initiatives, as e.g. the Spanish Phoenix Program [4], DNA-PROKIDS was created in 2004 by Dr. Jose Antonio Lorente, Director of the Genetic Identification Laboratory of University of Granada. After a pilot study from 2006 to 2008 in countries from Central America and Asia, it became a worldwide action.

The goal of DNA-PROKIDS is the use of human genetic identification technologies (i.e. DNA analysis) to identify missing children. DNA-PROKIDS is supporting a number of countries in Latin America and Asia analysis to generate two independent databases, always according to the laws and regulations in each country:

QUESTIONED DATABASE: DNA profiles of unidentified children under protection of the authorities living in orphanages,

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NGO's facilities, or other institutions. In all cases these are children whose family is not known. The legal tutor of the child must authorize the collection of the sample.

REFERENCE DATABASE: DNA profiles of relatives of missing children: parents, grandparents, etc. who have reported that his/her biologically-related child is lost. These samples are voluntarily provided by the relatives and collected after an informed consent form has been signed.

Globally, DNA-PROKIDS is composed of three tiers. The first tier is at the national level with two genetic databases or indices per country, as previously described. The DNA profiles in these two indices will be compared routinely to assist in identifying missing children. The second tier implies coordination amongst different countries; it is highly recommended for neighboring countries in affected regions. The lack of coordination plays in detriment of an effective strategy to fight child trafficking globally. The third tier would be the adoption of international conventions that should require the correct identification of every child by using all available methodologies, including DNA analysis. No child should be given for adoption without being sure that his or her family is not looking for him or her.

The application and usefulness of DNA identity testing are already well-documented. To date DNA-PROKIDS participating countries have analyzed over 10.500 samples (from Mexico, Guatemala, El Salvador, Paraguay, Peru, Bolivia in Latin America, and the Philippines, Thailand, Indonesia, and India in Asia). DNA analyses first, and subsequent application of accompanying meta-data, have already helped to identify more than 860 missing children who have been returned to their families; and more than 250 illegal adoptions that have been avoided.

Guatemala is the first and so far the only country in the world that has passed a law (Ley de Alerta Alba-Keneth) in 2010 to request DNA analysis on all unidentified children and to offer the analysis for free to the relatives of missing children [5].

More operational data and updated information can be found at www.dna-prokids.org

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Jose A. Lorente[1,2], MD, PhD, Maria Saiz[1], Maria Jesus Alvarez-Cubero[2], Juan Carlos Alvarez[1], Juan Jose Rodriguez-Sendin[3], MD, Fernando Rivas[3], MD, PhD

1. DNA-PROKIDS Program- Department of Legal Medicine, Toxicology and Physical Anthropology. Faculty of Medicine. PTS Granada. Av. Investigación 11. 18016. Granada. Spain

2. GENYO. Centre for Genomics and Oncological Research. PTS Granada. Avenida de la Ilustración 114. 18016 Granada. Spain

3. Consejo General de Colegios Oficiales de Médicos de España, Madrid

E-mail: jose.lorente@genyo.es

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Why Should the World Medical Association not Change its Policy towards Euthanasia?

Pablo Requena

In Maxence Van Der Meersch's popular novel *Bodies and Souls* Michele Doutreval, a young country doctor, the son of a well-known university professor in Angers, due to several turns of events, finds himself working in a small town in the North of France. One of the episodes in particular describes doctor Doutreval's great humanity and good approach to Medicine. On his way back home after a long day at work, he meets a man on his doorstep. The man, who looks clearly sorry to trouble the doctor at such a late hour, tells him that his little daughter, Franchina Ray is dying of tuberculosis and wishes to say goodbye. Michele's answer is concise but very illustrative: "Yes, sure. I'll be right back". He enters his house to greet his wife and to tell her that once again they will not be able to spend the night together. Then he sets out on his way to the sick girl's house where he stands by her side until she dies. The episode ends with the remark that it was late when the doctor finally got back home [1]. Medical science has certainly changed in the century that separates us from doctor Doutreval's time, and it has changed irreversibly... Nevertheless, every doctor would wish to have the same availability and friendliness that Michele had in his medical practice.

It seems to me that Van Der Meersch's story can be a useful backdrop for the complicated topic of this article. Medical science changes with society, not only because today we have more diagnostic and therapeutic means than we used to have a few decades ago. The introduction of technology into medical care has caused a great transformation in the way of conceiving the doctor-patient relationship. Patients are each time seen by more and more professionals and this represents a temptation for the doctor, who can easily become another stranger at the bedside [2]. Moreover, autonomy, one of the basic principles of Bioethics, has induced many doctors to shirk their duty of providing advice and orientation, and barricade themselves behind technical means. It is within this complicated medical context and the prolongation of pathological processes, that the demand for euthanasia can insinuate itself. So far and with few exceptions, medical science, through its constituent bodies, has refused to take this path. However, social pressure is strong in some countries and consequently it is essential to engage in a calm and well-considered debate on the topic.

The World Medical Association (WMA), which defines euthanasia as "the act of deliberately ending the life of a patient, even at the patient's own request or at the request of close relatives", has condemned euthanasia since 1987 in a clear and explicit way, stating that "it is unethical". It then goes on to clarify what is and what is not euthanasia, by adding that "This does not prevent the physician from respecting the desire of a patient to allow the natural process of death to follow its course in the terminal phase of sickness"[3]. Moreover, according to the 2002 resolution on euthanasia: "The World Medical Association reaffirms its strong belief that euthanasia is in conflict with basic ethical principles of medical practice and the WMA strongly encourages all National Medical Associations and physicians to refrain from participating in euthanasia, even if national law allows it or decriminalizes it under certain conditions"[4]. In this paper I would like to highlight some of the arguments that justify this policy bearing in mind that negative moral prescriptions are not an end in themselves, but are the starting point for a profound and creative reflection on medical assistance at the end of life; an end of life which has benefited immensely over the last decades from advances in palliative care. Unfortunately, the teaching of this area of medical science has been insufficient in many instances. For this reason, this reflection is also a call for a more substantial engagement in order to stimulate an increase in undergraduate and graduate training in this important field of modern medicine.

Since its inception, Medical Ethics has rejected euthanasia following a basic deontological principle: "doctors must not kill". Deontology, which is currently represented by Kantian ethics, highlights what can be done and what cannot be done. The rationale for these norms may vary according to the various moral formulations, but what is more important here is the assumption of a series of obligations and prohibitions; prohibitions of acts which contravene the good of the person or of society. Apart from the deontological argument, utilitarian arguments have also been added to recent debates on euthanasia. Their argument claims that a particular action is to be considered wrong not because there is a norm prohibiting it, but rather because the action goes against the greatest good for the greatest number of the people. For the case in point, the utilitarian or consequentialist argument rejects the practice of euthanasia.

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Even though utilitarianism does not consider the practice immoral in itself, and in fact considers it justified in some cases, it accepts that allowing it would result in serious abuses. This form of argumentation has entered the bioethical bibliography using the term "slippery slope".

"Doctors must not kill"

The deontological principle condemning euthanasia finds its paradigmatic expression in the Hippocratic Oath, which has constituted the basis of Medical Ethics from the origins of medical science to this day. This text, dating back to the 4th century BC, states: "I will neither give a deadly drug to anybody if asked for it, nor will I make a suggestion to this effect"[5]. This is a brief statement, like the rest of the statements that are mentioned in the Oath, which instructs doctors not to provide patients with any means to end their lives. Actually, what the Oath condemns is what we know today as "assisted suicide". However, medical tradition has always seen it as a prohibition of any lethal act on the part of the doctor. The anthropologist Margaret Mead explains that Greek medicine distinguished the doctor from the magician, when the definitive separation between to kill and to cure was achieved [6].

As concerns the current debate on euthanasia, this ethical rule is extremely important, for it was written in a social and philosophical context that widely favoured suicide. Platonists as well as cynics and stoics were in favour of euthanasia in the event of illness, and in some cases it was actually seen as an act of courage. Aristotle and Epicurus held a less positive outlook on suicide, though left certain space for its justification [7]. This is a significant fact, for even though it was a relatively common and socially justified practice, Medical Ethics considered it important for doctors to avoid in order not to contradict their profession which is precisely to cure and not to kill the patient. It was also important in order to avoid any suspicion that doctors would anticipate their patients' death.

Throughout the centuries, the moral principle "doctors must not kill" has been passed on from generation to generation as a basic pillar of the doctor's vocation. For some, the idea of converting this rule into a mere *prima facie* principle, or a simple piece of advice that can be ignored in certain circumstances, constitutes an alteration, not of some peripheral element of Medicine but of its very essence: "The very soul of medicine is on trial" [8]. Lonnie Bristow, former president of the AMA, in a statement read before the Congressional Committee of the United States voiced the same opinion: "Laws sanctioning physician assisted suicide serve to undermine the foundation of the physician-patient relationship, which is grounded in the patient's trust that the physician is working wholeheartedly for the patient's health and welfare" [9].

Daniel Callahan, in his thought provoking book *The Trouble Dream of Life*, holds that the request for euthanasia is a manifestation of patients' and society's lack of trust in the healthcare system. Euthanasia would represent the illusion of being in control of illness at all times and of being able to put an end to life, when considered the best choice, without having to succumb to the dominance of technology that can keep people alive as long as possible. Fundamentally, there is a feeling of mistrust towards the doctor and his medicine. What the author finds paradoxical is that in order to protect itself from this technological assault, society would so easily choose this path and happily entrust the doctor with the power of deliberately ending a life [10]. This view appears as the bottom line in Herbert Hendin's interesting book *Seduced by Death*, in which the history of euthanasia in the Netherlands is described directly by the people who have been involved in it and which concludes with the message that it is not worth following this path. The author is of the personal view that there is no moral issue in applying euthanasia to specific cases; but the European experience shows the great influence the legalisation of this practice has on the doctor-patient relationship. Ultimately this means increasing the power of medicine to decide end-of-life situations which are extremely complex and which could find in euthanasia a far too easy "solution" [11].

Another important aspect when considering euthanasia that goes beyond the doctor-patient relationship is the weighty matter of critically ill patients having to make a decision, and in a certain sense justify, their desire to carry on living. Although its proponents insist that the choice of euthanasia must be free from coercion, in practice this hardly ever happens. If the sick person is aware that her/his condition constitutes a burden to their family and the community, it is logical that she/he would wish to spare them the burden and decide for euthanasia for this reason. In 2002, Tonti-Filippini, an Australian bioethicist (who recently passed away), wrote an open letter in plain and direct language to the then Prime Minister of his Country, Mike Rann, concerning a legislative proposal in favour of euthanasia. He pointed out that for people like himself, who found themselves in a situation eligible for euthanasia, the last thing they needed was precisely such a possibility. What they needed was human contact, support and good medical care, since their critical state of health was already dulling their will to fight…and to live [12]. It seems to me that this aspect of the matter is rarely taken into serious consideration, whereas it should give healthcare professionals food for thought.

Slippery slope

The debate on euthanasia has increasingly given greater weight to moral arguments based on consequences caused by actions and on healthcare policies. The "slippery slope" argument holds that if a law is passed allowing euthanasia for a number of very concrete cases and with strict conditions,

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this would not prevent abuse. Experience proves, moreover, that in time the restrictions are weakened and euthanasia ends up being applied to patients who in principle should have been excluded.

Before we move on to study this issue, let us look at some data. Even though these numbers do not represent "a fall down the slope", they certainly deserve special attention, as they are illustrative of this situation bearing in mind that when the law in favour of euthanasia was approved in the Netherlands and Belgium in 2002 the thought was that it would apply to a very limited number of cases. As a matter of fact in the Netherlands it was legalised in 1984 as a result of a decision of the Dutch Suprme Court. In the debates previous to the ratification of the law, they talked of limit cases in which medical care, it was held, was incapable of providing a satisfactory answer. Instead what has been witnessed over the years has been an annual increase in the practice of euthanasia as more and more justifications have been given for it. It is true that, in the years following the approval of the law in favour of euthanasia in the Netherlands, there was a slight decrease in the number of cases compared to the previous years. In 2001, deaths from euthanasia and assisted suicide represented 2.6% of all deaths, whereas in 2005 they represented 1.7% [13]. Nevertheless, after the numbers settled, there has been a considerable increase over the last few years. In the 2003 report of the *Regional euthanasia review committees* which gives data from the first year of the promulgation of the law, 1815 cases of euthanasia and assisted suicide were recorded; in 2004, they increased to 1886 and in 2005, they reached 1933 cases. In the 2015 report, the total number of deaths by euthanasia and assisted suicides was 5516 [14]. It is also worth noting as Van Der Heide does in her 2007 article that apart from the recorded increase in cases of euthanasia over the years, there has been a parallel increase in cases of continuous deep sedation intended as a means to hasten patients' death. In 2001, the deaths from continuous deep sedation amounted to 5.6% of all deaths, whereas in 2005 the number had risen to 7.1%. Increased numbers have also been recorded in cases referred to as "voluntary stopping of eating and drinking" which, according to the *Royal Dutch Medical Association* (2011), account for up to 2500 deaths a year. Although the *Dutch Medical Association* considers this practice distinct from assisted suicide, in our opinion there is hardly any difference between the two [15]. These statistics help give an idea of the situation regarding euthanasia and similar practices at the end-of-life in the country with the most experience of such issues.

Going back to the "slippery slope" argument, special mention should be made of the works of Professor John Keown, who has produced one of the most in-depth studies of the debate over voluntary euthanasia from a legal perspective, and who offers a good overview of this tool of moral reasoning [16]. He distinguishes two main aspects of the argument: an empirical and a logical one. The first is a simple observation: in those places in which euthanasia was approved for persons with incurable illness associated with intolerable suffering and who would repeatedly request for an end to their lives, it is has been seen that, over the years, euthanasia has been performed on patients with curable illnesses, who did not have intolerable suffering or who had not requested to die. The logical aspect of the argument, holds that the specific precautions, which are taken with the specific purpose of reducing the practice of euthanasia to only limit cases, disappears not only because of the practical question at the moment of implementation, but also because of a theoretical reason. What justifies euthanasia in certain limit cases, making reference to patient autonomy or to the fact that some patients would be better off dead, can also be used to justify its practice when patients voluntarily ask for it even if they do not have intolerable suffering such as in the case for elderly people. Similarly, non-voluntary euthanasia would be also considered justifiable in those cases in which chronically unconscious patients are considered to be better off dead.

Some authors claim that "the Dutch experience" demonstrates a sufficiently transparent system in which the incidence of euthanasia abuses would not occur frequently [17]. However, a considerable number of authors have found flaws in the system, and the inability of avoiding a slip down the "slippery slope". Raphael Cohen-Almagor, another author who has made an in-depth study of euthanasia in the countries that have legalised it, is of the same opinion. In one of his articles, he writes that, although some deny slipping on the "slippery slope", the two major studies carried out in Holland in 1990 and 1995 show that frequently, it is the doctors who first propose euthanasia or the patient's family members who initiate the discussion process; these initiatives in turn have a marked influence on the decision-making process. In other cases, patients' requests are not adequately evaluated; and more seriously, and in quite a number of cases, people who did not ask for euthanasia end up dead [18].

The entire system controlling euthanasia in the Netherlands and Belgium relies on the information gleaned from questionnaires completed by doctors for each case and sent to the relevant Commission for evaluation. This control system fails in the assessment of less clear cases or when not all the legal provisions have been followed. In a study published in the *British Medical Journal* in 2010, Smets et al. analysed questionnaires sent to doctors in Flanders covering a period in which there had been 137 certified cases of euthanasia out of a total of 6202 deaths. The conclusion of the study was that only half of the cases of euthanasia were reported to the Commission. In some cases, the error was due to the fact that doctors did not consider the death as due to euthanasia; in others it was due to the feeling that completing the documentation was an administrative burden, or that not all the legal requirements had been applied. Some doctors

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even claimed that euthanasia was a private matter between the doctor and patient [19].

A number of monographs have been written on the subject of the "slippery slope" [20]. Due to limited space, we will only mention three major points: euthanasia for the elderly people who are not suffering from any incurable illness; euthanasia for newborns or minors and euthanasia for patients with depression. The first point is a clear example of the "slippery slope" argument in action. At the beginning, the law required an incurable illness, which would cause intolerable suffering. However, according to the 2015 "Code of Practice" of the *Regional euthanasia review committees* in the Netherlands, the practice of euthanasia is granted to those elderly people who think that their lives are no longer worth living and would rather die than continue living. The text goes as far as pointing out that this question was the issue of previous debate but which has been resolved as it has been noted that intolerable suffering is not only caused by terminal illnesses but also by many geriatric conditions [21]. It is easy to understand how difficult it is for doctors to evaluate such a request. There are very few objective elements foreseen by law on which a request could be based to justify a more or less autonomous decision to end one's life, independent of one's health.

Euthanasia is also problematic when considered at the opposite extreme of age. In the first years of the debate on euthanasia and during the drafting of the first legislation, the practice of euthanasia was intended for adults, who could provide a valid consent. In the Dutch situation, it only took a few years to extend euthanasia to those over 16 without their parents consent, and to those between 12 and 16 with parental consent [22]. Neither did it take long to justify euthanasia for newborns born with serious conditions [23]. Although it may be true that these are very complex cases, in which the best interests of the child are being sought, it is also true that in their justification the basic moral element of autonomous decision is lost. In 2014, Belgium abolished the age limit on euthanasia. A similar problem arises when euthanasia is granted to people with psychiatric illnesses, and in particular those who suffer from depression. In these cases, it is very hard to ascertain that the request to die is the result of a well informed decision made with the minimum amount of interior freedom required for such a decision.

A final thought

Although many points and much of the debate on euthanasia could still be analysed and addressed, based on what has been said so far, it appears quite clear that euthanasia is presented as a "help" and even as a "solution" for a few hopeless cases. We can conclude that, from both a medical and ethical point of view, it represents an inadequate solution to a real problem; a solution that, as we have seen, leads doctors and patients to get used to it and to consider it as one more therapeutic option. This in turn explains the growing number of euthanasia cases every year.

We believe that Medicine has much more to offer and that, today, its ability to deal with many symptoms is incomparably better than it was a few years ago. In many articles that describe the experience of euthanasia in the Netherlands and Belgium, pain, and generally pain caused by cancer, is one of the major reasons why people ask for euthanasia [24]. In some cases, it is true that treating this kind of pain might be very difficult, but modern palliative care is capable of alleviating the majority of this type of pain. The problem is that, often, physicians do not possess the appropriate competence to do so. The fifth report of the *Federal Commission for Control and Assessment of Euthanasia* in Belgium (2010-2011) indicates that, of all the doctors who had received requests for euthanasia, only 10% had been trained in palliative care. This figure appears to us to suggest that the solution to requests for euthanasia, which in reality are always a request for help, lies in this direction. A request for help can be answered in many different ways, but not all the answers are equally beneficial. As we said at the beginning, closing the door on euthanasia should represent a starting point for substantially improving professional training in the terminal care of patients.

Therefore, we believe that WMA should not change its policy on euthanasia. A policy based on a Medical Ethic thousands of years old, which does not involve any external control of medical care but rather is a constant stimulus to better the care of patients in the final moments of their lives, always guaranteeing their personal autonomy.

I am very grateful to Dr. Paul Kioko and Prof. John Keown for their invaluable help with the final draft of this article.

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Pablo Requena
Associate Professor of Moral Theology and Bioethics
Pontifical University of the Holy Cross in Rome
Vatican Medical Association
E-mail: requena@pusc.it

Voluntary Euthanasia and Physician-assisted Suicide: Should the WMA Drop its Opposition?

Introduction

The WMA has long opposed the decriminalisation of voluntary euthanasia (VE) and/or physician-assisted suicide (PAS) [1]. Its opposition to lethal injections and/or prescriptions for lethal drugs, reinforced by that of national medical associations, has proved a political bulwark against decriminalisation. Precisely because of this, campaigners for VE/PAS will increasingly be pressuring the WMA, and national medical associations, to drop their opposition, and adopt at least a 'neutral' position.

This paper will outline seven arguments that will likely be pressed on the WMA; and why they all fail [2]. As the first two arguments are typically at the forefront of the case for decriminalisation, more space will be devoted to them.

Seven Arguments for Decriminalisation

1. Respect for Autonomy

"The law should respect a patient's right to decide the time and manner of their death, at least if they are 'terminally ill' and/or experiencing 'unbearable suffering'."

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(a) limits to respect for autonomy

The short answer to this argument is there is no such right. While autonomy is an important capacity, respect for autonomy has its

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limits and the law places all sorts of reasonable restrictions on our autonomy. Patients no more have the right to a lethal injection from their physician than they have to the amputation of a healthy limb. Patients have a right to refuse treatment, but that is a negative right, not a positive right; a shield, not a sword.

One key limit on respect for autonomy is the principle of the inviolability of life (or the 'sanctity of life') [3]. Laws in most countries of the world continue to prohibit a choice to be killed. This prohibition is grounded in a recognition of our fundamental equality-in-dignity, however sick or disabled we may be. As the preamble to the UN Declaration of Human Rights puts it: "Recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world" [4]. We all enjoy the 'right to life', the inalienable right not to be intentionally killed. In its 1994 report unanimously rejecting the case for VE/PAS, the UK's House of Lords Select Committee on Medical Ethics defended the prohibition on intentional killing, observing: That prohibition is the cornerstone of law and of social relationships. It protects each one of us impartially, embodying the belief that all are equal [5].

And, in any event, how many requests for VE/PAS would be truly autonomous, especially when suicidal ideation is often associated with clinical depression? The Select Committee concluded: [W]e do not think it possible to set secure limits on voluntary euthanasia…It would be next to impossible to ensure that all acts of euthanasia were truly voluntary, and that any liberalisation of the law was not abused [6].

(b) protecting the vulnerable

Concern for the vulnerable is another powerful reason for limiting individual autonomy. The Select Committee stated: We are also concerned that vulnerable people – the elderly, lonely, sick or distressed – would feel pressure, whether real or imagined, to request early death… The message which society sends to vulnerable and disadvantaged people should not, however obliquely, encourage them to seek death, but should assure them of our care and support in life [7].

Similarly, philosopher Onora O'Neill has argued: Legalising 'assisted dying' amounts to adopting a principle of indifference towards a special and acute form of vulnerability: in order to allow a few independent folk to get others to kill them on demand, we are to be indifferent to the fact that many less independent people would come under pressure to request the same [8].

It is no surprise, then, that disability groups (like 'Not Dead Yet') [9] are at the forefront of opposition to decriminalisation. They see more clearly than many that, despite the emphasis placed by euthanasia campaigners on choice, the case for VE/PAS rests fundamentally on the judgement that certain patients have lives that are not 'worth living', that they would be 'better off dead'.

(c) judging patients 'better off dead'

Typical legal proposals for decriminalisation would not allow patients obtain VE/PAS on request: patients would also have to satisfy some other criterion, such as 'unbearable suffering'. In other words, doctors would have to judge which autonomous requests to grant, and which to refuse. And how would the doctor decide, other than on the basis of a judgment that the patient would, or would not, be 'better off dead'? ("I think patient A's suffering is so severe that death would benefit her, but that patient B's suffering is insufficient to render his life no longer worth living.") Moreover, once a doctor is prepared to make that judgment, that certain patients would be 'better off dead', why shouldn't the doctor make the same judgment in relation to incompetent patients and end their suffering, by performing 'non-voluntary' euthanasia (NVE)? *If* death can be a benefit for a patient with 'unbearable suffering' who requests it, why can't it equally benefit a patient with 'unbearable suffering' incapable of requesting it? The absence of a request in the latter case is no reason for denying the 'benefit'. In short, anyone who supports VE is, logically, committed to supporting NVE.

2. Compassion

"Physicians have a duty of compassion, a duty to relieve their patients' suffering, even if that means administering a lethal injection."

(a) limits to compassion

There is a duty to relieve suffering but, like the duty to respect autonomy, it is not unlimited. It is trumped by the duty not intentionally to kill patients. This duty not to kill has formed the bedrock of professional medical ethics since the Hippocratic Oath [10]. The core vocation of the physician is to heal, to make whole, not to make dead [11].

This vocation includes a duty to alleviate suffering even if, as an unintended side-effect, life is shortened. But it rules out intentional killing. Once physicians embrace killing as a 'therapeutic' intervention, this surely endangers the trust that patients now have, that their physician will never judge them to be 'better off dead'. As Alexander Capron, the leading US health lawyer, once starkly put it, he never wanted to have to wonder whether the physician entering his room was wearing the white coat of the healer or the black hood of the executioner [12].

(b) palliative care

Not only is killing unethical; it is unnecessary. The enormous progress that has been made in palliative care, not least since the establishment of the hospice movement by Dame Cicely Saunders 50 years ago, means that no patient need suffer unbearably. Even in rare cases of refractory pain, there is the option of palliative sedation. In 2014, a poll of the Royal College of Physicians showed that over 60% of its members agreed that patients could die with dignity under the existing law, and that relaxation of the law is not needed [13].

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(c) 'unbearable suffering'?
Although euthanasia advocates typically use emotionally-charged cases of dying patients with painful symptoms to front their campaign, the reality is that after decriminalisation VE and PAS come to be condoned a much wider range of cases.

The Dutch Supreme Court decriminalised VE/PAS in 1984 (the guidelines gaining statutory force in 2002) [14]. In 1994 the Court held that purely mental suffering could qualify [15]. The Dutch government proposes to permit assisted suicide for elderly people with a 'completed life'; and even under the present law elderly people who are 'tired of life' may obtain VE/PAS, provided they can also point to some medical condition in support of their request (and what elderly person does not have some medical condition?) [16] In Belgium, the 'bracket creep' has been even faster, from VE to PAS (the euthanasia review commission endorses PAS even though the statute mentions only VE); from adults to competent minors; and from physical to mental suffering [17]. Cases such as the purblind twins [18], the distressed transsexual [19], and the grieving mother [20], have all illustrated the disturbing elasticity of the legal criteria.

Moreover, the official reports from the US State of Oregon, where PAS has been practised for almost 20 years, show that the two main reasons for requesting PAS have not been suffering but 'losing autonomy' and a decreasing ability 'to engage in activities making life enjoyable' [21].

(d) compassion for the incompetent
If compassion justifies killing suffering patients who request it, why does it not justify killing suffering patients who cannot request it? Why should compassion be confined to the competent? Yet again, we see the logical link between VE and NVE. The Dutch courts endorsed VE/PAS in 1984. Twelve years later, logically, they endorsed NVE, in the form of infanticide [22].

3. Legal Hypocrisy

"The law allows doctors to end lives by withholding/withdrawing life-prolonging treatment or by administering drugs which, as a side-effect, shorten life, so it is hypocritical of the law to prohibit them from performing VE/PAS."

Leaving aside the fact that, properly titrated, palliative drugs do not in fact hasten death [23], the short answer to this argument is that there is a cardinal ethical and legal distinction between intending and merely foreseeing the shortening of life. The US Supreme Court rejected the argument that respecting a patient's refusal of life-prolonging treatment is the same as PAS, noting that in PAS the physician intends to assist the patient's death, but this is not necessarily so with respecting a refusal of treatment [24]. Chief Justice Rehnquist noted that the fact that General Eisenhower foresaw on D-Day that he was sending many American soldiers to certain death did not mean he intended their death: his purpose was to liberate Europe from the Nazis [25].

Even the Dutch and the Belgians euthanasia laws, which reject the Hippocractic ethic against medical killing, agree that euthanasia involves intentional, and not merely foreseen, life-shortening [26].

This distinction drawn by the law and by professional medical ethics is not, then, hypocritical: it is Hippocratic.

4. A Right to Suicide

"In many countries suicide has been decriminalised. This means that the law now recognises a right to commit suicide. If there is a right to commit suicide, it should be legal to assist someone to exercise that right."

The argument is misconceived. It does not follow that decriminalisation represents a condonation of suicide, let alone recognition of a 'right to suicide'. In the UK, for example, legislators made it crystal clear that decriminalisation did not imply condonation [27]. The explanation for decriminalisation lay elsewhere.

Legislators increasingly appreciated, thanks to the development of the specialty of psychiatry, that suicidal ideation is associated with psychiatric disturbance, and that the suicidal would be better diverted from suicide by the mental health system than by the criminal justice system. Moreover, the crime stigmatised family members and led to the unfortunate consequence of prosecuting attempted suicides [28].

Moreover, assisting or encouraging suicide remained a serious crime, which confirms that there is no 'right to suicide' and that suicide remains contrary to public policy.

5. Public Opinion Polls

"Opinion polls show that a clear majority of the public want the law to allow VE/PAS. The law should reflect the will of the people."

It does seem that polls tend to show a clear majority in favour of decriminalisation. But, first, polls can be misleading. Much can depend on the phrasing of questions and on the amount of background information, if any, given to those polled. One expert committee concluded that the polls tended to reflect 'kneejerk' reactions to VE/PAS, not informed opinion [29]. Second, it may well be that the majority of the public support the restoration of capital and corporal punishment. Is that a sound argument for their restoration?

6. Legal Failure

"The law is ineffective. VE/PAS are practised illegally. Decriminalisation would bring them out into the open and subject them to effective legal control."

All criminal laws are broken to some extent, sometimes (like speeding laws) to a con-

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siderable extent, but that is hardly by itself a reason to repeal them. And there is little evidence that laws against VE/PAS are any less effective than many other criminal laws. For example, research by Professor Clive Seale found that the incidence of VE/PAS in the UK was 'extremely low' (and significantly lower than in the Netherlands, which permits them) [30]. There will be breaches of the law, to a greater or lesser extent, in different jurisdictions, depending on a range of cultural factors. This is not by itself an argument for repeal (especially when repeal is very likely to provoke a substantial increase in the incidence of VE/PAS).

Moreover, the claim that decriminalisation brings VE/PAS 'out into the open' and subjects them to 'effective legal control' is belied by the experience of the two main jurisdictions to have decriminalised VE/PAS: the Netherlands and Belgium. The Dutch in particular have carried out valuable surveys into end-of-life decision-making. Those surveys have shown that doctors have failed to report thousands of cases to the Dutch monitoring authorities. In 1990 only 20% were reported, and although more recently the proportion has grown to 80% [31], this means that around 1 in 5 cases of VE/PAS is still being illegally certified by Dutch physicians as death by 'natural causes'. Belgian surveys have disclosed that only 50% of cases are reported to the authorities [32].

It is not surprising that the Dutch law has now been criticised, twice, by the UN Human Rights Committee. In 2001 the Committee expressed concern not only about the adequacy of the regulatory system, but about the extension of the law to minors, and the practice of infanticide [33]. In 2009 it remained concerned about the extent of VE/PAS and the fact that a physician could terminate a patient's life without any independent review by a judge or magistrate to guarantee that the decision was not the subject of undue influence or misapprehension [34].

As for Oregon, there have been no comprehensive surveys, so any claims that its law is achieving effective control lack substantiation. Its so-called 'safeguards', which are even laxer than those in the Low Countries, have been aptly described by Professor Capron as "largely illusory" [35].

The regulatory mechanism in all three jurisdictions depends on self-reporting by physicians. It is, therefore, intrinsically ineffective. How many physicians are going to report that they have broken the law?

In 2015 the Supreme Court of Canada controversially created a legal right to VE/PAS [36]. In arriving at this decision, which was out of line with decisions of the Supreme Courts of the US and the UK, the court agreed with the trial judge's factual finding that the risks of decriminalisation 'can very largely be avoided through carefully designed, well-monitored safeguards' [37]. However, three judges of the Irish High Court, who later carefully reviewed the same evidence as the trial judge, rejected her finding [38]. And rightly so. Given that no jurisdiction has 'carefully designed, well monitored safeguards', and given the disturbing experience of the Low Countries, one can only guess what led the Canadian judges to their strange conclusion [39].

7. Religion

"Opposition to decriminalisation is essentially religious, and religious views should not be imposed in secular societies."

This last argument is as lame as it is frequent. The key arguments against legalisation, not least that it would undermine 'the cornerstone of law and of social relationships' by endorsing intentional killing, and that it would threaten vulnerable patients, are philosophical, not theological [40]. Moreover, many secular bodies have opposed decriminalisation. One example is the UK Parliament, which has repeatedly rejected the case for decriminalisation, most recently in 2015, when the House of Commons voted by a margin of 3-1 against a Bill to decriminalise PAS [41]. Another example is the World Medical Association itself.

Conclusion

Campaigners for VE/PAS will, on the basis of some or all of the above seven arguments, increasingly urge that the WMA should drop its opposition to VE/PAS. Those arguments are, however, unpersuasive. The WMA's opposition is as well-grounded as it is well-established.

Moreover, if the WMA were to shift to a 'neutral' position, the move would be widely perceived as at least a tacit endorsement of VE/PAS. It would be used by campaigners as a powerful lever to prise open the door to decriminalisation worldwide, decriminalisation which would not only subvert the traditional healing vocation of the medical profession, but would lead to VE/PAS becoming increasingly perceived as a part of normal medical practice, and even a patient's right, as appears to be happening in the Low Countries. And with VE/PAS transformed from a crime to a 'treatment', doctors would be expected to deliver it, or at least to refer patients to colleagues prepared to do so. The recent call by two leading advocates of decriminalisation that doctors in Canada be legally required to refer patients, and for students with objections to referral to be denied admission to medical school [42], is but a foretaste of what medical professionals worldwide can expect if the law in their countries is relaxed.

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Professor John Keown,
MA, DPhil, PhD, DCL
Kennedy Institute of Ethics
Georgetown University
E-mail: ijk2@georgetown.edu

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One Health and Antimicrobial Resistance


Caline Mattar


Ana Sofia Ore


Steen K. Fagerberg


Reshma Ramachandran


Wunna Tun


Elizabeth Wiley


Helena J. Chapman

Introduction

Antimicrobial Resistance (AMR) is a growing concern globally and a significant threat to public health. It has been demonstrated to be on a steady rise and new mechanisms of resistance are emerging every day, exhausting the antibiotic options currently available.

AMR has both health and economic implications. The UK Review on AMR has estimated that the costs of AMR will be staggering – by 2050 the annual death toll of AMR will surpass cancer, and the lost global production will equal the equivalent of the United Kingdom's gross domestic product (GDP) or 100 trillion USD [1].

Increasing evidence that the overuse and misuse of antibiotics in food animal production is contributing to this rise in resistance has also emerged. In November 2015, researchers in China discovered mcr-1, a gene conferring plasmid mediated resistance to colistin in pigs, which since has been found in humans as well.

The root cause of rising resistance has many facets and involves a multitude of stakeholders from different sectors, however today, an overwhelming proportion of the worldwide consumption of antibiotics is for animal use. This puts the veterinary and agricultural sector use at the essence of the fight against AMR. In May of 2015, the World Health Assembly adopted the *Global Action Plan on Antimicrobial Resistance*, which articulated five main objectives. Objective four more notably focuses on optimizing the use of antibiotics in both human and animal health [2]. At this stage of the action plan implementation, it is critical for all stakeholders to engage and commit to combat the rampant AMR threat.

The Intersection of Antimicrobial Resistance and the "One Health" Concept

Infectious pathogens, whether by endemic or epidemic trends, continue to produce significant morbidity and mortality across communities. The World Health Organization (WHO) reported that infectious diseases represented 12 million deaths (23%) in 2000 and 9.5 million deaths (17%) in 2012, of all causes of global mortality in humans [3]. These estimates may be underreported, however, since they do not account for pathogens that cause chronic diseases (e.g., rheumatic heart disease caused by *Streptococcus*) or other disease complications (e.g., hepatocellular carcinoma caused by chronic hepatitis B or C infection) [4]. As global mortality trends due to infectious diseases have declined over the past decade, public health leaders should quickly identify economic, environmental, political and social challenges encountered in disease control and form multi-sectoral collaborations to continue this downhill disease trend.

Since the 1990s, globalization has facilitated the spread of infectious diseases, especially through increased travel for humans, expanded geographic boundaries for commerce and trade for animal products and other goods, and anthropogenic changes to the physical environment such as deforestation or air and water pollution [5]. These new environments have facilitated the emergence and re-emergence of infectious diseases which add to the global health burden. These "emerging diseases" are novel pathogens or existing pathogens that have increased in number or expanded in geographic distribution within the environment [6]. Zoonotic infections, or those pathogens transmitted from animals to humans, are estimated to represent up to 75% of these emerging diseases [7]. Zoonotic disease transmission may include contact with domestic or wild animals or exposure to animal products, vectors or contaminated environments.

In order to strengthen the global control and prevention of emerging diseases, the "One Health" approach should be implemented into public health practice. Recognized since the 1800s, yet more recently coined the term, the "One Health" concept links human health, animal health and the environment. Six primary factors have been described to drive the spread of these emerging diseases: 1) human population growth and mobility (e.g., cholera, influenza A virus); 2) food production through agriculture and livestock farming (e.g., *Escherichia coli, Salmonella enterica*);

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3) wildlife trade by legal or illegal means (e.g., influenza virus); 4) environmental factors such as land use changes and manmade influences on loss of biodiversity (e.g., malaria, leishmaniasis); 5) technological advancements such as improved disease detection or unintentional or intentional release of laboratory agents (e.g., anthrax, brucellosis); and 8) poor leadership and infrastructure across public and private sectors (cholera, tuberculosis) [8; 9]. Among these factors, the common element lies in the potential of increased proximity to domestic or wild animals. First, companion animals, primarily dogs and cats, may enhance the human-animal emotional bond, but remain a threat for various zoonotic disease transmission, such as bartonellosis, giardiasis and toxoplasmosis [10]. Second, animal husbandry or caring for and managing livestock represents a significant source of food security and economic sustainability for livestock owners and families. Thus, public health programs can effectively prepare and educate their local communities about health hazards if they understand this interplay between zoonotic disease transmission and underlying cultural, economic and environmental influences related to animal contact.

AMR has been reported in emerging infectious diseases, emphasizing this intimate connection to the "One Health" concept and human, animal and environmental health [11]. More specifically, three specific challenges should be addressed. First, foodborne zoonoses are increasing in incidence and becoming more resistant to antibiotics [12]. Thus, food safety education and proper hygiene when handling domestic or livestock animals can inform communities about the health risks of food-borne zoonoses. Second, specific driving factors that influence the spread of emerging diseases in target communities should be identified [13]. Public health practitioners can then be prepared to act promptly and appropriately to reduce disease transmission or propagation to new geographic areas. Third, low- and middle-income countries may not have elaborate surveillance systems to monitor food production or veterinary health risks due to inadequate leadership, political or economic conflict, or natural disasters [14; 15]. Since complex epidemiology describes pathogen transmission in the human-animal interface, which challenges the formal assessment of AMR [16], establishing the infrastructure of the surveillance system should be a priority for the health sector. As such, by using the "One Health" approach, public health leaders can collaborate across disciplines to reduce zoonotic transmission and AMR, thereby improving disease control and prevention strategies.

Antibiotics for non-Therapeutic Use

When discussing AMR, another essential point to mention would be Antibiotics for non-therapeutic use, which is a practice peculiar to the animal sector.

Non therapeutic indications for antibiotic use in animal agriculture and aquaculture involve administering antimicrobial drugs to healthy animals for prophylaxis or growth production. Hypothesized mechanisms include a more rapid growth of animals while preventing disease. Studies have linked antibiotic induced changes to changes in metabolism, adiposity and higher fat mass [17]. In some countries gross weight of antibiotics used in animals is higher than the gross weight used in humans and the classes of antibiotics used are mostly the same [18].

There are several pathways for transmission of antibiotic resistant bacteria from food animal production to humans. These might include transmission of resistant pathogens from food animals to producers and processors, through contaminated food or animal products, environmental releases from production facilities, poor control of waste management and non-domesticated animals [19].

Clinical studies have confirmed that the use of antibiotics in agricultural settings contributes to the development and spread of resistant bacteria. In 1940, antibiotic use to increase the amount of meat produced in animals was found to be effective. This constituted the first step into widely using antibiotics as growth promoters, despite some early studies like Levy et al. [20] showing an increase in antibiotic resistance. This study tested a long course of low-dose tetracycline in chickens; this led to single drug resistance which rapidly developed into multidrug resistance that spread beyond individual animals exposed and into humans. A more recent study performed by Price et al. [21] found evidence that Methicillin-resistant *Staphylococcus aureus* (MRSA) acquired tetracycline and methicillin resistance in livestock. This has been confirmed by another study [22] which found MRSA in meat and poultry in the United States.

Many governments have taken actions into this matter. One of the first countries to address this issue was Denmark. By 1995 they banned avoparcin, one of many antibiotics used for growth promotion; this was the beginning of a series of regulations which lead to the European Union (EU) in 1998 banning feeding of antibiotics to animals that are valuable to human health. Less than 10 years later the EU banned all antibiotics and related drugs to livestock for growth promotion purposes.

Denmark also created DANMAP in 1995, their own system for monitoring antibiotic resistance in farm animals with the objective of following the outcomes of banning antibiotic drugs for growth promotion which through VETSTAT, a monitoring system which task was to gather and process records of drug use in animal herds. They also created the Yellow Card scheme which decreased the total consumption of antibiotics in pigs by implementing a monitoring system with penalties and regular visits to producers.

When measuring its effect, antimicrobial agent usage dropped and AMR for growth promotion also decreased. These actions did not have a negative effect in Danish swine and poultry production.

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Despite their efforts, the use of antibiotics for therapeutic indications in animals and an increase in meat imports makes resistance a continuing problem [23]. In 2003 a scientific assessment by the Food and Agriculture Organization and the WHO determined that the use of antibiotics in the agricultural setting is the principal contributing factor to the emergence and dissemination of AMR [24].

Many recommendations have been made to incorporate surveillance in all countries using antibiotics for non-therapeutic uses, but only a limited number of countries have complied. Monitoring in most of the EU member states is performed by the European Food Safety Authority (EFSA). Starting in 2011, a combined report with animal and human data is now being compiled.

All improvements in monitoring and regulation lead up to the concept of integrated surveillance of antimicrobial resistance in foodborne bacteria. This covers testing of bacteria from food animals, foods, environmental sources and clinically ill humans and the antibiotic resistance found during the procedures that encompass this elements. WHO has recommended the use of this integrated surveillance in all countries to monitor and control the spread of resistant bacteria in animal products [18]. One of the biggest challenges to perform and share this information globally is the lack of harmonization between reports in different countries. This is one of the objectives of the WHO Advisory Group on Integrated Surveillance of Antimicrobial Resistance (WHO-AGISAR). Their main objective being to minimize the public health impact of AMR associated with food producing animals.

The Current State of the Danish Model

Even though the Danish Ministry of Agriculture continuously focuses on the prevention of the development of AMR, several scenarios are challenging the Danish position. A major part of Danish export is based on swine production, and the demand of animal export is increasing. Increased production has led to a rise in the use of antibiotics, especially tetracyclines, which holds a central role in the treatment of animal infections in Denmark. A consequence of rising demands is an increased number of animals per area in piggeries, and hence, a higher possibility of animal-to-animal transmitted infections. This has led to a general increase in the use of broad-spectrum antibiotics, which started in 2009. Despite that, the total use of antibiotics in 2014 was 86 tonnes which is five percent lower than in 2013 when adjusted for the increased export [25]. In the past five years, the total use in swine production has been stable, and there has been a small increase in the use of antibiotics for pig finishers, but a significant decrease in the use of systematic use of cephalosporins for pigs in general. Based on these data, it is fair to conclude that Danish farmers are balancing the use of antibiotics responsibly, but that the guidance of DANMAP surveillance and regulations are critical to secure a sustainable development.

The pressure on lowering use of antibiotics has created an incentive to use zinc-based agents, such as zinc oxide or zinc chloride. These agents have been used increasingly instead of antibiotics, but most recent studies indicate that the use of zinc possesses a risk of developing MRSA strains in the treated animals [26], and are at this point being monitored carefully.

Another more direct challenge is the increasing numbers of cases of MRSA and ESBL bacterial strains in Danish piggeries where DANMAP described increases in MRSA in their 2011 report [27]. In the following years, the same agency documented several new cases of both MRSA and ESBL, and scientists documented the rise of the multidrug resistant MRSA strain ST398 [28] within the meat production facilities. Alongside this, new cases of animal-human transmitted infections appeared country wide, leading to an increasing number of deaths in the years 2013-2015, in particular due to MRSA ST398.

A series of screenings and quarantine regulations for people living in close proximity to animal production facilities was implemented, and a mandatory screening for farmers at the admission to hospitals was initiated. From October 1, 2014, it became mandatory for all Danish farmers to create and implement an approved strategy for prevention of transmissions approved by a veterinarian, and among other initiatives it became a requirement that only sick animals are to be treated with antibiotics [29].

The Danish Models has been proven to be successful in terms of creating awareness of the problem of AMR development, and the initiative implemented over the past 20 years such as the Yellow Card, new restrictive legislation, and research and surveillance have created a strong platform and tradition to battle the emerging challenges.

Conclusion

It is evident today that the issue of AMR cannot be restricted to the silo of human or animal health. At this point, it is critical for healthcare professionals, researchers and policy makers to join efforts with the veterinary and agriculture professionals, to gain a better understanding of the "One Health" approach, more specifically in the context of AMR, which is an urgent threat to global and public health. Stronger policies and innovative research to address the use of antibiotics and to explore new solutions to minimize the development of resistance in the animal and agricultural sector are needed. The World Medical Association and the World Veterinary Medicine Association have initiated this dialogue several years ago, and will continue this academic exchange during the second One Health Conference in November 2016. On the United Nations system level, a much anticipated high-level AMR meeting will occur in September 2016, with

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hope that decision makers will acknowledge the importance of a multisectoral approach to the issue at hand.

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Caline Mattar M.D,
Washington University in St Louis, St Louis, MO, USA

Ana Sofia Ore M.D,
Beth Israel Deaconess Medical Center, Boston, MA, USA

Steen K. Fagerberg, M.D,
Aarhus University, Denmark

Wunna Tun MBBS,
University of Medicine 1, Yangon, Myanmar

Reshma Ramachandran, M.D, M.P.P,
Johns Hopkins University, Baltimore, MD, USA

Elizabeth Wiley, M.D, J.D, M.P.H,
Johns Hopkins University, Baltimore, MD, USA

Helena J. Chapman M.D, M.P.H,
University of Florida, Gainesville, Florida, USA

E-mail: cmattar@wustl.edu

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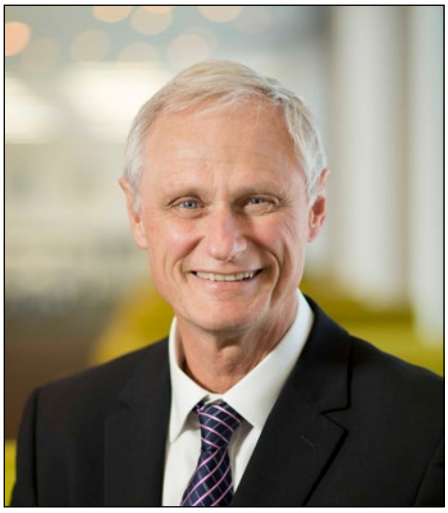
Global Development of Medical Science and Publication Opportunities and Challenges



Nicholas J. Talley

Everything changes but we live in a time of quiet revolution, a time when medical knowledge is exploding and instant communication and interconnectivity are altering our world. More than 1.8 million peer review articles are now published every year in over 28,000 scholarly journals [1]. Sweeping changes are impacting the practice of medicine and medical research, and in turn impacting the world of Journal publishing. Scientific journals have a long and proud history since the first scientific journal was published; the longest lived Journal is the *Philosophical Transactions* started by the Royal Society of London in 1665 and there are now thousands of medical journals with new ones added every week. As a front line clinician and active medical researcher, I rely on the published literature to guide my practice, update me on the latest developments and hopefully inspire me. And I rely on the Journals I publish in to disseminate the research findings with the hope that the results will influence and perhaps change my field. But the world of research and publishing as we know them is changing, and here I will discuss some of the emerging outcomes.

More and more medical research is produced and published each year. As an experienced journal editor I know authors want to publish in the most prestigious journal possible. The reasons are obvious; publishing in one of the best journals in the field is more likely to be noticed, the paper may be more likely to be read, and it adds greater weight to a promotion application, to name a few. In many parts of the world authors base their decision to submit on the journals impact factor (a metric based on the number of cited articles in the prior two years divided by the number of published citable articles in the journal); the higher the impact factor, the more prestigious the journal in the eyes of many, a fact editors recognise and fret over annually. The *New England Journal of Medicine* is top of the list with currently the world's highest impact factor (59.558 in 2015). However, the impact factor is obviously a flawed measure; even in the *New England Journal of Medicine*, only a minority of articles are highly cited which drives up the impact factor while many papers attract little attention. Further, journal editors can manipulate the metric (e.g. by publishing more or only reviews which are statistically much more likely to be cited than original research), and citations do not equal impact in terms of promoting a paradigm shift in thinking or practice change.

When I began my first Co-Editor-in-Chief role in 2003 at the *American Journal of Gastroenterology* (AJG), open access journals were in their infancy, print was still dominant, and advertising revenue was still strong. In 2016, the Editor of the *Canadian Medical Association Journal* (CMAJ) was fired reportedly because the impact factor of the Journal and submissions were both falling [2]. Richard Smith, the former editor of the *British Medical Journal (*BMJ*)* has recently blogged most if not all national Journals potentially face failing too if they do not adapt, as submissions fall because authors will only send their best work to more prestigious Journals (*blogs.bmj.com/bmj/2016/03/02*). The underlying business model of traditional Journals is indeed under threat; there is increasing competition from other Journals, and falling advertising revenue as advertisers flee from print (and Journals) to internet rivals. Print is declining although older readers still prefer it. Despite all of these trends I expect the top Journals will survive (or be the last to disappear). Journal rankings (like University rankings) matter and for Journals despite all the acknowledged limitations and flaws, the impact factor remains the most widely accepted measure authors consider and Editors live and die by.

Not everyone can publish their work in one of the top Journals. The new world of open access Journals had the noble aim of democratising research, of trying to ensure all sound research is published (even if negative or relatively uninteresting) and made available for everyone, applying an author pays model. A noble aim but flawed. By 2015, over 10,000 journals were listed in the Directory of Open Access Journals. There are now high ranking open access megajournals such as PLoS Medicine which have shaken the publishing world. But publishing high volumes negatively affects the rankings based on impact factor as for example the journal PLoS One has found out; their huge submission rates are now falling as their impact factor, once quite high, steadily declines. More and more open access Journals are opening; I now receive every single

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week multiple requests sometimes begging me to submit to a new open access Journal. Publishing in open access journals with dubious business models that may not exist tomorrow in an era of intense Darwinian style competition is a risk for emerging researchers. Predator journals have also been a serious contaminating influence; these are journals that charge a fee for publishing yet fail to carry out any or adequate peer review or careful editorial oversight, which is likely to promote the publication of false or misleading data. I predict many of the open access Journals will disappear and I fear it will take decades to undo the damage of publishing poor quality research.

The counter argument has been that journal peer review is inadequate anyway and just openly publishing all available research undertaken is a better model. I know the research into journal peer review has not provided convincing evidence flaws are all or even mostly detected although this needs looking at across a range of journals [3, 4]. Many published articles with positive findings are later shown to be incorrect [5]. However, I am still convinced strong review and editorial processes minimise obvious mistakes and improve articles, and I am committed to research into strengthening the model.

No one can now read everything published in their field today even if it is a very highly specialized one; how generalists can be expected to maintain very broad expertise is becoming more and more troublesome even though the generalist represents a key player in the delivery of best medical care. In 2015 I was appointed to be the Editor-in-Chief of a major general medical Journal globally, Australia's leading Journal, the *Medical Journal of Australia* (MJA), a Journal that publishes 22 issuers per year in print and on-line. While already an excellent journal admired by the community and government, the challenge I face is how to maximise the relevance of the Journal, better educate clinicians, disseminate and showcase clinically impactful research, accelerate change in practice and positively influence health policy. I relish the challenge. In my Journal now, for example, all original research is published in full and is available for free to all with no author charges, a challenge to the open access user pays model. This is consistent with the European Competitive Council recommendation that all publicly funded research be made freely available by 2020. We also conduct blinded peer review and routine statistical review as part of our quality processes.

One of my goals is to measure the impact of the *Medical Journal of Australia* in terms of changing practice or policy. It is generally stated it takes 17 years to translate research into practice but this is highly variable and excellent data are unavailable, plus our interest is post publication impact [6]. For example, most guidelines are simply ignored in practice in Australia and everywhere [7]. Rather than focussing on an artificial metric like the impact factor, instead our interest should be in knowing is our Journal promoting translation (because funders, governments and the public do now want to know about this today). In my view translation should be the true Journal value added metric.

In conclusion, I would suggest that science is permanently about self-correction and testing the evidence, and Journal Editors play a key gatekeeper role in the process. Any study can be wrong despite the best possible peer review, but it is the accumulation and synthesis of new knowledge that we as editors proudly contribute to disseminating. General medical journals like the *Medical Journal of Australia* play a special role in presenting and explaining research, making research and data accessible, educating, translating, engaging the public and shaping health policy. Finally, I would argue we are all still failing to help translate new medical knowledge quickly enough, and it is here as a profession we can and must aim to do better.

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Nicholas J. Talley, MD, PhD
Editor-in-Chief,
Medical Journal of Australia
Pro Vice-Chancellor and Laureate Professor,
University of Newcastle, Australia
E-mail: Nicholas.talley@newcastle.edu.au

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Southeast European Medical Forum

Andrey Kehayov

During the last seven years the Southeast European Medical Forum (SEEMF) holds large scientific medical multidisciplinary meetings every year. Georgia hold the 7th International Medical Congress of the SEEMF from the 7-10 of September. The Congress was organized jointly with the Georgian Medical Association and the University of Tbilisi and was attended by numerous medical professionals from over 20 countries: Georgia, Bulgaria, Belarus, Macedonia, Slovenia, Kazakhstan, Serbia, Latvia, Spain, Greece, etc.

Distinguished specialists and experts, such as Acad. Vladimir Ovcharov, Bulgaria, Prof. Ognyan Hadjiiski, Deputy Chairman of the Bulgarian Medical Association, Prof. Pavel Poredos, President of the Slovenian Medical Association, Prof. Giya Lobzhanidze, President of the Georgian Medical Association, Dr. Goran Dimitrov, President of the Macedonian Medical Association, Assoc. Prof. Gligor Tofoski of the Medical Faculty of the University of Skopje, Macedonia, and over a hundred of medical specialists presented reports on the latest achievements and innovations and shared experience and views in different medical fields such as surgery, oncology, neurology, pediatrics and endocrinology among others. The scientific program of the VII Congress of SEEMF was dominated by lectures, reports and presentations, striving to outline the novelties, to discuss achievements, to track the prospects of application in practice of the conclusions of fundamental discoveries and clinical trials. Impressive was the presentation of Georgian researchers from medical schools in Tbilisi, Batumi, medical centers and research institutes.

During the event a meeting of the SEEMF Board was held. The Board voted on the traditional award nominations in the field of medicine. Prof. Giya Lobzhanidze, President of the Georgian Medical Association, was honored with the award Outstanding Physician of Southeast Europe. The President of the Latvian Medical Association Dr. Peteris Apinis and Assoc. Prof. Tatiana Tserekhovich, Belarus, were awarded for their contribution to the development of public health, Prof. Alexander Tsiskaradze, Georgia, and Prof. Daniela Miladinova, Macedonia, were awarded for outstanding contribution in the field of medical science, the Medical Faculty of the Ss Cyril and Methodius University in Skopje, Macedonia, and the State University of Tbilisi were awarded for contribution to the development of medical science and SEEMF. Two new members were elected to the Board of the Organization – Acad. Vladimir Ovcharov and Assoc. Prof. Todor Cherkezov. The Board of SEEMF approved an open letter to the Albanian Order of Physicians declaring that SEEMF firmly supports the professional independence and self-governance of the medical profession and considers any kind of administrative interference in the work of professional organizations of physicians unacceptable and inappropriate and that governmental bodies, including Health Ministries, should respect the independence of such organizations and develop partnership with them.

The VII Congress of SEEMF in Batumi proved the strength and meaningfulness of cooperation between doctors and medical scientists from different countries with different specialties for the achievement of common goals – better health systems, progress in medical science, faster implementation of medical achievements in practice. Once again the SEEMF Congress reaffirmed its unique role and proved that such an international organization can significantly contribute to the health and welfare of millions of people in the region.

Today in the process of global changes in state structures and policies, more than ever SEEMF proves its constructive role and influence in the medical community – to bring together physicians and scientists and commit to the mission of being a peacemaker of the future. This is an achievement that demonstrate that the efforts of Dr. Andrey Kehayov and the SEEMF Board for 11 years now lead to success, to good results.

With the mission of peacekeepers

The VII Congress of SEEMF is further evidence of the progress of our organization, of proven benefits of the unification of medical professionals from different countries united by core values of the profession. Because only the medical profession uniquely brings together science, law, ethics. The official opening, the respect witnessed by the authorities in the autonomous Adjara with the main city of Batumi, the participation of representatives from over 20 countries – these are real facts which measure the authority of SEEMF.

Once again the variety and richness of the scientific program determine the appearance of the event. The massive presence of

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scientific speakers from Georgia, young scientists, post-graduates turned the Congress into a bright event for the country. The presence of outstanding speakers from other countries and the latest developments in the field of socially significant diseases represent impetus to improve practice. It is not by chance that the Congress has been accredited by EACCME with 15 credits.

I am very glad that young physicians and researchers attended this year. Yet we intend to work hard in this direction. Even at the meeting of the SEEMF Board we discussed the idea each year to organize a seminar or a conference for young doctors in Greece at Kos – the island of Hippocrates – and there is hardly a better place to express support for future representatives of the medical profession.

During the traditional board meeting important decisions were taken about the special SEEMF awards. The new board members – Acad. Vl. Ovcharov and Assoc. Prof. T. Cherkezov from Bulgaria – were unanimously welcomed. The award voting is extremely enjoyable because the number of nominees from different organizations and countries is growing and scientific reports are becoming more profound. And participants in the general discussion on the current problems in health systems express very wise and bold ideas. Part of the mission of SEEMF is to make these ideas available to governments and health politicians, to insist and work for their implementation in the member-countries of our organization.

In the complex global environment in terms of the ever-changing governmental structures and policies in SEEMF member countries, our organization proves its constructive role. SEEMF doctors and scientists confirm daily their mission of peacekeepers in the region and the world.

I dream of a better world!

Dr. Andrey Kehayov, SEEMF President, Bulgaria

Factor on the European map

Now we can say with pleasure that our Southeast European Medical Forum is among the fastest growing organizations and is a factor in the scientific medical community in Europe because it is a multidisciplinary structure that deals with various fields of medicine, and also discusses organizational aspects of health systems in different countries, seeking ever better solutions for millions of patients. The Seventh Congress of our forum can be described as highly successful since it confirmed its specificity by combining science, professionalism and friendship in a joint effort to better health. It is important to emphasize that SEEMF is continuously evolving – I did not even expect that so many countries will join in for achieving our goals and mission. I think it is time to promote new activities to organize seminars, workshops, conferences on specific topics.

The rapid development of our forum is a prerequisite to establish more intense connections with European scientific and medical societies and organizations to show that we live actively and physicians of Southeast Europe are working hard to get evaluation and support from European centers and networks.

Prof. Paul Poredos, Vice President of SEEMF, Slovenia

Times of Hardship

We are all satisfied because we put a lot of effort in each subsequent year to watch our forum grow and develop, including more countries, not only from Southeast Europe but also from Asia, Central Europe, the Nordic countries. So SEEMF provides a unique opportunity to share new and best medical knowledge. The congresses of the organization fulfill the mission to contribute to the development of medical science and the organization of health systems, to influence public health of millions of people in a vast area of the world. I would like to remind that SEEMF made important proposals to the World Medical Association – related to climate change, to reduction of harmful emissions in the Mediterranean region, to closing of nuclear reactors.

Today we face a new challenge – the crisis of migrants and on the one hand its impact on health activities, health budgets of receiving countries, and on the other hand – the existing centers, changes in the structure and composition of the settlements represent a danger and challenge to public health throughout the region. This global change poses new conditions and requires unconventional approaches by doctors, by health politicians, by the governments of all countries.

I am glad that what we have achieved today is far beyond the wildest expectations of the time when we created SEEMF.

Prof. Stylianos Antipas, Secretary General of SEEMF, Greece

Interviews by Dr. Andrey Kehayev, September 2016

Prof. Giya LobzhanidzePresident of the Association of Physicians in Georgia, professor at Tbilisi State University, co-chairman of the Organizing Committee of the VII Congress of SEEMF

– Dear Professor, please provide some information about the association of doctors in Georgia.

– Our association was founded in 1989 and is the first organization of this type. 23 thousand doctors work in Georgia, of which 8 thousand are our members – we are the largest organization in the country. We have regional structures. Now we are in

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Adjara, where our organization is good and strong.

The objectives of the Association are: assistance to doctors, post-graduate education, work with patients, social protection of doctors. We help our members to improve their skills abroad, assist post- and undergraduate students. We regularly organize scientific conferences and publish a journal.

– These are scientific and educational activities. And do you participate in making the healthcare policy of Georgia?

– We work as consultants, as experts. In our country we have the opportunity to interact with the government and parliament representatives. There are parliamentary committees on health and social security, we offer specific amendments, bills.

– What is your assessment of the state of health care in Georgia today?

– There are some good changes now in Georgian health care. Indeed, a few years ago all hospitals were sold – 99% of them are now in private hands, and only 3-4 hospitals remained state-owned. Therefore there is a need for the State University to build a new hospital. Today the Ministry of Health faces difficulties because little has remained under their control as everything has been sold.

Of course, in private hands hospitals thrive. But they have no interest in education and training; they do not accept undergraduate or graduate students for training. So the goal is to create university clinics – district, municipal, to build hospitals where the poor can be treated. I think that after the October elections it will be decided to create such public hospitals in large cities.

– Is there health insurance in Georgia?

– We have private companies. Four years ago the government adopted a program of universal health care to provide for all people who have no private insurance. There are changes in store, but the government has not yet decided what is to be done.

– How would you define the role of SEEMF Congress in Batumi for the development of Georgian Medical Association?

– This SEEMF Congress reached in my opinion two goals. First, we heard a lot of good lecturers from abroad; it had an extremely strong scientific program with renowned lecturers. The Congress is an incredible platform for exchange of experience. We showed all participants the scientific potential of Georgia; showed it to Europe and the world.

Moreover, there was the young doctors section at the Congress and their meetings were successful, interesting discussions were held. We will publish the most interesting presentations in the international *Georgian Medical Journal*, which becomes the official journal of SEEMF. I must underline that almost no international organization of this type has got its own journal.

– What impressed you personally apart from Professor Padilla from Seville?

– A very serious and impressive was the report of Academician Vl. Ovcharov – immunology is the future, which he outlined. In fact Acad. Ovcharov spoke about tomorrow's medicine.

Extremely serious was the report of Prof. Pavel Poredos from Slovenia – a practical dimension to the program for prevention. I think in each section there were very good presenters.

– What are your personal dreams?

– I'm a surgeon. As I said, we are building a university hospital and I expect it to open in two years time – it is located in the center of Tbilisi. The hospital will be a university hospital and of the Association, it is a joint project of achieving European standards, combining treatment, teaching and research. My dream is that undergraduate and graduate students work there. My other dream is to see that my students complete their studies successfully and become medical doctors. And the greatest dream – to see that the world becomes a better place to live.

Moreover, I have three granddaughters – I dream that they will grow up healthy and happy.

Assoc. Prof. Goran Dimitrov

Chairman of the Macedonian Medical Association:

We safeguard the honor of doctors

– What is your assessment of the past Congress?

– The SEEMF Congress held in Batumi, Georgia, was an impressive meeting at which scientific ideas were shared, and also friendships developed. Representatives of SEEMF member associations from 17 countries were present. The hosts from the Georgian Medical Association provided a wonderful and diverse scientific and cultural program.

– In general, how do you assess the scientific events organized by SEEMF?

– Each subsequent Congress is becoming better and better. I hope that the next one will be rich in scientific activities and new friendships. This year a large number of participants presented for discussion many novelties, especially in the field of surgery. For example, I listened with interest to the report of Prof. Padilla of the University of Seville on liver transplants. The number of Bulgarian participants was also big. The

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topic on a heart transplant impressed me particularly.

– What do you think should be the future of such a specific organization as SEEMF?

– I believe that in the future SEEMF will expand even more, attracting more members from Eastern and Southern Europe to share their problems and successes in medicine.

– Tell us please about the Macedonian Medical Association.

– Last year, the Macedonian Medical Association celebrated its 70th anniversary. Currently 5,500 doctors are our members. When the Association was established it included also dentists and pharmacists, but today they are already in separate structures, associations. The Association brings together 73 associations of different medical specialties that annually organize between 120 and 170 scientific events – congresses, symposia, conferences, many of which are international.

The first and main task of the Association is to retain the honor and reputation of doctors in Macedonia. We daily monitor everything that is related to the health and status of doctors in the country. We manage to keep the authority of doctors. We react in all cases in which the life of our doctors is endangered, we support them before institutions. I would add that a Medical Chamber operates in our country, which deals with legal aspects of the profession and the trade unions fight for better pay and better working conditions.

– What should be the role of the Macedonian Medical Association after 10 years?

– Such a union must continue in the future to protect the reputation and honor of doctors and take care of their education, continuing medical education and welfare.

E-mail: bulgmed@gmail.com

Paul Cibrie: Defending the Medical Profession in the Age of Internationalization

The history and memory of the professional reorganization of medicine after WWII remains understudied today and we still know little about detailed events and individuals actors including the early history of the WMA. This contribution intends to present the life and work of the French physician Paul Cibrie (1881–1965) who played an active role in the foundation of the WMA. This summary account is based on my MD thesis investigating the life and work of Paul Cibrie, poorly studied by historians and the medical community [1]. Cibrie's work was of prime importance first for reforming French medicine during the interwar period and second for the formulation and promotion of professional medical ethics by the WMA after WWII.

Paul Cibrie was born in 1881 in Dordogne. He studied medicine in Toulouse and completed his medical training in Paris. By the age of 30 he started to work for the Alliance of the French Medical Unions (USMF: Union des Syndicats Médicaux Français) and continued to do so with its successor, the French Medical Trade Union Confederation (CSMF: Confédération des Syndicats Médicaux Français). He participated in essential debates about the creation of a public healthcare system in France in the 1920s and 1930s. In this context Paul Cibrie drafted and promoted a Medical Charter that laid the foundations for medical practice in France during the rest of the 20th century based on the following principles: patient's freedom to choose their physician, professional confidentiality, liberty to set fees and direct payment by the patient without intervention of a third party for fee setting and payment, therapeutic liberty for the physician and finally control over the profession exclusively done by the profession itself.

In 1928, Paul Cibrie was designated secretary-general of the CSMF and editor-in-chief of the physicians association and labour union journal. His engagement for a social medicine went along with a stout defense of the professional and economic

Paul Cibrie

interests of French physicians. In order to keep control over professional affairs among members of the profession, he took part in the creation of the French Medical Council/College (Ordre des Médecins) under the French Vichy regime and thereby became entangled and compromised himself expressing controversial opinions supporting xenophobic and anti-Semitic ideas common within the French medical community of the time.

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Immediately after WWII, the international medical community reacted strongly to the shocking revelations about medical war crimes and Nazis atrocities, physicians from several allied countries joined to discuss the need of professional and international medical relations and proceeded with the creation of an Organizing Committee for what would become the WMA. Paul Cibrie represented France at these meetings. He pledged for the re-establishment of the Professional International Association of Physicians (APIM: Association Professionnelle Internationale des Médecins) founded in July 1926 under French leadership. French preeminence in international medical decisions supported by the country's role in APIM was challenged by the rising English and American influence in international affairs after WWII. Debates ended with the official creation of the WMA in September 1947 and Paul Cibrie became one of the two French delegates a member of the WMA Council. The initially declared main objective of the WMA was: *to promote closer ties among the national medical and among the doctors of the world […] to assist all people of the world to attain the highest possible level of health.* In concert with the British physician Charles Hill, Paul Cibrie drafted the constitution of the WMA, which was ratified at the First General Assembly in September 1947. Continuously Paul Cibrie sought to promote French interest and perceptions in the WMA's positioning and attempted to resist a medical "Marshall plan" for the WMA. Nevertheless, WMA main offices were shared between Paris and London and finally left these two cities for New-York in 1947.

Paul Cibrie contributed extensively to many committees of the WMA. First, he was in charge of the delicate question of Nazis medical war crimes. Acknowledging that the Hippocratic Oath had been abandoned by medical education and its institutions, the members of the WMA War Crimes Committee suggested a rewriting of the Hippocratic Oath and proposed to make pledging it compulsory before getting a medical degree. WMA member countries agreed to adopt the revised version of the oath, which became known under the name of Geneva Declaration. Then, the committee obliged the German Medical Association to present an official statement and apology and a public declaration about crimes committed by Nazis doctors since 1933.

Second, as president of the Ethics Committee of WMA, Paul Cibrie was a leading force in the formulation of the International Code of Medical Ethics stipulating the duties of physicians in general, their duties to patients and colleagues. Along with the Geneva Declaration, this Code of Ethics was the basis and became the introduction of the Helsinki Declaration, a major achievement of the WMA, voted in 1964, and establishing ethical principles for medical research involving human subjects.

Third, Paul Cibrie brought his prewar experience with state-run social and health insurance to the WMA Committee on Social Security Systems. After the reorganization of the French, the Vichy regime initiated, Social Security System in 1945, his engagement in the WMA committee gave Paul Cibrie the opportunity to continue to battle for a defense and promotion of the medical profession interests in face of governmental organizations and private healthcare providers and organisms at an international level. In a sense he continued within the WMA his engagement for his Medical Charter elaborated in the interwar period in the French context.

Paul Cibrie left the WMA in 1957 and continued his activities in the CSMF's Council as honorary president until one month before his passing away on 7 March 1965. Throughout his career, he displayed a complex and at times ambiguous positioning that may be characterized possibly as a "reactionary modernism": authoritarian and

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receptive, loyal and compromising, courageous and opportunistic. The height of his paradoxical personality probably is that at the same time he was a driving force and main author of the International Code of Medical Ethics and a personal friend of Pierre Laval, a notorious anti-Semitic and influential member of the Vichy government, whom Paul Cibrie provided with a cyanide capsule while in prosecution custody offering Laval the possibility of suicide in order to avoid his outstanding execution in October 1945, an attempt that nevertheless failed.

Despite his complex and compromising personality Paul Cibrie has to be considered as one of the building figures of the WMA. A tenacious member of the medical profession, he defended throughout his whole life the honor and interests of the medical profession from his engagement in French medical professional unions and promoted professional independence at an international level in the WMA. Despising party politics and the public sphere, Paul Cibrie never campaigned for a party, but he has oriented and labored professional politics of the medical profession in a lasting and highly influential way in the age of post-WWII reorganization and internationaliza-

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tion. His work at the WMA was pathbreaking and influential for the way medicine has been practiced on a daily basis eversince and on a global scale by rendering the revised Hippocratic Oath mandatory to obtain a medical degree, and by preparing the International Code of Medical Ethics and the Helsinki Declaration creating ethical rules for research with human subjects.

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Fabrice Noyer, MD
General practitioner, graduate of the University of Strasbourg, France
E-mail: fa.noyer@laposte.net

Introduction to work at COP22

Yassen Tcholakov

Lujain Aloqdmani

In November 2016, the WMA will attend the 22nd Conference of the Parties to the United Nations Framework Convention on Climate Change (COP22).

At this conference, the delegation will defend the New Delhi Declaration and other WMA policies which have to deal with climate change and environmental protection.

Following the very recent adoption of the Paris Agreement and its swift ratification by 81 parties which happened much sooner than previously expected, the agreement will come into force on 4 November 2016 This means that the first meeting of the Parties to the Paris Agreement will take place during this upcoming COP22 in Marrakech, Morocco, something unexpected. There is lot of work ahead to implement the Paris Agreement through concrete and effective climate actions that will eventually decrease and perhaps prevent the serious health impacts of climate change.

Indeed, many elements of how the world will address climate change still remain uncertain:

- despite having pledged 100 billion dollars to mitigation and adaptation, the countries of the world have not yet individually committed enough resources to meet their common pledge;
- despite having set an ambitious objective of reaching a maximal increase of 2 degrees Celsius, and even striving to limit temperature rise to 1.5 degrees, the sum of all contributions only reach 2.7 degrees even with the most optimistic previsions which assume that all conditional pledges are respected;
- while the COP21 surprisingly recognized loss and damage alongside mitigation and adaptation within the Paris Agreement, progress on defining how it will be addressed by the Warsaw International Mechanism has been slow, and many crucial pieces including financing and non-economic loss and damage (which includes health and loss of life) are still unclear;
- health remains central to climate change adaptation discussions while also having an important place in mitigation action especially in the pre-2020 agenda defined with the adoption of the Paris Agreement; how those commitments will be implemented still remains to be seen.

This year the WMA will be represented at COP22 by a delegation of 8 individuals from a wide range of National Member organisations.

You may find their biographies below.

Week 1

Lujain Aloqdmani

Lujain Alqodmani is the International Officer and the Chair of Environment Committee of Kuwait Medical Association. She is currently also the National Health NGO representative for climate change at Kuwait Environment Public Authority. Lujain is currently an Emergency Physician at Amiri

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Hospital in Kuwait. She did an internship with Climate Change Unit at the Department of Public Health and Environment at the WHO HQ in Geneva and worked greatly in the past years in climate change health policy in past UNFCCC meetings including COP18 and COP21.

Sofia Lindegren

Sofia Lindegren

Sofia Lindegren is a Medical Doctor at Karolinska University hospital. She is part of Sweden's Medical Associations working group for Climate and Health where she has been part of creating their climate policy as well as been lecturing for the public and healthcare professionals about health effects of climate changes. She is a board member of Swedish Doctors for the Environment and Swedish Younger Medical Association and will start a residency in Environmental and Occupational Health.

Mardelangel Zapata Ponze de Leon

Mardelangel Zapata Ponze de Leon

Mardelangel Zapata Ponze de Leon has finished her Medical Surgeon degree at the Catolica de Santa María University in Peru. She now works at the San Juan de Dios Home Clinic as medical and surgical assistant. She is also an associate researcher of the Cardiological Institute Research Center PREVENCION.

She works actively within the Peruvian Medical Association, at the moment she is President of the Junior Doctors Committee in her regional council. She is also an associate member of the World Medical Association, and Communications Officer of the Junior Doctors Network.

Diogo Correia Martins

Diogo Correia Martins

Diogo Correia Martins is a Public Health medical resident in Portugal, currently undertaking a Masters (MSc) degree in Public Health at the London School of Hygiene & Tropical Medicine (LSHTM). Along with his undergraduate and postgraduate studies, he has gathered extensive experience in working with student organisations in a leadership capacity, on national and international levels, as well as interacting with the UN system (WHO, UNESCO, UNFCCC, among others). Particular areas of interests include global health and sustainable development, with a special focus on health co-benefits resulting from climate change mitigation and adaptation.

Week 2

Yassen Tcholakov

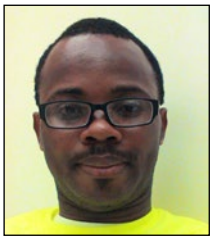
Yassen Tcholakov is a Public Health and Preventative Medicine resident at McGill University in Canada. He is the Socio-Medical Affairs Officer of the Junior Doctors' Network of the World Medical Association. Yassen has extensive experience in climate change: he has worked at the WHO Department of Public Health and Environment, his master's thesis was on the topic of climate change policy-making and he has contributed to NGO representation to the UN on climate change and sustainable development including the proceedings which led to the drafting of the Paris Agreement.

Nadim Nimeh

Nadim Nimeh

Nadim Nimeh is a medical oncologist hematologist. He has been in practice for many years and he is involved in patient care and clinical trials. He has a special interest in the effects of climate change on health, particularly as it relates to diseases of the blood and cancer. Dr. Nimeh is a physician who has a keen interest in global health issues, he is of the opinion that doctors need to know more on this subject, not only because it affects us individually, but because it affects our communities, our children and our very existence. We need to know enough details to impact the behavior of all who we faithfully and diligently serve.

Gbujie Daniel Chidubem



Gbujie Daniel Chidubem

Gbujie Daniel Chidubem is an Associate Member of World Medical Association from Africa; he is practicing as a general Oral surgeon in Nigeria. He is the Publication Director of the Junior Doctors' Network of the World Medical Association and also the Regional Executive Director/ Coordinator of Junior Doctors' of Africa. He has developed a youth based program in an NGO in which he is the chief medical volunteer, this program communicates and collaborates with rural residents on climate change giving an African perspective and supporting the WMA policy on climate change. Gbujie believes that mankind has a moral obligation to protect the earth and help ensure that every individual shares the benefits of a better environment and a healthy climate.

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Mukti Ram Shrestha

Mukti Ram Shrestha

Mukti Ram Shrestha is a public health and curative medicine expert at Tribhuvan University Institute of Medicine from where he received most of his distinguished medical degrees in the field of medical education through his dedication, devotion and loyalty to the cause of humanity. At present, he is the elected president of Nepal Medical Association. He has worked 15 years as a public health officer in different parts of Nepal under the Ministry of Health. Dr. Shrestha served as the chairman of Greenery Nepal, a non-governmental organization. This organization worked mainly in the field of climate change and biodiversity sector. He has completed the Master's Degree in Hospital Management and post graduate in obstetrics and gynaecology. His untiring, selfless effort in medical services including reproductive health and safe motherhood, public health, and clinical medicine in remote districts of Nepal is an inspiration and example for the whole medical fraternity.

Yassen Tcholakov, MD MIH,
McGill University, Canada;
E-mail: yassen.tcholakov@mail.mcgill.ca

Lujain Aloqdmani, International Officer
and the Chair of Environment Committee
of Kuwait Medical Association
E-mail: alqodmanil@kma.org.kw

Obituary

D. A. Henderson, MD, MPH
September 7, 1928 – August 19, 2016

A great loss was felt by the public health community when physician and epidemiologist D.A. Henderson, MD, MPH, who led the global smallpox eradication program, died on August 19th at the age of 87 of complications of a hip fracture in Baltimore, Maryland, USA.

Smallpox a painful and often fatal disease killed over 300 million people in the 20th century alone. During a 10 year World Health Organization (WHO) campaign, Dr. Henderson led a historic global public health effort to officially eradicate smallpox, with the last naturally acquired case occurring in 1977. The success of the smallpox eradication program led to the Expanded Program on Immunization (EPI), which has helped drastically to reduce many of the world's preventable childhood diseases through immunization.

Donald Ainslie Henderson, known as D.A. was born in 1928 in Lakewood, Ohio. He graduated from Oberlin College in 1950 and received his MD from the University of Rochester in 1954. He was a resident physician at the Mary Imogene Bassett Hospital in Cooperstown, New York, and later was a Public Health Service Officer in the Epidemic Intelligence Services (EIS) of the Communicable Disease Center (now the Centers for Disease Control and Prevention, CDC). He earned a Masters in Public Health in 1960 from the Johns Hopkins School of Hygiene and Public Health (now the Johns Hopkins Bloomberg School of Public Health).

In the 1950s and 1960s, Dr. Henderson was at the CDC, where he served as the chief of the EIS before being asked to head the WHO global smallpox eradication campaign in 1966. After the successful eradication of smallpox he became the Dean of the Johns Hopkins School of Public Health, then following the 2001 United States anthrax attacks, an advisor and director of the Office of Public Health Emergency Preparedness in Washington, D.C. In 1998 he founded the Johns Hopkins Center for Civilian Biodefense Strategies, which is now the Center of Biosecurity, University of Pittsburg Medical Center where he was the distinguished scholar.

As an expert on bioterrorism, Dr. Henderson headed the scientific program at the World Medical Association General Assembly in Washington, DC, in 2002, speaking about the past and future realities of bioterrorism, and about the dangers of smallpox as a bioweapon. During that General Assembly, the WMA adopted the Declaration of Washington on Biological Weapons.

Dr. Henderson was a firm and vocal advocate that the World Health Assembly destroy the remaining smallpox virus stockpiles remaining in the United States and Russian Federation to reduce the risks associated with bioterrorism. Dr. Henderson served as an expert advisor to the Junior Doctors Network in a proposed policy on the 'destruction of the smallpox virus,' which will be presented at the WMA General Assembly in Taiwan in October.