Health in the Arab world: a view from within 4

Changing therapeutic geographies of the Iraqi and Syrian wars

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The health consequences of the ongoing US-led war on terror and civil armed conflicts in the Arab world are much more than the collateral damage inflicted on civilians, infrastructure, environment, and health systems. Protracted war and armed conflicts have displaced populations and led to lasting transformations in health and health care. In this report, we analyse the effects of conflicts in Iraq and Syria to show how wars and conflicts have resulted in both the militarisation and regionalisation of health care, conditions that complicate the rebuilding of previously robust national health-care systems. Moreover, we show how historical and transnational frameworks can be used to show the long-term consequences of war and conflict on health and health care. We introduce the concept of therapeutic geographies—defined as the geographic reorganisation of health care within and across borders under conditions of war.

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Introduction

War is a global health problem.[1] The repercussions of war go beyond death, injury, and morbidity. The effects of war are long term, reshaping the everyday lives and survival of entire populations.

In this report, we assess the long-term and transnational dimensions of two conflicts: the US-led occupation of Iraq in 2003 and the ongoing armed conflict in Syria, which erupted in 2011. Our aim is to show that, although these conflicts differ in their geopolitical contexts and timelines, they share similarities in terms of the effects on health and health care. We analyse the implications of two intertwined processes—the militarisation and regionalisation of health care. In both Syria and Iraq, boundaries between civilian and combatant spaces have been blurred. Consequently, hospitals and clinics are no longer safe havens. The targeting and misappropriation of health-care facilities have become part of the tactics of warfare. Simultaneously, the conflicts in Iraq and Syria have caused large-scale internal and external displacement of populations. This displacement has created huge challenges for neighbouring countries that are struggling to absorb the health-care needs of millions of people.

In describing the consequences of these conflicts, we introduce the term therapeutic geographies—the geographic reorganisation of health care within and across borders under conditions of war. Our analysis shows the need to use historical and transnational frameworks to understand the complex and long-term health consequences of contemporary wars and the challenges to those involved in providing health care in the Arab world.

Militarisation of health care

War in the Arab world

War has played a central part in shaping the modern history of the Arab world and the broader Middle East. Since the formation of modern nation-states under competing imperial powers, the region has endured colonial, anti-colonial, and civil wars, and long-term conflicts.[2] Since Sept 11, 2001, the Arab world has been one of the regions worst affected by the USA's continued war on terror.[3] In addition to military operations in Iraq and Afghanistan, the US military has coordinated air strikes and drone attacks in several other countries. According to war geographer Derek Gregory, the recent US-led wars have contributed to the "increased militarisation of the planet" and have produced a sense of permanent and pervasive war.[4] The region has also had a proliferation of urban armed conflicts since the Arab revolts. These wars and conflicts have led to unprecedented large-scale movement of populations within and across national borders to seek security and health care elsewhere.[5]

The war on terror has contributed to a rise in anti-western sentiments and the proliferation of military, paramilitary, and terrorist violence.[6] With US military forces entering private homes and other safe shelters and refuges in search of insurgents, the differentiation between civilians and combatants has become blurred. Moreover, it is increasingly difficult to distinguish the war on terror from the recent armed conflicts arising from the Arab revolts. The rhetoric of the war on terror is used by different Arab states to justify the repression of populations by governments.[7,8] Different regimes, including in Iraq, Syria, Saudi Arabia, Bahrain, and Egypt, continue to frame the use of repressive military and police force as a necessary part of the war on terror.

Many recent conflicts in the Middle East have taken place in urban settings, and have involved various state, non-state, and foreign stakeholders (table 1). Conflicts have also been associated with increases in ethnic and religious tensions and civilian casualties, and a breakdown of state authority.[12] The involvement of regional powers—eg, Iran and Turkey, has complicated the conflicts.[11] High-income states of the Persian Gulf have played important parts in ameliorating and provoking violence through media control, financial support, and mediation of disputes through diplomacy.[13] Additionally, militant transnational networks, such as al-Qaeda, Al-Nusra Front, and the Islamic State of Iraq and the Levant, continue to increase their recruitment and operations.[11]

The effect of such conflicts in the Middle East on health care has been immense. Researchers have investigated

	Duration	Stakeholders		
		Global	Regional	Local
Iraq[9,10]				
Gulf War	7 months: August, 1990, to February, 1991	Coalition forces were from Australia, Canada, France, the UK, and the USA	Coalition forces were from Egypt, Saudi Arabia, United Arab Emirates, Qatar, and Kuwait	Iraqi armed forces
UN sanctions	13 years: 1990–2003	UN Security Council, multinational interception force (organised and led by USA to enforce sanctions)	..	..
Invasion and occupation	9 years and 9 months: March, 2003, to December, 2011	Coalition forces were from the USA, the UK, and Australia	Supported coalition forces were from Kuwait (initial invasion made from Kuwait)	Supported coalition forces were the Kurdish army. Opposition coalition forces included Iraqi armed forces, Arab volunteers, and paramilitary groups
Syria[11]				
Civil war	Ongoing since March, 2011	Supporting the Syrian Government are Russia and China (diplomatic support) and Iran (diplomatic, monetary, intelligence, arms); opposing the Syrian Government are Turkey (main home to opposition), France, the UK, and the USA (intelligence services, weapons)	Supporting the Syrian Government are the Hezbollah (intelligence, military support), Iraq (shipping weapons); opposing the Syrian Government are Saudi Arabia and Qatar (monetary, media, arms) and the Arab League (suspended Syria from membership)	Opposing the Syrian Government are the Free Syrian Army (defected army soldiers, local militias, Jihadists from Arab countries), the Syrian Liberation Army (coalition of localised forces, mostly composed of armed Syrian civilians), and the Mujahedeen (armed forces supported by Qatar and Saudi Arabia)

Table 1: **Conflicts in Iraq and Syria: global, regional, and local stakeholders**

the immediate and long-term consequences of regional conflicts on public health and medical-care infrastructure in the region.[14–16] The rebuilding of health systems continues to present a challenge after decades of conflict.[17,18] Thus, a distinction between conflict and post-conflict cannot be drawn easily.

Militirisation of health care

A consequence of the recent wars in the region that deserves further attention and research has been the militarisation of health care—defined as the targeting and implication of medicine in warfare. The militarisation of health care follows the larger trends of the war on terror, where the boundaries between civilian and combatant spaces are broadly disrespected.

Violence against health-care facilities and professionals has been identified as a major threat to public health worldwide.[19] A wide range of agencies, including local or national non-governmental organisations (NGOs), local health-care providers, and international humanitarian bodies are put at risk under conditions of war,[20] a reality the US military has used as justification for increased military involvement in humanitarian assistance and the militarisation of aid.[21] In recognition of the various ways that health care is affected under conditions of war, researchers have emphasised security as a prerequisite for health.[22]

Building on this research, we emphasise not only the problem of violence against health care, but also that health care itself has become an instrument of violence, with health professionals participating (or being forced to participate) in torture, the withholding of care, or preferential treatment of soldiers. This militarisation of medicine and health care—a process that has rendered the boundaries between health care and warfare indiscernible—has occurred in several Middle Eastern countries. In such contexts, the neutrality of physicians and hospitals should no longer remain unquestioned.

Instances of militarisation have been reported in nearly all of the armed conflicts arising from the Arab revolts. For example, Bahrain's Salmaniya Hospital became the main site for confrontation between the state and opposition, as the police and military occupied the hospital and arrested doctors who were treating Shi'a demonstrators.[23,24] Other cases have been reported in conflicts in Libya and Egypt.[25,26] The broader effects of militarisation of health care have also been noted in the Iraqi and Syrian conflicts. Consequently, the challenge for health-care institutions is not merely to restore security, but also to rebuild the trust of society in the countries' health-care systems.

Iraq and Syria

Iraq and Syria have overlapping political histories. Both states were created after the end of the World War 1 under the mandate of the League of Nations in 1920.[27] Iraq was placed under the control of British rule, and Syria under French rule. Throughout the second half of the 20th century, the two countries were governed by repressive Arab Socialist Ba'ath party regimes. Although the Ba'ath party is thought to be a secular party that promotes an Arab nationalist ideology, in Iraq and Syria two minority groups wielded power. The socialist ideology of these regimes shaped the development of robust and effective nationalised health-care services. In both countries, ruling parties viewed health care as a political issue, central to the foundational values of the state.[28]

Although Iraq and Syria also share a border and hold certain attributes in common, the two countries differ in their geography, demographic constituency, climate, and resources. Iraq is one of the world's largest exporters of

crude oil, which has been the main driver of social and economic development. It has also had a longer period of successive wars—the Iran–Iraq war, the first Gulf War, the UN sanctions, and the 2003 invasion and occupation, which overthrew the Ba'athist regime.

Nonetheless, wars in Iraq and Syria have some common features. Urban violence, widespread involvement of militia and non-state combatants, large-scale displacement to regional countries, and international military interventions have occurred in both.[29] Because the development of health care and state-building were intertwined projects in both countries, the dismantlement of government institutions has necessarily entailed a deterioration in the health systems. Moreover, because medicine is crucial for negotiation of political power strategies during these conflicts, it has become used as a tactic of war—ie, the militarisation of health care.

The most recent war in Iraq emerged largely in urban settings. The occupation transformed neighbourhoods into war zones where the US military and their opponents clashed. The urban landscape was remodelled into securitised enclaves and no-go zones. Markets, homes, religious sites, and government buildings became targets of military operations and terrorist violence. The urban space became an experimental field of different technologies and weaponry of war and security, producing severe effects on the cities and the environment. Hospitals were not exempt from the proliferation of violence—12% were destroyed during the invasion.[30]

As the US-led invasion became a long occupation, the collapse of the Ba'thist regime and the institutionalisation of a sectarian political system enabled militias to take control of government institutions.[31] During this violent political transition, intimidation of public servants, kidnappings, and killings became the everyday norm. During the sectarian violence of 2006–07, Iraqi hospitals and the Ministry of Health (MoH) headquarters were deemed killing fields by the media.[32] Patients and doctors were kidnapped and murdered inside hospitals by militias. Both insurgents and coalition forces fired at ambulances.[30] In 2008, US missiles hit the Imam Ali General Hospital, Sadr City, and damaged 12 ambulances. Meanwhile, Iraqi soldiers detained 35 hospital staff members on suspicion of having treated Mahdi army fighters.[33]

Since 2003, Iraq has had a mass exodus of health professionals, an event largely attributable to the targeting of doctors by militias and gangs (for ransom, retribution, and political leverage), and even by patients and family members. A survey of doctors working in Iraq's emergency hospitals showed that 80% had been assaulted by patients or their family members, with 35% threatened directly with a gun.[34] In the capital, doctors were 2·3 times more likely to be exposed to violence than were those elsewhere.[35] The exodus of doctors has added to the devastation of the country's medical care and public health.[36] A study of Iraqi hospitals showed that by late 2007, the number of health professionals had decreased by 78% in Baghdad.[37] By 2006, an estimated 18 000 of Iraq's preinvasion 34 000 doctors had fled the country, 2000 had been killed, and 250 kidnapped.[38]

So far, thousands of Iraqi doctors have been dispersed throughout Europe, Jordan, and the states of the Persian Gulf. The loss of health professionals compromises the ability to rebuild the formerly robust health-care system. The exodus of health professionals, many of whom were involved in medical education, severely hampers the ability of medical schools to train a new generation of physicians.[39]

For the doctors who remain in Iraq, they must face not only insecurity, but also growing distrust towards the medical profession. Before 1991, the medical and moral authority of Iraqi health professionals was largely unblemished. Particularly since the 2003 invasion, with hospitals becoming deteriorated and no longer a safe haven, it has become increasingly common for Iraqis to question both the competence and neutrality of physicians. The unravelling of patient–doctor relationships has broader implications—across all government institutions in Iraq, the dismantlement of state infrastructure and the spread of corruption have fostered widespread distrust towards government employees.[40]

The devastating health consequences of this war continue. The 1991 Gulf War, UN sanctions period, and 2003 US-led invasion have had lasting effects on the general deteriorating level of health-care services.[41] The collapse of state authority and resulting insecurity pose long-term challenges to public health and health care, both in Iraq and the region.

In Syria, what started as an uprising worsened into a civil war spanning 2·5 years. This conflict now involves regional and international stakeholders (table 1), and has engulfed both rural and urban areas. The exact number of deaths is not known, but the UN estimates close to 100 000 deaths since the beginning of the crisis.[42] Heavy weaponry and air strikes have inflicted widespread damage and loss of life in densely populated areas. Between July, 2012, and March, 2013, close to 4500 people, mostly civilians, died as a result of air strikes.[43] Because of worsening conflict, coherent assessments of the effect on medical care and public health are very difficult.

As in Iraq, hospitals in Syria have become part of the battlefield. Both the regime's military forces and anti-government armed groups have attacked or appropriated medical facilities.[44] In areas controlled by the rebels, some hospitals have been renamed Free Syrian Army hospitals. In many hospitals, combatants have first priority in receiving care. Under such conditions, civilians have to struggle to access treatments.[45] In April, 2013, WHO maintained that 57% of public hospitals had been damaged and 36% were out of service.[46] Additionally, 40% of the country's available ambulances have been damaged.[47] Repeated air strikes on hospitals suggest that government forces have deliberately targeted these

facilities. For example, in Aleppo, in 4 months, jets launched at least eight attacks on one hospital, turning it into rubble.[43] Many ambulances transporting the injured have been obstructed by the regime forces or taken by rebels to haul weapons.

Security forces have targeted and threatened doctors who refuse to withhold care from anti-government constituents. Such tactics force health professionals to choose between saving the lives of patients and preserving their own. So far, at least 160 doctors have been killed and many hundreds have been jailed.[48,49] Orthopaedic and general surgeons have become primary targets of the military and anti-government forces because of their skills that are crucial for treating injuries. Injured people avoid assistance from state-run hospitals because of the fear of questioning, arrest, torture, or worse. Syrian hospitals and medical staff have become involved in repression and have participated in the torture of patients.[50,51]

As in Iraq, the targeting of doctors has forced health professionals to leave Syria in large numbers. For example, in Homs—one of the cities that was worst affected by the ongoing crisis—at least 50% of medical doctors had left and only three general surgeons remained after 30 months of conflict. According to a March, 2013, report, only 36 doctors are currently practising within and around the city of Aleppo compared with 5000 doctors before the start of the crisis.[52] Although the exact numbers are not known, Syrian physicians have fled to Lebanon, Turkey, and Egypt, whereas few have sought refuge in Europe.[53] Some have fled to Turkish villages near the Syrian border to provide care to anti-government fighters and civilians.[48] Meanwhile, Syrians are setting up secret field hospitals in Damascus and other cities.[54] These makeshift facilities do not have the necessary equipment and staff to address the overwhelming medical needs resulting from such large-scale conflict.

Regionalisation of health care

The deterioration and militarisation of health institutions in Iraq and Syria has exacerbated an already worsening situation: as conflicts generate large-scale movements of populations across and within borders, the distribution of health-care services that displaced populations seek and access has shifted accordingly. Increasingly, neighbouring countries such as Jordan, Lebanon, and Turkey are absorbing the health needs of displaced populations fleeing violence. No longer can the health care in Iraq and Syria be conceptualised as being confined to the borders of the state.

Conflicts in both Iraq and Syria have compelled millions of people to cross borders into regional countries (the appendix shows the geography, scale, and dynamics of displacement and mobility from both conflicts). According to the UN High Commissioner for Refugees (UNHCR) Global Trends 2012 report, Iraq was the third highest source of refugees of any country worldwide (746 400), with most refugees residing in Syria and Jordan.[5] This process of displacement added to the existing migration from Iraq to neighbouring countries that began during the 1990s, triggered by the repression of Saddam Hussein's regime and UN economic sanctions. Syria was the fourth highest source of refugees (728 500) in 2012. Moreover, both countries have large numbers of internally displaced persons, with estimates varying by source, especially for Syria.[5] According to the UNHCR's estimations, Syria has 2·0 million internally displaced persons and Iraq has 1·1 million.[55,56] However, the Internal Displacement Monitoring Centre[57] estimates more than 5·1 million internally displaced persons in Syria. Although the health needs and conditions of internally displaced persons have been particularly precarious, they are not within the scope of this report.

Importantly, Iraqi refugees particularly challenge commonly held representations of the vulnerable refugee with a low income, living in a camp, and dependent on humanitarian assistance. Displaced Iraqis in Syria and Jordan come from diverse religious, ethnic, sectarian, and socioeconomic backgrounds, especially middle-income, urban professionals.[58] These individuals typically avoid refugee camps and have instead established temporary or permanent residence in cities such as Amman or Damascus. They often have sufficient resources to continue to travel and even relocate their families to secure destinations further abroad. Many professionals travel continuously, shuttling back and forth between their country of origin and their host country. Sharing a common language, culture, and religion with host Arab countries, these migrants blend into the cities where they have resettled. As a result, this displacement remains largely invisible to international agencies and the media, although the displaced individuals contribute to reshaping the features of these neighbouring cities. The proliferation of Iraqi shops in some neighbourhoods of Amman, for example, has changed the face of these communities by making them look more Iraqi than Jordanian, but such transformations do not carry the symbolic power of refugee camps, and garner little international attention.

As of October, 2013, the conflict in Syria has displaced more than 2 264 106 people who have sought refuge in neighbouring countries and refugee camps,[59] including 14 959 Syrian refugees registered in north Africa. According to the UNHCR, the exodus of refugees was accelerated greatly during the first 5 months of 2013, with more than 1 million refugees leaving the country. Although camps in Turkey, Jordan, and Iraq host many of these refugees, most refugees have moved in with host families or into cities in Lebanon and Jordan. More than 1 million Syrian refugees are estimated to have moved to Lebanon, which had a population of only 4 million.[60] Despite attempts to register these refugees by UN agencies and international organisations, the extent of those displaced internally and externally is not known. The length of the conflict and its effect on Syrian infrastructure, including the health infrastructure, will determine the future of the people in

See Online for appendix

this latest exodus. Many more people are expected to move out of Syria to seek refuge from the violence.

The large-scale movement of populations out of Iraq and Syria is reshaping health care in the region. Neighbouring countries and international organisations have struggled to absorb the medical needs of refugees. In the past decade, the Jordanian MoH has frequently pleaded for international aid to cover the costs of providing health care to both Iraqis and Syrians. The MoH said that the influx of Syrians in Jordan's public hospitals is overwhelming the system.[61] An estimated 70% of Syrians in Jordan live outside camps and are seeking care in public and private hospitals. Syrian admissions to public hospitals increased from 4109 patients in January, 2013, to 10 330 patients in March, 2013. The Lebanese health system is based on a private model, meaning that many Iraqi and Syrian families are unable to pay the high costs of health care. According to a survey by Médecins Sans Frontières, 52% of displaced Syrians interviewed in Lebanon were unable to pay for treatments for chronic disorders.[62] Refugee camps typically provide access to basic health services, but most of the Iraqi and Syrian refugees reside within urban centres. 63% of Syrians also reported that they had not received assistance from any NGO while in Lebanon.[62]

In addition to refugees, increasing numbers of Iraqis and now Syrians travel temporarily to Jordan and Lebanon to be treated for wounds and chronic medical disorders.[63] In Iraq, thousands of patients board planes and travel to Beirut or Amman for weeks or months to seek lifesaving medical and surgical care (panel). Many patients have had to sell properties and belongings, or have borrowed money to cover such expenses. Frequent return visits, modifications of travel routes, and a process

Panel*: Hardships for Iraqi patients traveling abroad and a targeted doctor in Syria

Journalist, Najaf, Iraq

In May, 2011, a journalist noticed a growth on his side. He had examinations at two different Iraqi hospitals, where the growth was identified as benign. When the tumour started spreading to other parts of his body, the journalist became worried: "There was one on my neck, one under my armpit, and one on my heart. And no one in my family was confident in the doctors' judgment… Hospitals simply aren't the same anymore, since the wars. You can't trust their abilities." A friend advised the man to seek care at the American University of Beirut in Lebanon. Not having any money to pay for the expensive trip, his friends and family members contributed money. He arrived in Beirut in September, 2011, and was quickly diagnosed with cancer. Now, roughly 1 year later, he has gone through several rounds of chemotherapy in Beirut. He travels back and forth from Iraq to Lebanon, each time staying at the same hotel. He reflected: "The care here is better than in Iraq. But it's so hard to go back and forth. I miss my family. And we used to have hospitals that were just as good or better." The journalist's family are middle class and have spent about US$100 000 on his care in Beirut. Remembering a past era of medical excellence in Iraq with a mixture of pride and defeat, he says: "In the past, Iraqis used to come to Lebanon for tourism… now they come for treatment."

Government accountant, Baghdad, Iraq

In July, 2010, a government accountant was diagnosed with non-Hodgkin lymphoma in Iraq. He doubted the diagnosis and travelled to Beirut for confirmation. Examinations at the American University of Beirut revealed Hodgkin's lymphoma. Unable to pay for the expensive chemotherapy treatments in Beirut, he returned to Baghdad where treatment would be free. But he would not remain in Baghdad for long. He said: "After 6 months of treatment at the government hospital in Iraq, I realised I was in trouble. Tumours were spreading everywhere." He returned to Beirut in February, 2011. The same doctor who had seen him 6 months earlier delivered the news: "Your treatment in Iraq has not been effective. We need to start from scratch." The government accountant was panicking as he processed the consequences of this verdict. Above all else, he knew that finances would be a major problem. He returned to Iraq to raise funds. Over the past 1·5 years, he has gone back and forth from Iraq to Lebanon many times. Currently, he rents a small apartment in south Beirut and receives radiotherapy.

A targeted surgeon, Idlib, Syria

The surgeon had barely been out of prison for 2 weeks when his wife passed away from breast cancer. On the day of his arrest, security forces stormed his office in Idlib and detained him while he was at work. "They wanted to confirm that I hadn't treated any of those injured at a demonstration the previous Friday." He was detained for 10 days in a small cell with more than a dozen other arrestees, hit, humiliated, and then released with no apology. With ongoing heavy bombardment, the surgeon was accompanied only by the truck driver who agreed to transport his wife's body to the outskirts of the city; the surgeon buried his wife by himself. At the army checkpoint the soldier uncovered his wife's face and proceeded to question him about her death: "Not a single muscle in his face twitched as he returned the cover over her face and ordered us to move on quickly…there is no dignity for the dead anymore, and death itself has lost all sanctity." As the violence in Syria continues and casualties increase by the hundreds, a surgeon has a valuable skill and is a probable target for attack and humiliation. With the safety of his 10-year-old son in mind, the surgeon, like many other health professionals, felt his decision to leave the country was inevitable, despite the uncertainty of finding work elsewhere.

*OD and MS have undertaken more than 60 in-depth interviews with Iraqi patients (and their family members) seeking care in Lebanese hospitals. 15 of the patients have been interviewed three or more times during the course of their treatment. GAS and FMF are Lebanese and Syrian physicians, respectively, and thus have broad experience with patients and health workers expressing similar stories to those in this panel. OD's and MS's interview-based ethnographic research was approved by the institutional review board at the American University of Beirut, Beirut, Lebanon.

of trial and error to find good care contribute to increasing costs.[64] Particularly for people with chronic diseases such as cancer, patients and families travel back and forth between Iraq and Lebanon, visiting family and gathering money between successive sittings of chemotherapy.[65]

In Iraq, cross-border health-care seeking has become institutionalised through government policies. The Iraqi MoH once presided over arguably the most advanced national medical system in the Middle East. Nowadays, with deteriorated health institutions, the MoH has increasingly resorted to funding delegations of patients for complex treatments in Istanbul, Beirut, and Delhi. In Beirut, the Iraqi MoH contracted an entire ward of the Rafik Hariri Teaching Hospital. A full-time staff member at the hospital handles the periodic delegations of patients coming from Iraq.

In such contexts, the crucial question that needs to be addressed is the role of the private sector in exacerbating the inequitable access to health-care services. As Iraqis travel abroad for care, they seek both public and private hospitals in regional countries. In Lebanon, Iraqis can be found both at the high-cost, private American University of Beirut Medical Center, and the Rafik Hariri Teaching Hospital, a state-run hospital, which offers care as part of delegations funded by the Iraqi MoH.

Understanding therapeutic geographies

Scholars in the social sciences have argued that geographies are not fixed entities. This does not mean these geographies are not real, but rather that they are mapped, shaped, and defined by social, cultural, economic, and political processes.[66] As we have argued in the Iraqi and Syrian cases, the movements of populations under conditions of war have contributed to a remapping or a geographic reorganisation of health care in the region.

The importance of understanding therapeutic geographies is punctuated by the scale of conflict-related migration in the Arab world and beyond. UNHCR data from the end of 2012 showed that displacement has been at a historical high with close to 45·2 million people displaced worldwide.[5] At present, 55% of this displaced population originate from five countries—Afghanistan, Somalia, Iraq, Syria, and Sudan—all of which have been objects or potential targets of military interventions by high-income countries and protracted armed conflicts with involvement of state and non-state stakeholders. The UNHCR reports that 0·5 million Yemenis have been displaced—largely as a consequence of civil conflict in north Yemen. Libya had an estimated 550 000 internally displaced persons in early 2011, with thousands more displaced in regional countries.[67] Beyond the Arab world, civil armed conflicts in various African countries have generated mass internal population movements and cross-border displacement. The UNHCR reported 2·2 million internally displaced persons in the Democratic Republic of the Congo from recent conflicts, with roughly 70 000 crossing the border into Rwanda and Uganda.[68]

The health consequences and patterns of mobility resulting from conflict-related migration do not fit one pattern. In Sudan, the second civil war (1983–2005) and the humanitarian crisis in Darfur (2003–10) have contributed to the deaths of more than 2·3 million people, either through direct violence or as a result of war-induced famine.[69] Displacement patterns in Sudan have involved large-scale movements of rural populations into urban centres[70] and to surrounding countries—notably, this rural-to-urban displacement differs from what has been witnessed in Iraq and Syria, where predominately urban conflicts have resulted in massive displacements and demographic shifts within cities and movements of populations to neighbouring countries. Malaria, cholera, measles, meningitis, and malnutrition are all prevalent and are further compounded by the dilapidated health infrastructure.[69]

By contrast, waves of displacement from middle-income urban populations such as those in Syria and Iraq pose different kinds of health challenges (table 2). The disease burden is not mainly related to outbreaks of epidemics or malnutrition, but rather to an absence of access to secondary and tertiary care needed for the continuation of treatments for chronic diseases and injuries. Moreover, health-care delivery is complicated because urban refugees largely avoid camps.[69]

Our understanding of therapeutic geographies builds on scholarly work on conflict-related or forced migration.[72,73] No longer are migrants framed as remaining within a state-centric model of either integration (into the host country) or return (to the country of origin). The mobility of displaced persons is dynamic and multidirectional, as migrants establish connections with numerous and varied locations. Moreover, migrants seeking refuge from violence cannot be framed and presented as mere victims but as people using various strategies to acquire health care and remake their lives.[58,72,74] In emphasising these strategies, the lines between so-called forced and voluntary migration become more complex and hazy.[72]

International health organisations, such as WHO, have adapted the health systems framework to analyse the various institutions, resources, and state and non-state stakeholders meeting health needs of conflict-affected populations.[75] Although accounting for organisations involved in health service delivery, the health-systems framework has not adequately taken into consideration the implications of millions of displaced persons dispersed throughout the Middle East, with most not seeking health care in camps. Our frameworks of analysis should account for the remapping of health care and blurring of boundaries between different health systems in different countries. As exemplified in the case of the Iraqi Government contracting wards of hospitals in Lebanon, it is becoming increasingly hard to draw firm lines between different national health systems, even those that do not share a border.

Recognising this complexity, we propose the notion of therapeutic geographies as an important concept that can provide a more dynamic and transnational approach to understand global health problems and the health-care needs of war-torn populations. Addressing medical care and public health in the Arab world and other parts of the world racked by similar types of conflicts requires an awareness of the reshaping of health-care geographies, people's mobility and survival strategies, and the structural forces shaping them.

Conclusions

This report describes two interrelated processes: the militarisation and regionalisation of health care. Medicine has become both a target and an instrument of war in both Iraq and Syria. At the same time, health-care needs have become dispersed throughout the region, such that the health-care system can no longer be thought of as being confined to the borders of the state, or as operating according to a health-systems framework. In analysing the complexities of these events, we have introduced the concept of therapeutic geographies. Our approach shows that a dynamic and global perspective is needed to understand the consequences of war and conflict on health and health care.

As suggested by others,[19] attempts to provide specific recommendations to address the militarisation of health care is beyond the scope of the health-care community, and falls within the arena of law and politics, with state and militia armed forces abiding by measures ensuring the safety of the injured, patients, and health professionals alike in turbulent and war-ridden contexts. We hesitate to offer specific policy recommendations to counter the militarisation and regionalisation of health care described in this report because these concepts are not completely understood. Moreover, the large scale of the transformations in health care is greatly disproportionate to the capacity of governments and humanitarian stakeholders to devise and implement solutions. Our policy-related argument is to implore the international community to take the long-term health effect of military interventions into serious consideration, and therefore, to challenge the rhetoric of any government that wages war for allegedly humanitarian reasons. The US-led war in Iraq and the Syrian civil war have resulted in an ongoing health crisis that might never be fully appreciated or quantified. As consequences of these conflicts, the militarisation and regionalisation of health care have and will continue to result in the disruption and the loss of lives, extreme difficulties in accessing treatments, and deterioration of the patient–doctor relationship.

Building on the concept of therapeutic geographies, global health analysis of these protracted conflicts is needed to introduce new transnational methods of inquiry so that we can begin to understand, before we are able to provide answers to, health problems of populations enduring protracted and long-term conflicts. Such analyses must include the voices and experiences of populations and health professionals affected. Scholars should investigate the patterns through which medical care is sought under such conditions, or is outsourced by governments beyond the boundaries of nation-states. The needs of populations displaced by wars and conflicts extend beyond the short-term interventions of humanitarian organisations. The importance of addressing the medical and public health needs of these populations more holistically, including providing for the care of non-communicable diseases, other chronic disorders, and mental health, is crucial. More research and development of relevant and contextualised metrics are required to uncover the cost and burden incurred by the displaced populations, and the effect of this displacement on neighbouring health systems.

	Year	Iraq	Syria
Gross national income and health expenditure			
Gross national income per head (PPP international $)	2010	3370	5120
Total expenditure on health per head (international $)	2011	368·5	189·5
Total expenditure on health as percentage of GDP	2011	8·3	3·7
Population and health			
Total population (thousands)	2012	32 778	21 890
Total fertility rate	2012	4·1	3·0
Population living in urban areas (%)	2011	66%	56%
Life expectancy at birth (years)			
Both sexes	2011	69	75
Males	2011	65	73
Females	2011	72	77
Adult mortality rate (per 1000)			
Both sexes	2011	160	104
Males	2011	207	132
Females	2011	116	75
Under-5 mortality rate (per 1000 livebirths)	2012	34	15
Maternal mortality ratio (per 100 000 livebirths)	2010	63	70
Physicians per 10 000 population	2010	6	15
Distribution of years of life lost by cause (%)			
Communicable diseases	2008	35%	23%
Non-communicable diseases	2008	25%	61%
Injuries	2008	40%	16%
Non-communicable disease mortality			
Total (per 1000) (male)	2008	45·5	33·7
Total (per 1000) (female)	2008	48·8	26·0
Age-standardised death rate per 100 000			
Total non-communicable diseases (male/female)	2008	779·5/592·9	730·4/503·5
Cancer (male/female)	2008	120·6/81·7	65·7/47·2
Chronic respiratory diseases (male/female)	2008	50·6/33·0	46·5/28·8
Cardiovascular diseases and diabetes (male/female)	2008	470·7/376·1	471·7/326·1

PPP=purchasing power parity. GDP=gross domestic product.

***Table 2*: Selected demographic and health indicators for Iraq and Syria[71]**

Contributors

OD developed the concept, did literature research, gathered, analysed, and interpreted the data, and wrote the paper. MS developed the concept, did the literature research, gathered, analysed, and interpreted the data, and

wrote the paper. V-KN developed the concept, did data interpretation, and writing. FMF did data gathering, data analysis, data interpretation, and writing. GAS developed the concept, and did data interpretation. ZM did the figures and data interpretation. RG developed the concept, did data interpretation, and writing.

Conflicts of interest

We declare that we have no conflicts of interest.

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References

1 Merill S, Hodge GD. The war machine and global health: a critical medical anthropological examination of the human costs of armed conflict and the international violence industry. Lanham: AltaMira Press, 2010.

2 Tell T. State formation and underdevelopment of the Arab world. *Lancet* 2014; published online Jan 20. http://dx.doi.org/10.1016/S0140-6736(13)62548-9.

3 Duffield M. Development, security and unending war. Governing the world of peoples. Cambridge: Polity Press, 2007.

4 Gregory D. The everywhere war. *Geogr J* 2011; **177:** 238–50.

5 UN High Commissioner for Refugees. Displacement: the new 21st century challenge. UNHCR Global Trends, 2012. http://unhcr.org/globaltrendsjune2013/UNHCR%20GLOBAL%20TRENDS%202012_V05.pdf (accessed Sept 29, 2013).

6 Koechler H. The war on terror, its impact on the sovereignty of states, and its implications for human rights and civil liberties. International Progress Organization, 2002. http://i-p-o.org/koechler-war-on-terror-paper-manila.pdf (accessed Sept 29, 2013).

7 Ulutas U, Amrov S. The Arab Spring and the appropriation of the "war on terror". *Middle East Monitor* (UK), Aug 29, 2013. http://www.middleeastmonitor.com/articles/middle-east/7116-the-arab-spring-and-the-appropriation-of-the-qwar-on-terrorq (accessed Sept 29, 2013).

8 Abu-Rish Z. From Revolution to War on Terror: Reflection on Post-3 July Egypt. *Jadaliyya*, Aug 21, 2013. http://www.jadaliyya.com/pages/index/13737/from-revolution-to-war-on-terror_reflections-on-po (accessed Sept 29, 2013).

9 Hoskins E. Public health and the Persian Gulf war. In: Leby BS, Sidel VW, eds. War and public health. Oxford: Oxford University Press, 1993.

10 Burkle FM, Noji EK. Health and politics in the 2003 war with Iraq: lessons learned. *Lancet* 2004; **364:** 1371–75.

11 Ryan C. The new Arab cold war and the struggle for Syria. Washington, DC: Middle East Research Information Project, 2012. http://www.merip.org/mer/mer262/new-arab-cold-war-struggle-syria (accessed Dec 2, 2012).

12 Newman E. The 'New Wars' debate: a historical perspective is needed. *Secur Dialogue* 2004; **35:** 173–89.

13 Hassan H. Syria: the view from the Gulf States. *European Council on Foreign Relations* (London), June 13, 2013. http://ecfr.eu/content/entry/commentary_syria_the_view_from_the_gulf_states135 (accessed June 20, 2013).

14 WHO. Social determinants of health in countries in conflict: a perspective from the Eastern Mediterranean Region, vol 32. Cairo: WHO Regional Publications; 2008.

15 Maziak W. The crisis of health in a crisis ridden region. *Int J Public Health* 2009; **54:** 349–55.

16 Mowafi H. Conflict, displacement and health in the Middle East. *Glob Public Health* 2011; **6:** 1–16.

17 Sullivan R, McQuinn B, Purushotham A. How are we going to rebuild public health in Libya? *J R Soc Med* 2011; **104:** 490–92.

18 Furber AS, Johnstone P. Rebuilding health care in Iraq. *J Epidemiol Community Health* 2004; **58:** 890–92.

19 Coupland R, Wille C, Taback N, Regard S. Health care in danger: sixteen-country study. International Committee of the Red Cross: Geneva, 2011. http://www.icrc.org/eng/assets/files/reports/report-hcid-16-country-study-2011-08-10.pdf (accessed Nov 30, 2013).

20 Wille C, Fast L. Security facts for humanitarian aid agencies: Shifting patterns in security incidents affecting humanitarian aid workers and agencies: an analysis of fifteen years of data (1996–2010). Vevey: Insecurity Insight; 2013. http://reliefweb.int/report/world/security-facts-humanitarian-aid-agencies-shifting-patterns-security-incidents-affecting (accessed Nov 30, 2013).

21 Williamson JA. Using humanitarian aid to 'win hearts and minds': a costly failure? *International Review of the Red Cross* 2011; **93:** 1035–50.

22 Coupland R. Security, insecurity and health. *Bull World Health Organ* 2007; **85:** 181–84.

23 Médecins Sans Frontières. Health services paralyzed: Bahrain's military crackdown on patients. MSF Public Briefing Paper. April 2011. http://www.doctorswithoutborders.org/publications/reports/2011/Bahrain_BP_Final_06042011_2106_FR-EN%20LOGO.pdf (accessed Sept 29, 2013).

24 Sollom R, Atkinson H. Under the gun: ongoing assaults on Bahrain's health system. Washington, DC: Physicians for Human Rights, 2012. https://s3.amazonaws.com/PHR_Reports/Bahrain-militarization-may-2012-under-the-gun.pdf (accessed Sept 29, 2013).

25 Sollom R, Close K. Witness to war crimes: evidence from Misrata, Libya. Washington, DC: Physicians for Human Rights, 2011. https://s3.amazonaws.com/PHR_Reports/Libya-WitnesstoWarCrimes-Aug2011.pdf (accessed Sept 29, 2013).

26 Brodney M. Medical treatment under fire in Egypt's attacks on protestors. Physicians for Human Rights Blog. Aug 16, 2013. http://physiciansforhumanrights.org/blog/medical-treatment-under-fire-in-egypts-attacks-on-protesters.html (accessed Sept 29, 2013).

27 Fieldhouse DK. Western Imperialism in the Middle East, 1914–1958. Oxford: Oxford University Press, 2006.

28 Longuenesse E, Chiffoleau S, Kronfol NM, Dewachi O. Public health, the medical profession and state building: a historical perspective. In: Jabbour S, et al, eds. Public health in the Arab world. Cambridge: Cambridge University Press, 2012.

29 Haysom S. Sanctuary in the city? Urban displacement and vulnerability. London: Humanitarian Policy Group; 2013. http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8444.pdf (accessed Oct 1, 2013).

30 Rubenstein LS, Bittle MD. Responsibility for protection of medical workers and facilities in armed conflict. *Lancet* 2010; **375:** 329–40.

31 Pollack KM. The fall and rise and fall of Iraq. Doha: Middle East Memo Number 29; 2013. http://www.brookings.edu/~/media/research/files/papers/2013/07/30%20fall%20rise%20fall%20iraq%20pollack/pollack_iraq.pdf (accessed Oct 1, 2013).

32 Paley AR. Iraqi hospitals are war's new "killing fields". *The Washington Post* (USA), Aug 30, 2006. http://www.washingtonpost.com/wp-dyn/content/article/2006/08/29/AR2006082901680.html (accessed June 1, 2012).

33 UN Assistance Mission for Iraq. Human Rights Report January–June 2008. http://www.ohchr.org/Documents/Countries/IQ/UNAMI_Human_Rights_Report_January_June_2008_EN.pdf (accessed Sept 29, 2013).

34 Donaldson RI, Shanovich P, Shetty P, et al. A survey of national physicians working in an active conflict zone: the challenges of emergency medical care in Iraq. *Prehosp Disaster Med* 2012; **27:** 153–61.

35 Burnham GM, Lafta R, Doocy S. Doctors leaving 12 tertiary hospitals in Iraq, 2004–2007. *Soc Sci Med* 2009; **69:** 172–77.

36 Burnham G, Malik S, Al-Shibli AS, et al. Understanding the impact of conflict on health services in Iraq: information from 401 Iraqi refugee doctors in Jordan. *Int J Health Plann Manage* 2012; **27:** e51–64.

37 The Lancet. Morbidity and mortality among families in Iraq. *Lancet* 2008; **371:** 177.

38 Reif K. Conflict fuels Iraqi health crisis. Iraq health update. UK: Medacts; 2006. http://reliefweb.int/sites/reliefweb.int/files/resources/F583E633D715C42749257142000BC96F-med-irq-30mar.pdf (accessed Sept 29, 2013).

39 Al Mosawi AJ. Medical education and the physician workforce of Iraq. *J Contin Educ Health Prof* 2008; **28:** 103–05.

40 Batniji R, Basu S, Cammett M, et al. Political determinants of health in the Arab world. *Lancet* 2014; published online Jan 20. http://dx.doi.org/10.1016/S0140-6736(13)62185-6.

41 Al Hilfi TK, Lafta R, Burnham G. Health services in Iraq. *Lancet* 2013; **381:** 939–48.

42 Jolly D. Death toll in Syrian Civil War near 93,000, U.N. says. *The New York Times* (USA), June 13, 2013. http://www.nytimes.com/2013/06/14/world/middleeast/un-syria-death-toll.html?_r=0 (accessed June 17, 2013).

43 Human Rights Watch. Death from the skies, deliberate and indiscriminate air strikes on civilians. April 2013. http://www.hrw.org/sites/default/files/reports/syria0413webwcover_1.pdf (accessed June 10, 2013).

44 United Nations General Assembly. Report of the independent international commission of inquiry on the Syrian Arab Republic. Geneva: Human Rights Council; 2013. http://www.ohchr.org/Documents/HRBodies/HRCouncil/CoISyria/A.HRC.22.59_en.pdf (accessed Feb 20, 2013).

45 Médecins Sans Frontières. Syria two years on: the failure of international aid. http://www.doctorswithoutborders.org/publications/article.cfm?id=6669#sthash.Yys8W3bM.dpuf (accessed Sept 19, 2013).

46 WHO. Donor update: the Syrian Arab Republic. Geneva: World Health Organization; 2013. http://www.emro.who.int/images/stories/syria/Syrian_Arab_Republic_Donor_Update_9_April_2013_FINAL.pdf (accessed June 9, 2013).

47 Coutts A, McKee M, Stuckler D. The emerging Syrian health crisis. *Lancet* 2013; **381:** e06–07.

48 MacFarquhar N, Droubi H. In Syria's civil war, doctors find themselves in cross hairs. *The New York Times* (USA), March 23, 2013. http://www.nytimes.com/2013/03/24/world/middleeast/on-both-sides-in-syrian-war-doctors-are-often-the-target.html?pagewanted=all (accessed June 20, 2013).

49 The Violation Documentation Center in Syria Database 2013. http://www.vdc-sy.info/index.php/en/martyrs (accessed October, 1 2013).

50 Amnesty International. Health crisis. Climate of fear in Syria's hospitals as patients and medics targeted. London: Amnesty international; 2011. http://www.amnesty.org/en/library/asset/MDE24/059/2011/en/74190b0e-cbc4-4596-91fc-eb89863362d8/mde240592011en.pdf (accessed Nov 5, 2012).

51 Médecins Sans Frontières. Syria: medicine as a weapon of persecution. February 8, 2012. http://www.doctorswithoutborders.org/press/release.cfm?id=5755&cat=press-release (accessed Sept 5, 2012).

52 Assessment Working Group for Northern Syria. Joint rapid assessment of Northern Syria—Aleppo City Assessment. Reliefweb, 2013. http://reliefweb.int/sites/reliefweb.int/files/resources/Aleppo%20Assessment%20Report.pdf (accessed June 10, 2013).

53 WHO Regional Office for the Eastern Mediterranean. Syrian Arab Republic, Jordan, Lebanon and Iraq: Situation report (Issue 6). Geneva: World Health Organization; 2012. http://www.who.int/hac/crises/syr/syria_sitrep_18october2012.pdf (accessed Oct 30, 2012).

54 The Lancet. A medical crisis in Syria. *Lancet* 2012; **380:** 537.

55 United Nations High Commissioner for Refugees. 2013 UNHCR country operations profile—Syrian Arab Republic. http://www.unhcr.org/pages/49e486a76.html (accessed Oct 22, 2013).

56 United Nations High Commissioner for Refugees. 2013 UNHCR country operations profile—Iraq. http://www.unhcr.org/pages/49e486426.html (accessed Oct 22, 2013).

57 Internal Displacement Monitoring Centre. Syria: a full-scale displacement and humanitarian crisis with no solutions in sight. http://www.internal-displacement.org/countries/syria (accessed Oct 22, 2013).

58 Chatelard G. What visibility conceals: re-embedding refugee migration from Iraq. In: Chatty D, Finlayson B, eds. Dispossession and Displacement: Forced migration in the Middle East and North Africa. London: British Academy, 2010.

59 United Nations High Commissioner for Refugees. Syria regional refugee response. http://data.unhcr.org/syrianrefugees/regional.php (accessed Oct 22, 2013).

60 International Crisis Group. Too close for comfort: Syrians in Lebanon. Brussels: International Crisis Group; 2013. http://www.crisisgroup.org/~/media/Files/Middle%20East%20North%20Africa/Iraq%20Syria%20Lebanon/Lebanon/141-too-close-for-comfort-syrians-in-lebanon.pdf (accessed June 10, 2013).

61 WHO. Jordan says health services overstretched to capacity, seeks urgent support. Geneva: World Health Organization; 2013. http://www.emro.who.int/media/news/jordan-health-services-urgent-support.html (accessed Sept 20, 2013).

62 Médecins Sans Frontières. Misery beyond the war zone: life for Syrian refugees and displaced populations in Lebanon. NY: Médecins Sans; 2013. Frontièreshttp://www.doctorswithoutborders.org/publications/article.cfm?id=6627 (accessed Sept 18, 2013).

63 Médecins Sans Frontières. Fleeing the violence in Syria: Syrian refugees in Lebanon. NY: Médecins Sans Frontières; 2012. http://www.doctorswithoutborders.org/publications/article.cfm?id=6286&cat=special-report (accessed Nov 19, 2012).

64 Dewachi O. War and the Costs of Medical Travel for Iraqis in Lebanon. Brown University; 2013. http://costsofwar.org/sites/default/files/Medicaltraveliraq.pdf (accessed June 10, 2013).

65 Skelton M. Declines in heath and health care in Iraq: The example of cancer and oncology. Brown University; 2013. http://costsofwar.org/sites/default/files/Health_and_HealthCare1.pdf (accessed June 9, 2013).

66 Kelly PF. The geographies and politics of globalization. *Prog Hum Geogr* 1999; **23:** 379–400.

67 UNHCR. 2013 UNHCR country operations profile—Middle East and North Africa. UNHCR Global Appeal 2013. http://www.unhcr.org/pages/4a02db416.html (accessed Sept 20, 2013).

68 UNHCR. 2013 UNHCR country operations profile—Democratic Republic of the Congo. UNHCR Global Appeal 2013. http://www.unhcr.org/pages/49e45c366.html (accessed Sept 21, 2013).

69 Wakabi W. South Sudan faces grim health and humanitarian situation. *Lancet* 2011; **377:** 2167–68.

70 Pantuliano S, Assal M, Elnaiem BA, et al. City limits: urbanisation and vulnerability in Sudan. Khartoum case study. London: Humanitarian Policy Group, 2011. http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/6520.pdf (accessed April 10, 2013).

71 WHO. Global Health Observatory Data Repository. World Health Organization, 2013. http://www.who.int/gho/publications/world_health_statistics/2013/en (accessed Dec 13, 2013).

72 Monsutti A. The transnational turn in migration studies and the Afghan social networks. In: Chatty D, Finlayson B, eds. Dispossession and Displacement Forced Migration in the Middle East and North Africa. London: British Academy, 2010.

73 Zetter R. Forced migration—changing trends, new responses. Geneva: International Organization for Migration; 2012. http://www.iom.int/cms/en/sites/iom/home/what-we-do/migration-policy-and-research/migration-policy-1/migration-policy-practice/issues/october-november-2012/forced-migration--changing-trend.html (accessed Sept 17, 2013).

74 Marlowe JM. Beyond the discourse of trauma: shifting the focus on Sudanese refugees. *J Refug Stud* 2010; **23:** 183–98.

75 WHO. The WHO Health Systems Framework. Washington, DC: World Health Organization Western Pacific Region; 2013. http://www.wpro.who.int/health_services/health_systems_framework/en/index.html (accessed Sept 20, 2013).