Monographic issue

Complex emergency in Irak

Mustafa Al-Shamsi

Letter from the editors

The Emergency and Disaster Reports is a journal edited by the Unit for Research in Emergency and Disaster of the Department of Medicine of the University of Oviedo aimed to introduce research papers, monographic reviews and technical reports related to the fields of Medicine and Public Health in the contexts of emergency and disaster. Both situations are events that can deeply affect the health, the economy, the environment and the development of the affected populations.

The topics covered by the journal include a wide range of issues related to the different dimensions of the phenomena of emergency and disaster, ranging from the study of the risk factors, patterns of frequency and distribution, characteristics, impacts, prevention, preparedness, mitigation, response, humanitarian aid, standards of intervention, operative research, recovery, rehabilitation, resilience and policies, strategies and actions to address these phenomena from a risk reduction approach. In the last thirty years has been substantial progress in the above-mentioned areas in part thanks to a better scientific knowledge of the subject. The aim of the journal is to contribute to this progress facilitating the dissemination of the results of research in this field.

This monographic issue is about risk profile of complex disaster in Irak, a country located in the Middle East of South-Western Asia continent that has suffered from political unrest since its establishment due to ethno-religious factors. This result in a state of complex as well as protracted emergency that developed either rapidly in full hostility war and conflict or slowly in the eras that follow.

This monography issue gives an overview of the major conflicts that happened in the last four decades in Iraq. The period where Iraq started officially to be involved in full hostility war and conflicts whether interstates or intrastate one.

Prof. Pedro Arcos, Prof. Rafael Castro
Editors*, Emergency and Disaster Reports*
Unit for Research in Emergency and Disaster
Department of Medicine. University of Oviedo
Campus del Cristo 33006 Oviedo –Spain
www.uniovi.net/uied

Dedication

To the stars of my life; my parents

To my past, present, and future teachers

To every single Iraqi soul that shed during the conflicts

Content

Acronyms

1. **KRG** Kurdistan Regional Government
2. **IASC** Intra-Agency Standing Committee
3. **IFRCS** International Federation of Red Cross and Crescent Society
4. **UNDP** United Nation Development Program
5. **ALNAP** Active Learning Network for Accountability and Performance in Humanitarian Action
6. **ICP** Iraqi community party
7. **NDP** National Democratic Party
8. **NCRC** National Council of Revolutionary Command
9. **KDP** Kurdistan Democratic Party
10. **KPU** Kurdistan patriotic party
11. **U.S** United States
12. **IKF** the Iraqi Kurdistan front
13. **CRED** Center of Research of Epidemiology on Disasters
14. **UN** Untied Nation
15. **ISIL** Islam State In Iraq and Syria/ Levant
16. **TQFBR** Tanzim Al-Qaida fi Bilad Al-Rafidin
17. **PRIO** Peace Research Institute Oslo
18. **SCIRI** Supreme council of Islamic Revolution in Iraq
19. **MOH** Ministry of Health
20. **IBC** Iraqi Body Count
21. **DU** Depleted Uranium
22. **NTD** the neural tube defect
23. **UXO** unexploded ordnance
24. **USCR** The U.S. Committee for Refugee
25. international organization of migration
26. **IOM** internal displacement monitor center IDMC
27. **IDPs** internally displaced people
28. **NGO** non-governmental organization
29. **OCHA** The United Nation Office of Humanitarian coordination
30. **GEC** Governorate of Emergency Cell
31. **NOC** The most critical center is National Operation Center
32. **CAC** National Crisis Action Cell
33. **IMCDM** the Inter-Ministerial Committee on Disaster Management
34. **UNDP** united nation development program
35. **EPI** Expanded Program of Immunization
36. **EWARN** implement the Early Warning Alert and Response Network
37. **MOMI** The Iraqi ministry of migration and immigrant
38. **IOM** The international organization of migration
39. **GDP** Gross Domestic Product

1. Introduction

1.1 Complex Emergency

According to the Intra-Agency Standing Committee **IASC**, the complex emergency defines as a humanitarian crisis in country, region, society or community where there is total breakdown of the force of the law resulting from internal or external conflicts. While the International Federation of Red Cross and Crescent Society **IFRC** defines it as a combination of natural and man-made hazard that result in different vulnerabilities. On the other hand, the United Nation Development Program **UNDP** defines the complex emergency as form of man-made disaster in which the cause of emergency is solely bounded by political calculations. More accurate term, *Complex Political Emergency* is claimed by Active Learning Network for Accountability and Performance in Humanitarian Action **ALNAP** that defines it as a condition with complex religious, social, political, and economic background that results in breakdown of state structure, abuse of human right and possibly arm conflict that creates humanitarian needs as a result (1).

The modern state of Iraq has suffered from political unrest since its establishment due to ethno-religious factors. This result in a state of complex as well as protracted emergency that developed either rapidly in full hostility war and conflict or slowly in the eras that follow. This paper is taken account of the major conflicts that happened in the last four decades in Iraq. The period where Iraq started officially to be involved in full hostility war and conflicts whether interstates or intrastate one. This paper may serve as a guide to the future humanitarian agencies that aim to provide relief and aid work in Iraq.

1.2 Terminology

While Center of Research on Epidemiology of Disasters **CRED EM-DAT** defines the natural disaster as a situation overwhelm the local capacity and associated with 10 or more people killed. There is no one agreed definition for what is considered a conflict; different databases have a different definition for the conflict. According to ***Uppsala department of peace and conflict research,*** the following definition has been implicated in approaching a conflict or war. **Active conflict**: is a conflict that produces at least 25 battle-related death. It may be state-based, non-stated based, and one-sided actor or dyad. **War**: a conflict that results in at least 1000 death per the calendar

year; It is usually state-based. **State-based conflict**: is the conflict that involves 2 parties at least one of them is a government and produce at least 25 battle-related death per the calendar year. **Interstate conflict**: a conflict that involves at least 2 governments resulting in more than 25 battle-related death per year; its considered state based conflict. **Intrastate conflict**: a conflict between the government regime and other parties resulting in at least 25 battle-related death; it's considered as state based conflict. **Incompatibility**: is a dispute that initiated between the government regime and specific territory/ state; It is considered as a state-based violence. There may be one incompatibility over the state or several one during the given year. **Incompatibility concerning the government**: concerning change of the political system in the country; for instance replacing the central government or it composition. It is considered as state based violence. **Incompatibility concerning territory** is a form of incompatibility based conflict due to dispute on certain territory or autonomy. **One side violence**: is when the government or any organized group use the violence against civilians and result in at least 25 deaths (2).

1.3 Iraq; Geography, Demography, and Economy

Iraq is located in the Middle East of South-Western Asia continent bordered by Saudi Arabia to the south, Turkey to the north, Iran to the east, Kuwait to the southeast, Jordan to the southwest, and Syria to the west. The total area of Iraq is about 438, 317 square kilometers including 437,367 km^2 of land and 950 km^2 of water. Iraq terrain is mostly plain with few mountains in the north along the Turkish-Iranian borders and reedy marsh along the Iranian border. The weather of Iraq is mainly desert in nature experienced very dry hot wind in the summer apart from the mountain areas in the north that experience shortly snowing during winter. Estimated Iraqi population in 2017 are about 39 million. The average population density in comparison to the area is 61 per km^2. Ranging from 9 per km^2 in *Al-Anbar* province to 1490 per km^2 in *Baghdad* province. The average growth of population is 2.76. About 90% of the population are less than 54 years old age. The median age is 19 years for male and 20 years for the female. The birth rate in 2017 is 30 per 1000, and the death rate is 3.8 per 1000. 80% of the population are of Arab ethnicity and about 15% are of Kurdish ethnicity while the rest compromise Turkuman, Assyrian, Shabak, and Yazidi. Arabic and Kurdish are the official languages of the country.

Iraq is consist of 18 provinces and 3 regions. *Basra, Maysan, Dhi Qar, Al-Muthana, and Al-Qadiesyia* provinces are located in the south region. *Wasit, Najaf, Karbala, Babel, Baghdad, Diayla, Anbar, and Salah Al-Din* provinces are located in the middle. *Mosul, Kirkuk, Erbil, Sullyiamania, and Duhuk* provinces are located in the north region. *Baghdad* is the capital of Iraq while *Erbil* is the capital of Kurdistan Regional Government **KRG** in the north.

Iraq economy is 90% depends on Oil production and export. The rest is mainly from the agricultural sector such as wheat, barley, rice, vegetables, dates, cotton; cattle, sheep, and poultry. The industrial growth rate is 8.7%. The GDP per capita in 2016 was 17,000 dollar. Despite Iraq is classified as an upper middle-income country according to the World Bank, but The unemployment rate is high, and about more than 20% of population are living below poverty line (3).
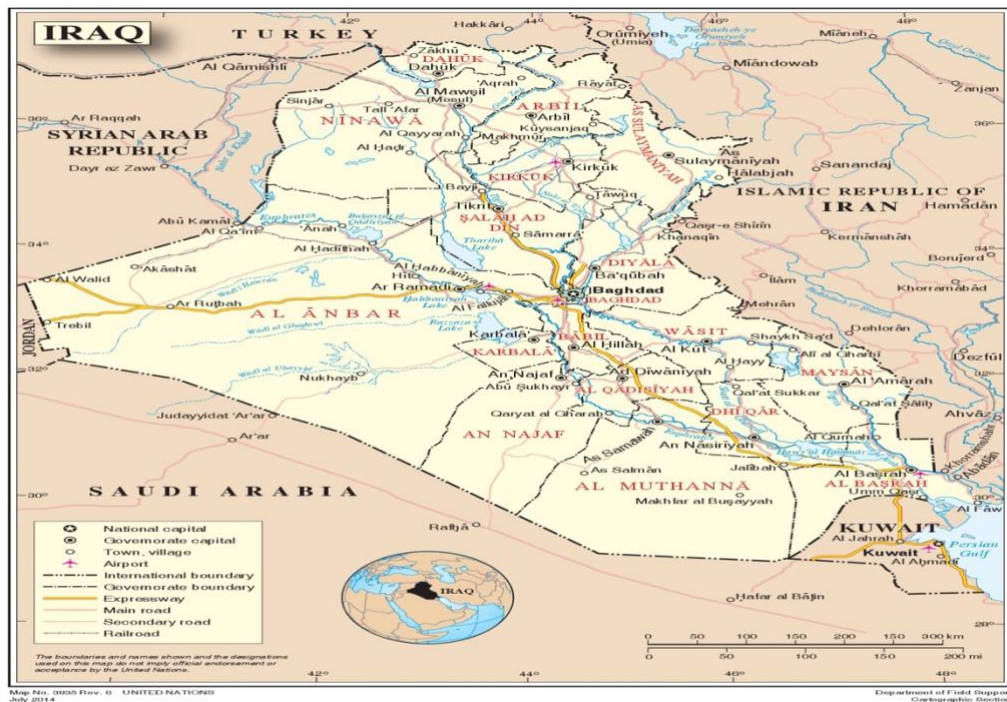
Figure 1 Iraq Map

2. Brief Historical background of Modern Iraq

2.1 The rise and fall of the monarchy 1920-1958 (*incompatibility concern government*)

Iraq was under the administration of Ottoman Empire. After the First World War, the Ottoman Empire had been defeated by the great powers; mainly Great Britain, and France. Following series of conventions between the two sides to divide the conquered lands; Britain assigned tutelage over *Mosul, Baghdad*, and *Basra* territories that become officially known as Iraq in March 1920. The British wanted to install a system of governance that ensure their dominance with the least cost. Therefore, they were looking for a person with Arabic background who participating in revolt against Ottoman and have a sense of Arabic nationalism aiming to gain a sympathy of

people to accept them as liberators. Moreover, the British needed a person from the minority—in this case, was Arab Sunni—so they could guarantee his loyalty to them. *Hashemite Amir Faisal* was their man of choice for this mission as he was an active member of revolt against Ottoman; moreover, he enjoyed a good relationship with British themselves. However, after the establishment of the monarchy, the political weather witnessed a serious of internal tensions, mainly between the Sunni Arab elites and the majority Shiites as well as Kurds who represented the poor and middle class at that time(4).

In 1932 Iraq gain full independence from Britain after signature of a treaty that guarantee the British interest in Iraq. The new British-Iraqi treaty was include the keeping of the political advisors to ensure that the British interests are secured within the governance system. Pre contra, they offered full military protection for the nascent Iraq state. The British adopted very conscious strategy to keep control over the state, for example, while they gave the power of governance for the Arab Sunni minority, they enforced the representation of the Arab Shiite tribe leaders in the parliament and favoring them over others, thus creating a 2 poles: the tribal power, and the religious power. A strategy that benefits the British from any possible majority Shiite opposition uprising. King *Faisal* caught between two realities: the aspiration of Iraqi freedom, and the reality of British power; an impossible task sought by him. While the treaty ensured Iraq independence, it does not decrease the sense of foreign power amongst many of people. King *Faisal* died at 1933, and his son king *Ghazi* took the lead of monarchy (5).

After King *Faisal* death, the political situation in Iraq took a different route. Chaos prevailed the scene. From 1936 to 1941 the country witnessed seven political coups that executed by the Iraqi army; a dangerous sign referred that the army was starting to interfere in politics of the country. This marked a critical turning in Iraq political history that continued for years thereafter. Moreover, these coups also indicated ending the period of constitutional order in Iraqi politics. Series of assassinations and violence dominated the scene predicted the ends of *Hashemite* monarchy which was wiped out entirely—In violent way, by group of army officers call themselves the *Free Officer Movement* in 1958 (6).

2.2 The birth of the republic 1958-1963 (*incompatibility concern government*)

On July 14ᵗʰ, 1958, a group of Sunni Arab officers calls themselves the *free officers* led by 2 brigadiers *Abdul Karim Qasim* and *Abdul Salam Arif* packed by three dominant parties called *Al-Ba'ath* party, *National Democratic Party* **NDP**, and *Iraqi community party* **ICP** broke the *Royal Palace* in Baghdad and liquidating violently all the members of *Hashemite* family. Following taking

over the control of radio station, general *Arif* declared the birth of the Republic of Iraq. He asked the people to mobilize in Baghdad Street in order to demonstrate the coup.

Though in reality ground power had turned from civilian Sunni in the monarchy to the military Sunni in the republic, but the new republic seemed a promising at first. All Iraq major diversities Shite Arab, Sunni Arab, Kurd as well as other minorities were assigned to government cabinet; however, this was only on a paper (5). The two pole of the republic (*Arif and Qasim*) as soon as started a conflict on the power associated with a difference in the ideology. *Arif* wanted Iraq to be part of *United Arab Republic* (Iraq, Syria, and Egypt) while *Qasim* opposed this idea asked for an independent Iraq. This struggle subsequently ended forcibly by throwing of *Arif* out of the country politics. Following this incident, the opposition against *Qasim* increased.

At that time Iraq was heading toward a complete loss of law and order. Again series of assassinations and coups started at that period. These coups were led by the *Free Officers* that had been thrown away from politics, and ended by a series of trails and executions that silenced it. Another threat that risen against achieving unity was the problem of Kurds. Kurds did not want to be part of unified Iraq, and were continuously asked for an independence; clearly not acceptable idea for pan-Arab nationalist, this, in turn, led to start a series of attack against Kurds. The Kurds by their turn started asking support from the foreign political power to gain their autonomy in the north. Clearly, this represented another significant turning point in the Iraqi's history politics—External interference in the internal country affair became a norm subsequently.

This political chaos gave good reasons for *Ba'ath* party to grow and adapt more members of the *free officers movement* to its side. Imposing *Ba'ath* power inside the military facility envisages their intention to end *Qasim's* rule. Finally, 1963 *Ba'ath* members supported by the Iraqi army rounded the ministry of defense in Baghdad for 2 days. This siege ended by execution of *Qasim* and eventually the regime to mark the beginning of new era of Ba'athist in Iraq (7).

2.3 The birth of Ba'ath Party 1963-1968 (*incompatibility concern government*)

Following the chaos of the coup. *National Council of Revolutionary Command* **NCRC** had been established in order to provide a context of work for the new regime. Ba'athist guaranteed a considerable number of seat in the new cabinet including the prime minister position that given to one of well-known Ba'athist *Ahmed Hassan Al-Baker*. This gave them the power to execute their plans—defeating the oppositions, and through the next 9 months that followed the aftermath of the coup they practiced a series of terror acts and assassinations. The result was a bloodbath involving more than 3500 members of the previous regime. During that period torture

emerged as a tool to terrorize the opponents, and became a common norm that practiced against any opposition eventually (1).

Nevertheless, Ba'athist failed to govern the country completely. A spilt between Ba'athist members made the situation more complicated. In the middle of this chaos, general *Arif* (the former member of the *Free Officer*) mobilized army units and led a coup against the government headquarter that ended successfully within few hours. Two facts deduced from this coup: the first is the role of army confirm again in controlling the political steer of the country, and the second is that the democracy is no longer available an option in the future of Iraqi politics (8).

Although the government of *Arif* was the birth of coup, but it was one of the best eras in Iraqi history. He was able to achieve a relative calm in Iraqi scene. *Arif* tried to balance the political situation by giving more freedom to the leftists, negotiating the Kurds, and decrease or even weed the representation of Ba'athist and their military power. Nevertheless, these policies were not always successful, for example the negotiation with the Kurds failed rapidly, and the strategy for abolishing the Ba'athist was depending on a series of assassination executed by Arif's secret police and the *Republican Guard*, the new army division that *Arif* founded, who later became responsible for multiple massacres of Iraqi people in the south and north of the country.

In 1966 *Arif* died by an airplane crash. His brother *Abdul Rahman Arif* elected. The relative political calm that imposed by *Arif* could not withhold for a long time. Although he tried to remove the power of army hegemony from the government regime, but he made a series of wrong steps such as releasing prominent Ba'athists from the prison—a step that marked the beginning of the end of his rule.

In July 1968, Members of allied army officers; the *Republican Guards*, and Ba'athists control the T.V station, ministry of defense, and headquarter of the Republic Guard. *Abdul Rahman Arif* forced to resign peacefully—he had no choice to refuse—again Ba'athist had the power of rule, and this time with no competition (7).

2.4 The rise of Ba'ath party 1968-1979 (*incompatibility concern government*)

Ba'athist challenged by a country in whom the average survival of any regime did not last more than a few years. Furthermore, imposing an order in a country has a different ethnic and sectarian groups was not an easy mission. Ba'athist also encountered a challenge that emerged recently—the external intrusions in Iraqi affair that support the Kurds rebels to destabilize the central government. Despite the fact that *Ba'ath* politics of terrorism were the result of prevailing political context at that period, but the degree of coercion that *Ba'ath* practiced to survive was

more than any other political force. These politics of terrorization enabled *Ba'ath* to survive and remain the only prevailing party for the next 35 years (9).

Challenging by the fear of the military coup, Ba'athist new technique was to separate the military from politics. And after several play cheese movements, they succeeded in achieving that. For the first time since decades, Iraqi politics were controlled by the civilian (Ba'athist) entirely. While there were some attempts of a coup after that, but all had been silenced violently by the new man of *Ba'ath—Saddam Hussein*. A worthy example is 1970 coup where *Saddam* was able to know the time, date, and place of the military coup, and able to trap the executors. Moreover, *Ba'ath* party made itself proof by taming the army, Shiites, and the Kurds (10).

However, a new threat had risen—*Al-Dawaa'* party a religiously oriented party that able to attract the Shiites mob. Clearly, this was a new threat that faced Sunni based *Ba'ath* party. Ba'athist fear came true when the clashes between Al-*Dawaa'* members and regime started from 1969 to 1973. However, it ended by prosecution and execution of a considerable number of *Dawaa'* party members. North, on the other hand, experienced more hostile form of confrontation between the Iraqi army and Kurdish rebels 1974-1975 ended by losing more than 60,000 causalities (10). *Ba'ath* party took the lead with no single competitor for the next 35 years.

3. The Conflict

3.1 The destruction 1979-2003

3.1.1 Government of Iraq—Government of Iran 1980-1988 (*interstate conflict, war, incompatibility concerning territory*)

Perhaps the longest twenty-century war. The Islamic revolution in Iran in 1979 increased the tension between the two sides. Now the Ba'athist secular regime facing a threat from *Khomeini* Shite radical regime that wanted to spread the Islamic revolution all over the Middle East. In no way, Iraq was the first in the line of the plan. Moreover, this tension aggravated by the uprising of long history dispute on the strategic areas located at Iraqi-Iranian borders (11).

In early of September 1980, intensive Iranian artillery started shelling the Iraqi cities. *Saddam* rushed with the concept of pan-Arabism assuming that the Arabs who live in the Persian portion would support and welcome the Ba'athist pan-Arabism ideology and would stand against *Khomeini* regime. Without any strategic planning, on September 22 of 1980, the Iraqi troops

moved to invade the Iranian side capturing *Khorramshahr* city, and imposing a siege on *Abadan* (the second largest city in Iran) (12).

The response from Iranian side was violent. In mid-1982, Iran military recaptured *Khorramshahr* forced the Iraqi troops to retreat back. *Saddam* pooled back the army and took a defensive line at the Iraqi border. In 1983, the Iranian forces took advantage and progress inside the Iraq borders. *Saddam* replied by chemical weapon attack forced them back. From 1984-1986 Iran made a considerable advancement in Iraqi marshland. In February 1986, Iran army broke through a strategic area in the south of Iraq—*Al-Faw* peninsula placing *Basra*, the major Iraq economic city under the conquer threat which simply meant complete paralysis to the regime. In mid-1988, Iraq started a heavy artillery and missile attack against Iranian side ended by taking back *Al-Faw* peninsula in April, and *Majnon* oil field in May. Increasing the tension on Iran i's side made *Khomeini* accept ceasing fire agreement that brokered by United Nation **UN** (13).

3.1.2 Government of Iraq—Kurdish rebels 1986-1989 (*intrastate, active conflict, incompatibility concerning territory*)

Since the establishment of the state of Iraq. Kurds fight continuously either for complete independence or to have self-rule autonomy. Ba'athist regime practiced different kinds of violence as well as diplomatic movement to stop the external support of Kurds. The regime was successful in destroying all form of resistance by Kurds. In fact, in the early of 1980s all the fight had been settled as both major Kurdish parties—*Kurdistan Democratic Party* **KDP** and *Kurdistan patriotic party* **KPU**—were dismantled.

The Kurds took advantage of the Iraqi-Iranian war. The **KDP** had the opportunity to find a support from the external power. The Kurdish rebels forced the central government troops to withdraw from some part in the north, thus regain the power to Kurdish parties (14). *Saddam* felt the increasing threat of Kurds on his regime. *Saddam* started the largest violent campaign in the history against Kurdish people. *Al-Anfal* (spoil of war) *campaign* started in June 1987, units of the *Republican Guard* accompanied by heavy artillery and aircraft bombarded the Kurdish villages. It is estimated that more than 4000 villages were burned and demolished to the ground. The loss of human life was even more devastating. It is estimated that more than 50,000 Kurdish lost their life including 5000 within few hours of chemical weapon attack against *Halabja* governorate. After *Al-Anfal campaign*, the Kurds rebellion lost their power completely; the rebels' armed group pulled back to the mountain. They had been completely incapacitated. However, they continued hit and run attacks against governmental troops (15).

3.1.3 Government of Iraq—Government of Kuwait/ Coalition Force 1990-1991 (*interstate conflict, war*)

Iraq exited Iranian war with a huge debt from western as well as neighboring Arab countries. Kuwait-Iraq diplomatic policy deteriorated greatly after the war. Kuwaiti debt was more than 50 billion dollars. Immediately after the war, Kuwait government claimed the debt placing the already devastated regime with an embarrassing situation. *Saddam* asked the Kuwait to waive the debt claiming that Iraq-Iran war was for the sake of defeating the Arab national sovereignty and dignity; however, the Kuwait government pressurized the regime by increasing the supply of oil to the global market causing the oil price to decline noticeably which meant threatened to Iraq's oil- dependent economy, and thus to the central pillar of Saddam's rule (16).

On August 1991, *Saddam* ordered the Iraqi troops to cross the Kuwaiti borders. With little resistance, Iraqi occupy Kuwait by the end of the day. The United States **U.S** government—who encouraged *Saddam* to occupy Kuwait—was condemned the invasion. And in November the **U.S** diplomats were successful in endeavoring *United Nation Security Council Resolution act 678* that oblige the nations to evict the Iraqi force from Kuwait if they do not withdraw by 15th of January of 1991. Accepting the conditions and withdraw the army meant only one thing to *Saddam*— suicide to the Ba'athist regime who was under the threat of internal coup (17).

The deadline was over. On 17th of January 1991, the coalition force declared the beginning of *Operation Desert Strom*. Air based attacks for 6 weeks bombarding Iraqi cities destroying the vital infrastructure thrusting back Iraq to the third world countries section ending the prosperity that enjoyed since the mid of the 1970s. The lost within Iraqi army as well as the civilians was devastating. On the ground, the coalition force defeated the Iraqi military within 48 hours ending the invasion. Nonetheless, *Saddam* and his Ba'athist regime did not affect by this defeat as most of the deceased troops were from the Kurds and Shiites. The regime reserved its strong and loyal army—the *Republican Guard (*16).

3.1.4 Government of Iraq—Shiites & Kurdish rebels 1991-1996 (*active conflict, intrastate, Incompatibility concerning the government*)

Shiites in the south of Iraq were feeling the betrayal by *Saddam* after withdrew his elite army— the *Republican Guard*, leaving them crushed in front of the coalition force in 1991. On the 15th of

February 1991, President *Bush* made a speech directed to Iraqi. He emphasized that the Iraqi citizens and army should act to force the dictator to step aside.

This speech interpreted in wrong way by Shiites whom felt supported from the **U.S.** On 28th of February 1991, the Shiites rebellion—*Al-Intifada* (uprising) broke in *Basra* city in the south of Iraq. Every Ba'athist member in the way was hunted, and executed brutally in the street by the angry mob. The rebellion extended to involve the other Shiites cities *Najaf* and *Karbala*. In the north, the *Iraqi Kurdistan front* **IKF** that involve members of **PKU** and **KDP** started supporting the Shiites in the south. And on March 19th of 1991, the Kurdistan area felled again under the control of **IKF**.

Ba'athist regime, though it was weaken by *operation desert storm*, but it did not loss its internal power. An intercepted phone call by the Iraqi intelligence removed any doubt of **U.S** support to the rebels. The **U.S** clearly stated '' we are not going to interfere'' clear statement made the way clearer to the regime to mobilize against rebellion.

Saddam moved his *Republican Guard* to the south to crash the rebels along the south Iraqi cities line. And by mid of March of 1991, all the south Iraqi cities were under control of the regime. Kurds suffered more aggressive approach. The Kurdish rebels had been forced violently out of the city centers. By mid of April 1991, more than one million Kurdish people were forced to exodus at the Turkish border. This humanitarian disaster destroyed the rebellion in the north once again (18).

3.2 The crisis 2003-2017

3.2.1 Government of Iraq—Coalition Force 2003 (*interstate, war, incompatibility concerning government*)

Following the 11/9 event in the United States. The **U.S** alleged that Ba'athist regime has supported the terrorist groups. Moreover, **U.S** claimed that Iraq has a weapon of mass destruction. The tension raised further when *Saddam* prevent the **UN** based inspectors of mass destruction weapons from entering Iraq. However, The **U.S** diplomatic mission failed to convince the **UN** to authorize war on Iraq. France, Germany, and Russia opposed the decision. This made **U.S** create what was called the *Collation of willing* that included **U.S**, Great Britain, and Australia as well as other actors.

On the 17th of March 2003. President *Bush* sent an alarming speech asking *Saddam* to leave the government or otherwise, the coalition force would start the military operations. By 20th of

March, the coalition force started wide military operation targeting the strategic points through missile and aerial strike. Small resistance to ground troop faced in the south and the west of Iraq. On 1 of May 2003, the **U.S** forces declared the end of *operation Iraqi freedom* (19).

Following the collapse of the central government in 2003. A state of loss of the law and order dominating the country. This gave a huge space to insurgent groups to access Iraq. In the following years, multiple armed groups outside the government control have raised creating a state of lawless and bloody sectarian conflicts that last for the next several years.

3.2.2 Government of Iraq—Ansar Al-Islam 2004-2007 (*active conflict, intrastate, one side violence*)

The new coalition administration failed to secure the borders of Iraq. Insurgent groups found Iraq as a fertile soil to launch the operation against the American troops. The new threat from paramilitary and militias groups was rising in a dangerous way.

Ansar Al-Islam was formed in Kurdistan region of Iraq in 2001 as a merger between two other militias. The aim of the organization was to protect the Sunni in the north of Iraq and to oppose the rule of secular Kurdish parties. There were many allegations stated that they were receiving a support from *Saddam* to fight against Kurdish parties. After 2003 they were receiving a support from *Al-Qaeda*.

After **U.S** invasion, *Ansar Al-Islam* was conducting a hit and run attacks against military troops in the west and the north of Iraq intermittently. The operation of *Ansar Al-Islam* started to target the Iraqi police since 2004 killing and injuring more than 900 causalities (20). In 2007, *Ansar Al-Islam* liquidating after join of its members with other terrorist organizations.

3.2.3 Government of Iraq—Al-Mahdi Army 2004-2008 (*active conflict, intrastate, one side violence*)

The Shiite oppositions were established since the 1980s. However, *Saddam* regime repressed these movements usually either by trail and executions campaigns or forced displacement of its members outside the country. Following 2003, these movements were reactivated again due to return of its members from outside.

Al-Mahdi Army was established in 2003 by the Shiite religious man *Moqtada Al-Sader*, a son of the previous member of the Shiite opposition leader that executed by *Saddam*' regime. *Al-Mahdi*

Army purpose, at first, was to protect the holy shrines in *Najaf* and *Karbala* cities from the attacks by insurgents. Following multiple accuses that *Al-Mahdi Army* practicing violence against Sunnis and previous Ba'athist members, the Iraqi government interfered and arrested some of its members. This made *Al-Mahdi army* declaring an operation against the government and **U.S** military in 2004. On the subsequent years, *Al-Mahdi Army* continued to fight the government indirectly until 2008. The most aggressive clashes happened from 26 to 31 march of 2008 in the southern Iraqi cities, particularly *Basra*. Over 2000 members of *Al-Mahdi Army* killed in the operation. Following this fight, *Al-Sader* agreed to accept the ceasefire. Finally, the Shiite leader decided to dissolve the army in 2008. However, it has reactivated later—under different name— to fight the **ISIS** in 2014 (21).

3.2.4 Government of Iraq—Al-Qaeda 2004-2009 (*active conflict, intrastate, one side violence*)

The political unrest and sectarian conflict that followed 2003 were tremendous. The terrorist organizations were competing for the leadership of terrorism in Iraq. Every single armed group seek supporters and declare itself as an organization with future goal using religious-based speech to gain compassion of the mobs, especially the disadvantageous Sunnis. The strongest one was what it's called *Jamma't Al-Jihad WA Al-Tawheed* (the monotheism and holy war group) that led by *Abu-Musuab Al-Zarqawi*. They declared a hostile war (jihad) against the Iraqi government and **U.S** troops in order to establish a Sunni-based autonomous state in Iraq. Later on, the group changed its title to *Tanzim Al-Qaida fi Bilad Al-Rafidin* **TQFBR** (Al-Qaeda organization in the Mesopotamia) after starting receiving direct support from *Osama Bin Laden (*Al-Qaeda leader in Afghanistan*)*.

TQFBR started receiving support from the disadvantageous Sunnis whom were members of the previous regime in the west and north of Iraq. Their activities had been increased targeting Iraqi and **U.S** troops as well as civilians. **TQFBR** has joined with several small organizations forming what it was called *Majles Shura Al-Mujahedeen fi Iraq* (Mujahidin consultative council in Iraq) in 2006. In October the same year, the consultative council declared the formation of the *Islamic State in Iraq* **IS**. Iraq witnessed unprecedented violence and sectarian conflicts which had reached its highest level since 2003 invasion.

Iraqi government initiated a wide base military operation in *Baghdad* and the north of Iraq. This operation was succeeded in evicting the terrorist members outside the urban areas except for the city of *Mosul*. Coinciding with this operation, the level of violence decreased considerably. Nevertheless, several attacks by suicidal bombing continue to take their places all over Iraq allegedly by the insurgent groups (22).

3.2.5 Government of Iraq—Islamic state 2009-2017 (*intrastate, active conflict, one side violence*)

The parliamentary election that held in 2010 created a huge vacuum in the government. No party or coalition won enough seat to create the government. This gave good chance for insurgent to raise again. Despite of the fact that the *Islamic states* **IS** had lost a considerable ground foot in the urban areas, but the **IS** members insurgency continued thereafter. Small skill attacks by car or suicide bomb had been carried out in many Iraqi cities. August 2010 has witnessed the withdrawal of **U.S** troops apart from small forces that kept to protect the **U.S** diplomatic mission. The security mission assigned to Iraqi forces. The violence re-escalated against civilians again, especially, the Shiite pilgrims in the middle region of Iraq. Huge number of people had been killed in that period by explosion attacks.

In 2013 **IS** leader *Abu-Baker Al-Baghdadi* claimed change the name of the organization to the *Islamic State in Iraq and Levant* **ISIL**. The violence took a new level of action, the Iraqi government declared starting a wide range military operation in the west and the northern cities of Iraq in cooperation with tribal members of that cities; however, this operation was not successful in achieving its target.

The violence escalated one more step rapidly, thousands of people killed through attack all over Iraq. In 2014, **ISIL** announced what is called *Caliphate state in Iraq and Levant* taking control over several Iraqi cities in the west and north of Iraq. **ISIL** continued to advance toward the south of Iraq reaching as far as *Diayla* city (23).

The Iraqi government, in response to the seizing of cities by **ISIL**, created a coalition from the Iraqi elite army supported by local *Popular Mobilization Forces* **PMF** consist mainly of Shiite members and few tribal Sunni members. The **U.S** coalition airstrike took the control from the sky. In mid-2017, the Iraqi forces succeed in re-take *Mosul* city as well as *Anbar* and *Fallujah*. Considerable advance had been made in Iraqi ground.

4. Consequences of the war and conflicts

4.1 Mortality

According to epidemiology science, the Crude Mortality Rate **CMR** and Under-Five Mortality Rate **U5MR** are the best indicators to define emergency crisis among the population in a conflict setting. And based on observation of change in trend of mortality rates before and after the crisis, the epidemiologist determines the extent of the crisis. Since the information system usually

breaks during the wars and conflicts. It becomes impossible to obtain accurate measures of **CMR** and **U5MR**; moreover, in many situations, the conflict is politicized in a way that intentionally reports data misinterpretation, and this is the case of Iraq. Many studies related to battlefield show that the Sibling method is proven to be useful in cases where it is difficult to obtain the precise number of death (24)

To ease understanding the mortality in Iraq since the 1980s. This section is divided into 3 main eras. Firstly, the 1980s which dominated by Iraq-Iran war. Secondly, the 1990s that dominated by the first Gulf War as well as the rebellion in Iraq. Thirdly, post second Gulf War era 2003. This period where there were multiple actors fight each other as well as the government in the Iraqi ground.

Firstly, the 1980s period. This decade prevailed by the long Iraq-Iran war that started in 1980. In consideration of the combat mortalities, there is no one accurate resource to depend on. Different resources give different estimates to the total number of the battle related death. According to the Peace Research Institute Oslo **PRIO** database, there were about 500,000 battle-related death from the Iraqi side (25). This number mainly involves the young age male (18-25) who composed the main frontline. However, many resources claim a different number of causalities ranging from 100,000 (11) to 200,000 (26). The more accurate study done in 2011 using sibling method reveals that the approximate number of causalities was 222,000 adult death age ranged between 15-60 (27). The attributable death was related to gunshot injury in 47% and airstrike injury 17%. Male exceeded the female death at the early period of the war, however, the percentage nearly equalized toward the end of the war.

The mortality toll through Iraq-Iran war followed a fluctuated pattern. Before 1980 the mortality rate was low as compared with the years that follow immediately. Following the brief cease of fire in mid-1980s. The death toll felled; however, it raised again as both sides moved the war theater to the cities. With the end of the war, the **CMR** decreased all over again. Following the acceptance of the final **UN** mediation cease of fire, there was an additional 25,000 death that resulted from war direct injury (27). This raised the total number of mortality related war to about 250,000 deaths.

Secondly, The 1990s period characterized by raising of violence that related to both, the invasion of Kuwait, and the rebellion against the regime in 16 out of 18 Iraqi cities. The first Gulf War (*operation desert storm*) 1990-1991 also carried debate about the exact number of death. While some reports estimated that the total number of death is range from 50,000 to about 100, 000 (28). The sibling research approach that performed in 2011 showed that the number of causalities during the war were around 84,000. 40,000 were a result of direct war injuries (27). This ambiguity regarding the exact number of causalities has several bases. The noticeable one is that the regime usually obscured the exact data for political purposes. Furthermore, a lot of

bodies had been buried in the battlefield, thus not reaching to the hospital or morgues to be accounted. This act prevents obtaining the exact number of death.

The rebellion that followed first Gulf War was mainly in the north and the south of Iraq. The situation in the north of Iraq is more devastating. From 1986 to 1991 there were a multiple attack campaigns against Kurds. The most obvious one was *Al-Anfal* campaign that lasts for several years and characterized by using of chemical weapon. It is estimated that the number of death reached 50,000 to 100,000 Kurds (29, 30). In Halbaja district, which experienced the first strike of chemical weapon attack, there were more than 5000 died within a matter of few hours according to the human right watch (31). The Kurdish revolt uprising in 1991 resulted in more than 25,000 death (30).

In the south, the exact figures of how many Shiites rebels killed are not obvious. According to **PRIO** dataset on battlefield related death (32, 33). The highest death estimate would be around 30,000 members of *Supreme Council of Islamic Revolution in Iraq* (**SCIRI**) which represented the organized group of Shiite rebels in the 1991 rebellion; however, this data does not count the non-organized members that did not riot under the umbrella of **SCIRI** which was much more than the members of **SCIRI**. The precise number of those population are still vague during southern *Al-Intifada*. According to the human right report in 1991 (34). The total number of rebels' death from both side—north and south—was 25,000 with more death in the south. There is no single reliable source of data to depend on since the regime deceived the data for political purposes and the humanitarian agencies, as well as the surveying bodies, were banned from entering Iraq following the first Gulf War.
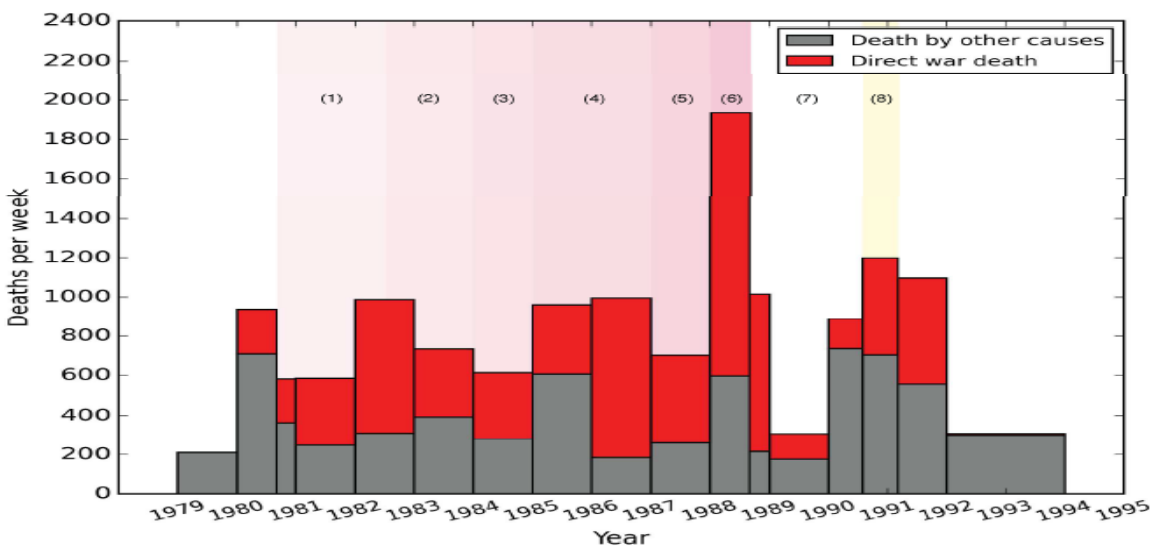

Figure 2 estimates of numbers of adult death per week in iraq, 1979-1994, by cause as reported by sibling method.
Source: Data provided by University Collaborative Iraq Mortality Study

Thirdly, The post second Gulf War era 2003. This period also carried a lot of inaccuracies regarding the mortality despite the considerable amount of the studies done in this domain. A lot of debate had been placed regarding the actual number of death. Some of **U.S** supported political resources always trying to reduce the exact number of death in order to deceive the American people who had grown a concern about the aim of Iraq invasion.

Obtaining good data in post-2003 was very challenging as much of the health infrastructure was destroyed; furthermore, the system was weakened by **UN** sanctions that imposed during the 1990s (35) Although there are five population-based surveys that had been conducted following 2003, only two of them reported violence related-death (36,37). None of them were conducted after 2008; when the violence reached its peak. In a similar way, many controversies had been elicited about them.

The first study was done by Robert et el in 2004 (38). This study collected data from household covering the period from March 2003 to September 2004. The estimated overall mortality was 98,000 people since the invasion. 51% of them is directly related to violence. The **CMR** was 12.3 per 1000. The second study is the *Iraqi Living Condition Survey* that done by the Iraqi Ministry of Health **MOH** covering the same period. The finding was lower than Robert et el. According to **MOH**, there was 24,000 death related war since the invasion. Based on this study the **CMR** was 0.74 per 1000 (37)

Burham et el conducted the third study in 2006. Covering the period from March 2003 to July 2006. This study reported 654,965 death. The **CMR** from June 2005 to June 2006 was 19.8 per 1000 (39). The fourth one is the *Opinion Research Business Survey*. It collected survey in the same period and extended it to 2007. They estimated that about 1,220,580 death occurred. The **CMR** in this study was 10.25 per 1000 (36). In a systemic review study that done by **CRED** teamwork in 2007 showed that about 125,000 loss their life after 3 years of invasion (40).The fifth study was done by Iraqi Body Count **IBC** organization. It is based on data collection directly from the news and Social Media. In 2008, it declared that the total number of death from 2003 to 2008 was 84,333, and the **CMR** that related to violence was about 0.64 per 1000 (41).

The last study conducted by a Group of Canadian and American researchers whom conducting household survey using sibling method estimated that the total number of death from 2003 until 2011 was 405,000 death (42). The study revealed that the **CMR** is 4.5 per 1000. The risk of death rise by 2.9 for men and 0.7 for women between the pre-war period 2001 and the peak of sectarian conflict 2006.

Uppsala Conflict Data Program is specialized in the counting of conflict-related mortality based on the media. The Geo Reference Data system estimated the total number of violence related-death from 2003 until 2016 is about 75,493 distributed all over Iraq and included multiple actors. Up to *Mosul* crisis, there is no official data about the number of death in the wide military operation that initiated in 2014. According to the **IBC**, the total number of death from 2014 to 2017 is more than 25,000 (41). However, this number carries the possibility of inaccuracy and should be interpreted with caution as the **IBC** is depending solely on the media which sometime be misled.
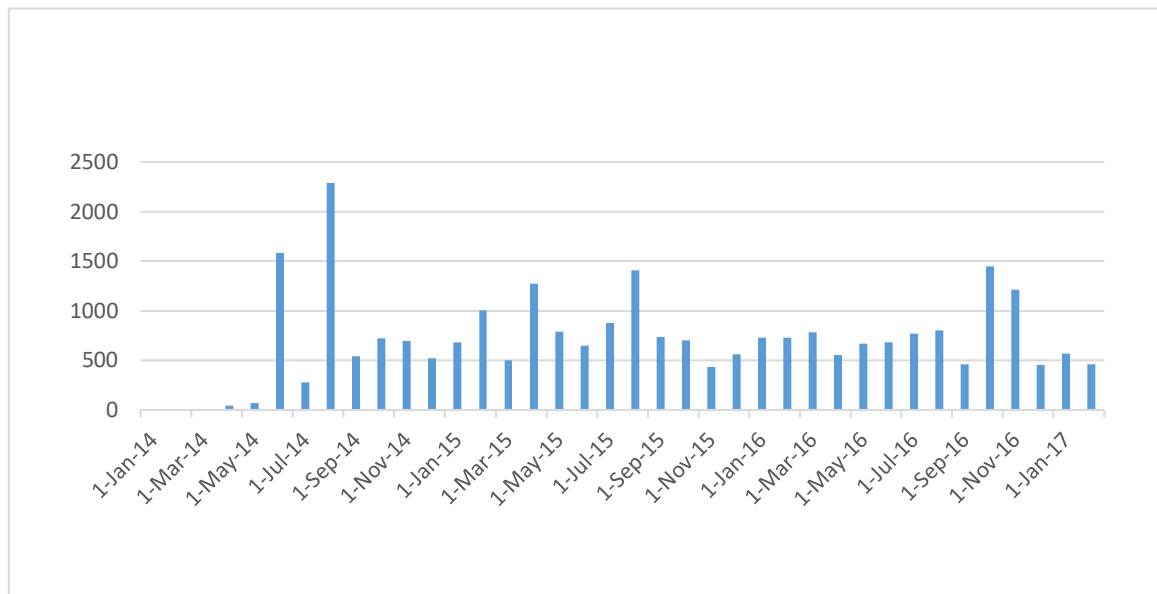
Figure 3 trend in mortality from 2014 to 2017. Source: Iraqi Body Count.org

4.2 Morbidity and Health System

The conflict and war affect the public health by causing breakdown the health services and increase the risk of both communicable and non-communicable diseases. It usually affected the health system either directly by bombarding the health services facilities for example or indirectly through the shift of funding from the health sector to the war sector.

Children are the most vulnerable groups that could be affected by disturbance of the health system. Child mortality is rising during and after conflicts and wars due to several factors such as affection of the health facilities and lack of medications. Regarding the child mortality in the 1980s. During the Iran-Iraq war the health system was affected by funding shortage; however,

in a way or another, it remained contact. Reports showed that countries engaged in conflicts experience increase in the infant mortality rate **IMR** (43). Before the start of the war, the **IMR** was 61 per 1000 and the **U5MR** was 83 per 1000 (44). And despite the ongoing war during the early 1980s, the Iraqi government started a wide health promotion programs in order to decrease the infant mortality rate such as vaccination campaigns, promotion of breast feeding, empowerment of the health facilities and hygiene control (45). These measures were successful in reducing the **IMR** mortality to 40 per 1000 and **U5MR** to 50 per 1000 in the early of 1980s. However, the **U5MR** increased again significantly during the mid of 1980s and beginning of 1991.

Household survey study that conducted during early 1990s found that the child mortality rate increased in both the north and the south of Iraq as compared to the center (46). This is apparently due to the effect of the war as well as the campaign that the regime initiated after against the civilian uprising. The study revealed that the **IMR** was 32.5 per 1000, and **U5MR** was 43.2 per 1000 before the start of the first Gulf War in 1991. This percentage is peaked to threefold after the Gulf War to reach 92 per 1000 for the infant under one year of age and 128.5 per 1000 to children less than 5 years (46). Destruction of infrastructures, lack of basic nutrients and medications, displacement of families, and increase the incidence of water-borne disease had been blamed for this high mortality ratio. On the other hand, **IMR** raised considerably in the west of Iraq during the Iranian war, especially during the last 2 years when the violent reached a dangerous level Followed by slight decline before it peaked again to 46 per 1000 after 1991 (43).

During the first years of 1990s, the north had experienced more child mortality than the center and the south. However, the equation is reversed after the Kurds obtain their de facto state in the north. Study conducted by the **UNICEF** in 1999; 8 years after imposing the sanctions compared the mortality between two periods; the Iranian war (1984-1989) and the sanction period (1994-1999). They found that the **U5MR** reached to dangerous levels in the south and the middle region 144, 125 per 1000 respectively while the north reported lower childhood mortality of 100 per 1000 (47). Childhood mortality was higher among the rural than urban areas. While the **IMR** raised from 47 per 1000 during 1980s to 108 per 1000 during the 1990s (48).

The health facilities are suffered from devastating consequences due to bombing as well as the military actions that carried out against the civil upraise thereafter (49). Additionally, the health facilities are severely affected by the effect of sanctions. In a survey made by **UNICEF** mission in Iraq visiting 29 health facilities and 17 community health centers all over the Iraq revealed damage to child vaccination programs. Medicines were always short supply, lacked of the detergents and the water supply had affected considerably resulting in upsurge of the water-borne diseases. **UNICIEF** report illustrated huge shortage in medical staff due to exodus that followed the war; this left a lot of primary care centers nonfunctional as well as other units and wards in major city hospitals (50). The sanction had a huge effect on the both medical and surgical practice due to shortage in the equipment and sterilizing materials. The hard economic situation

made the corruption taking place inside the health facilities (51). The **U.S** allied force bombed the electricity network in Iraq during the first Gulf War 1991. This in term resulting in affection of the proper purification of the water which lead to poor health and sanitation, especially in the south of Iraq (49). Water-borne diseases such as Cholera and Typhoid had increased significantly in post-war period. The rate of pediatric gastroenteritis increased due to incapability of the health care system to cope with increment in number of epidemics owning to lack of basic facilities and medications.

the Post war rising of the price of the food in addition to disruption of the health services accompanied by poor access to the health facilities resulting in increased incidence of child malnutrition .Before the Gulf War, the under nutrition diseases, were almost not present. After the **UN** sanction, there were increase in cases of Marasmus and Kwashiorkor in pediatric patients (49). This mainly due to the lack of infant based formula for pediatrics. The incidence of malnutrition was higher among the children aged 1 to 2 years. Acute malnutrition raised from 3% to 11% in the center and the south regions of Iraq. Due to sanctions, the percentage of low birth weight babies increased during the 4 year period (1994-1997) to more than 25% due to the maternal malnutrition (52)

It is well known that natural disasters and conflicts decrease sex ratio as it is can be a cause of stressors and shock among the population (53). Decrease in fertility level is another possible outcome for the population that affected by wars and conflicts (54). Moreover, the radiation is well-known cause of decline in birth sex ratio in many studies (55). Considerable number of chemical weapons used in Iranian and Gulf Wars used by both sides may have the effect on this outcome. Sex ratio at birth had been considerably changed in Iraqi populaces during Iranian war, the male sex ratio at birth reduced significantly. Although the exact factors that lead to this finding is still unknown, but it has been suggested that the effect of stress and war made this finding assuming that male sex ratio increased after the cease of fire (56).

The usage of chemical weapons is notable characteristic of modern warfare due to its physical and psychological effects on the population. Conferences and reports referred clearly to the usage of Depleted Uranium **DU** in the Gulf Wars and the local conflicts against the insurgents. According to declassified documents from **U.S** officials, around 944,000 rounds of depleted uranium had been used during the 1991 war (57). The south of Iraq, because of proximity to the water portal, represent the main point for allies operations. *Basra* is exposed to multiple attacks during both Iran and Gulf wars and it is heavily bombard with the **DU** in 1991. The incidence of childhood leukemia allegedly increased. This had been proved by a study done by the University of Basra and Washington affirmed that the incidence of leukemia is doubled during the 15 year period (1993-2007). The more common age affected were 0-4 years children (58). *Mosul* city, in the north of Iraq, does not suffer from match war act as the south and west; however, in study done in 2010 collecting data from 1980 to 2010 found an increase in the prevalence of Leukemia,

especially in male (59). The average incidence of Leukemia that diagnosed each year increased from 0.4 in 1980 to 8 in 2010. The incidence of certain adulthood malignancies that was previously rare had been surged up in the late 1990s. The most notable one is Kaposi sarcoma (60). Among the female, breast cancer has increased significantly owning to increase the expression of *Her2/Neu* gene in the people that exposed to **DU** (61). Post 2003, there were increase in the incidence of malignancy reported from the cities that affected by the war such as *Fallujah* province (62).

Congenital anomalies are another possible outcome of exposure to chemical agents. Studies in *Basra* revealed an increase in incidence of birth defect from 3.04 before 1991 to 7.76 in 1998 and 13.49 per 1000 in 2000. The incidence of anencephaly per se raised from 2.5 to 3.6 per 1000 in similar period (63). Another study done in Basra Maternity Hospital showed that the change in number of birth defect is about 22 per 1000 live birth from 1990 to 2003 (64). More accurate Study done in 2011 in *Fallujah* governorate in the west Iraq where the investigators examined the hair samples of the parents whom have a child born with congenital malformation, they found significant association between the level of **DU** in the sample and incidence of the birth defects as well as cancers (65). Adults also showed an increase in the incidence of cancer over 10 year period study (66). Short term study done in *Al-Anbar* province showed that the incidence of birth defects and congenital anomalies increased due to the contamination of the environment by the **DU** that used during the first and second Gulf War (67). The incidence of the neural tube defects **NTDs** increased to 3.3 per 1000. The chemical weapons that used by **U.S** in 2004 during the campaign against the insurgents blamed for this elevation in **NTDs** (68, 69). *Al-Diwaynia* province that situated in the south of Iraq also had been bombard with **DU** revealed an increase in the incidence of the **NTDs** from 5.4 in 1999 to 8.5 in 2000 (70). Although the investigator did not point precisely to the effect of **DU**, but he raised the concern that it could be a possible factor for increase in **NTDs** in the city. The chemical bombard of the Kurdish village during early 1990s have had a huge long term complications on the people that exposed to it. Respiratory and dermatological complications were obvious among the survived victims several years after attack (71). Post-traumatic disorder and psychosocial complications lasting for decades (72).

4.3 Landmines & unexploded ordnance UXO

On 19th of October 2017, Iraq Body Count website had declared that two children had been deceased by the explosion of landmine remnant from the wars in *Al-Zubair* governorate of *Basra* city (73). Although it has passed 15 years since Iraq has last high caliber war, the landmines still represent public health concern. The land is severely affected by landmines and **UXO** since the Iranian war, Gulf wars, and the associated internal conflicts. An estimated number of landmines

alone In Iraq is about 8 million distributed mainly along the north and south borders of the country. It is favorably founded in the farms and around the water resources. The **UN** estimates that Iraq needs from 35 to 75 year to be cleared completely from the Landmines and **UXO** (74).

The area that has the highest number of the landmines is what is called the Green Line in the north of Iraq that separate the north of Iraq from the south. This landmine implemented by the regime during Iran-Iraq war and during the Kurdish rebellion. While the south of Iraq has mostly unexploded ordnance that result from Iranian war, and Gulf Wars (75). The economic cost of the landmine is huge on the Iraqi government, several large infrastructure projects had been halted in the south of Iraq due to the contamination of the area by landmines and **UXO**.

Landmines and **UXO** are affecting public health either indirectly by preventing access to those areas that are affected by landmines set. Or directly by causing death and disabilities. Most of the death occurred pre-hospital, especially as the majority of victims are in the rural areas where there are no adequate medical aids. Landmines and **UXO** are considered important public health concern. Apart from the physical damages that are caused, the psychological effects are more devastating. Handicap person represents a hindrance to the development of the society. Moreover, many of those whom affect by landmines are usually carer for their families leaving the families facing the economic and social hardships.

In study done in the Kurdistan region of Iraq collecting a 50 years survey. It shows that the number of people killed varies from 0.2 to 58 per 1000 in different districts (76). More accurate 9 year study conducted in *Erbil* city revealed that the incidence most likely to take place near the Iraqi-Turkish borders. Male adolescents are most affected, and lower limb amputation is the more common consequence. This study also claims that the number of the incident is decreased from 1998 to 2001 followed by an increase before 2003 due to the implementation of the landmines by the regime before to the second Gulf War (77).

The social and health impact of landmines and **UXO** illustrate by the following **UN** equation: implanting landmine cost about 15$ while removing it costs at least 300$. On the other hand, treating the victims of landmine cost three times more than the victims that injured by another means (78).The medical reports estimate that the minimum cost of treating landmine victim medically and surgically is 6000$ (79).

A survey conducted by Information management and mine action program in 2006 through 13 Iraqi cities revealed that 1622 communities are affected by the landmine and unexploded ordnance placing more than 1.5 million people in danger of mine explosions. The total areas affected are estimated about 1730 km^2. 518 km^2 are in *Basra* alone. 90% of contaminated land is used to be for agriculture (75). According to the survey there are 17 died victims per 100,000 population per year in the affected communities. Most of the victims are in the south and north Iraqi cities. During the period of survey collection 2004-2006; 577 persons had been harmed due

to the explosion of landmine or **UXO**; 90% of the victims are male aged 15-44 years usually practicing farming (75). According to **UN** factsheet, in 2010 there were 25 incident related mine explosion reported, while 30 cases in 2011 given the case fatality rate of about 33% (80).

4.4 Protracted Displacement

Literally, Iraqi people had been suffering from displacement since 1980. Different displacement movements happened across the country during the last four decades. This displacement is either compulsory practiced by the regime or the insurgent against civilians or voluntarily where people escape from the war and conflict areas. Before 2003, the forced displacement was carried majorly by the governmental regime against Kurds in the north and Shiites in the south. After 2003 the internal displacement occurred mainly due to escalating of sectarian conflict and it happened all over Iraq

The Iraqi ministry of immigration and displacement has divided the internal displacement into 3 periods. The first period started from 1980 until 2003. The period where the displacement was due to internal conflict between the regime and rebels group all over Iraq. The second period started after 2003 and peak from 2006 to 2008. This is mainly due to the uprising of sectarian conflict. The third period is from 2014 to 2016. This period is parallel to the announcement of **ISIL** control over three Iraqi cities.

Starting in the 1980s when the Iraq-Iran war broke. The regime targeted Shiites in the south accused them cooperation with the Iranian side forcing thousands of Shiites to flee to Iran. In the north, Kurds suffered from huge displacement movement, during 1986-1988 *Al-Anfal* campaign was ongoing. More than 4000 villages had been bulldozed to the ground forcing thousands to leave their villages to re-settle in groups around the high way, while other thousands were trapped on the Turkish border (81).

The rebellion that followed the first Gulf War 1991 cause massive displacement consequences. In the north, more than 1.5 million Kurds had been forced to flee to Iran due to ongoing violence. Another half million trapped at the Turkish border preventing from entry (81). The fighting against Shiite rebels in the south had driven many of the rebels to hide in the marsh 1991. The regime then started aggressive campaign to drain, destroy, and dry the marsh in order to follow the rebels. These resulted in the displacement of more than 200,000 Arab Marsh (82). These forced campaigns of displacement were resulting in drop of population from 250, 000 to 25,000 by 2002 according to The **U.S.** Committee for Refugee **USCR**. **USCR** is estimated that the number of internally displaced Shiites in the south was about 40,000 to 1 million from 1994 to 1997. In 2000 and 2001 the **USCR** estimated that further 100,000 displaced from the marsh (82). The

conflict that happened between two Kurdish parties **KDP** and **PUK** from 1994 to 1997 had been resulting in a displacement of more than 100,000 to 110,000 people as they had been accused to support either side. Those people were never allowed to return even after the end of the dispute (82). Moreover, the uprising of the Islamic militant in the Kurdish region and claim a revolution against secular Kurdish parties resulting in a further displacement of Kurdish people in 2002 (82). In 1997 the Ba'ath regime started an organized campaign of forced displacement against the non-Arab ethnicity in Kirkuk city. Those were given a choice of either deported to the south keep their civil right or to Kurdistan de facto region, but lose their rights. According to **UNCHR** report in 2000, about 5 to 6 families are forced to deport every day from Kirkuk. By 1998 the regime stated a decree of changing the city name to *Al-Ta'mime* (nationalization) resulting in displacement further 14,000 from the city (82).

UN survey done in 2002, before the 2003 invasion, revealed that Iraq hosts the highest number of internally displaced people **IDPs** in the Middle East. About 1,000,000 displaced people from different ethnic and religious backgrounds (82). About 805,000 people in the north of Iraq compromising 23% of the north population, and about 200,000 to 250,000 in the south. Shortly before 2003 invasion, the report showed that 600,000 to 800,000 Kurdish people remain displaced in the north while almost 300,000 Shiites remained displaced in the south of Iraq (83). After the fall of Saddam's regime 2003. The situation in the north is turned upside down. The Kurds with the help of the Kurdish militia (*Peshmerga*) displaced more than 100,000 people mainly of Arab ethnicity from Kirkuk city (84). The situation of displacement partially improved after the war despite that some people left their places of residence in preparation for second Gulf War 2003. According to the annual report of international organization of migration **IOM** in 2006 about 200,000 people displaced due to violence from 2003 to 2005 (85).

The first displacement crisis after the fall of regime happened In February 2006. The bombing of holy shrine *Al-Askri* in *Samara* governorate sparked the sectarian conflict between radical Shiite and Sunni armed groups causing massive displacement as the sectarian violence escalated. The displacement movement was one of religious and ethnic orientation. Shiites fled to the south Shiite dominant area, and Sunnis fled to the Sunni dominant areas in the west and north. This pattern of displacement decreased after the Iraqi government took control over the security situation in *Baghdad* resulting in halting of the sectarian-based displacement. Despite the displacement rate decreased in 2007, but many families remained displaced. Few family returned to their original place of displacement, other preferred to integrate into their new environment while the rest were a plan to settle in a third location such as outside Iraq. The **IOM** published a report in 2007 stated that the number of **IDPs** are about 402,000 persons. Most of them were exiled from the Sunni dominant areas in the west of Iraq as well as other governorate due to upsurge of sectarian violence (86).

In 2011 the *United Nation Refugee Agency* **UNHCR** estimated that the number of displaced Iraqi is 4.5 million including 1.7 million refugees outside Iraq and 2.8 million **IDPs** (87). The true **IDP** crisis happened In June 2014. Iraq had been labeled as possessing the highest number of **IDP**s in the Middle East since 60 years. And by June 2015 there were 4 million people displaced internally according to the internal displacement monitor center **IDMC** (88). Following seizing of *Mosul* city by **ISIL**, about 200,000 people mostly Christian left the city. The progression of **ISIL** toward *Sinjar* governorate that has mainly Yazidi inhabitant causing displacement of further 200,000 people mostly were Yazidis. The rest of displaced people represent the Arab Sunni from the three cities *Anbar*, *Salah Al-din*, and, *Mosul*. This crisis of displacement was the largest in Iraq history and it's characteristically due to violence and religious extremism. Following the liberation of the cities from the control of Islamic State, the displaced people started to return back to their place of origin. As of October 2017, the **IOM** has identified that 3 million people are still displaced in Iraq. Although the total number of **IDPs** decrease by 1% but further 100,000 people displaced from the *Erbil*, *Sullyiamania*, and *Anbar* city due to the ongoing conflict in that areas (89).

Regarding the externally displaced people outside Iraq. There are multiple reports published about the number of people that exodus outside Iraq. Syria was hosting the majority about 1 million, Jordan 500,000 and Lebanon 20,000 while Turkey had the least displaced Iraqi about 10,000 (90). A study from Egypt showed that the total number of displaced Iraqi reside in Egypt are 17, 000 (91). The Iraqi s in the Middle East usually tend to circulate from one country to other (92). Europe has steadily received constant increase in number of asylums seekers since 1980. The top four countries are Germany, Sweden, Netherland, and United Kingdom recording about 225,000 asylum from 1985 to 2002 (93). In general, the European Union members received no less than 10,000 asylum application per year since 2003 (93). Cumulatively, more than 180,000 asylum application to Europe had been filled since 2003. Up to Mosul crisis, more than 250,000 people are displaced to neighboring countries (94).

4.5 Epidemics

4.5.1 Cholera

Cholera is an endemic disease in Iraq. Iraq suffered from cholera epidemics since the 1960s. From 1980 to 1991, the epidemic followed fluctuation patterns. Unfortunately, there was no official announcement about the exact number of cases of Cholera. The embargo years accompanied by significant destruction of the infrastructures and health facilities resulting in upspring in the number of cases all over Iraq. In 1999, the Iraqi official declared Cholera epidemics of about 874 cases all over Iraq. The fatality rate was 13. % (95). The cholera epidemic usually starts from the

north of Iraq particularly in *Kirkuk* city and spread through the contaminated water to the rest of country.

There is a very good relation between the conflict and the incidence of Cholera diarrheal illness in Iraq. According to the World Health Organization **WHO**, the outbreaks of Cholera around happened in Iraq in 2003, 2006-2008, and 2015 (96). In 2003 immediately after the second Gulf War, the **WHO** confirmed positive cholera test in four samples that taken from Basra city. These cases were due to poor water sanitation as result of destroyed infrastructures in the south of Iraq. By September 2007 when the sectarian conflict was ongoing. The number of Cholera cases that diagnosed was about 7000 people in the north of Iraq mainly in *Kirkuk* and *Sullyiamania* cities. The diarrheal disease spread to another 9 provinces. More than 30,000 people showed a symptom of diarrheal illness. About 3000 diagnosed with positive cholera test. The 2007 outbreak resulted in 14 death all over Iraq. In 2008, the **MOH** reported 341 positive cases of Cholera. The case fatality rate was 1.5% all over Iraq. Following **ISIL** crisis, another Cholera outbreak happened, On October 2015, the **MOH** reported total 1200 cases of positive vibrio Cholera cases all over Iraq. These cases were mainly affecting the displacement camps that had been settled by government and NGOs.

4.5.2 Typhoid

Iraq is endemic in Typhoid fever. It usually affecting people during the summer due to drinking of the contaminated beverages and juices. The destruction of infrastructures due to the Gulf War had affected the sewage system devastatingly. The lacking of the sanitary measures resulted in increase in the incidence of enteric infections. The rate of Typhoid fever shot up from 11.3 per 100,000 in 1990 to about 142 per 100,000 in 1994 according to the **MOH** reports (97).

Unfortunately, the number of Typhoid cases did not drop significantly after 2003, especially in the north of Iraq. *Kirkuk* city in north reported an increase in the number of Typhoid cases post-invasion. This was due to the affection of the city infrastructure by the sanctions and war (98). *Sullyiamania* city usually suffered from recurrent attack of Typhoid fever. a study done in *Sullyiamania* city 2014 revealed that the incidence of Typhoid is 23 per 100,000 cases (99). The south of Iraq, on the other hand, has suffered from the most severe blow of the infrastructures. Water resources are always contaminated in the south as compared to rest of Iraq. *Dhi-Qar* province reported 15% cases admission of Typhoid fever in 2014 (100).

Upon 2014 crisis in *Mosul*, people started using the borehole as a resource for water; moreover, the city has suffered from a cut in the healthcare and medicine supply. This result in an increase in the number of Typhoid cases. According to the *Iraqi Observatory Human Right Agency*, 276 cases of Typhoid fever has been diagnosed due to lack of clean washing and drinking water (101).

4.5.3 Measles

Measles infection is frequent and endemic in Iraq, but it was controlled. During the 1970s the government started extensive vaccination program campaign to decrease the mortality and morbidity that resulted from Measles. These program coverage were effective in reducing the **U5MR** during the 1970s and 1980s.

Following the Iranian and first Gulf War, Iraq had been suffered from vaccine shortage. This, in turn, resulted in the upsurge in the number of measles cases. From 1989 to 2003, Iraq suffered from three measles epidemic, the first one started in 1989 where the number of cases raised to about 12,000 cases all over Iraq. The second epidemic was immediately after first Gulf War where the number of cases peaked to 17,000 cases. The pattern of measles infection continued to raise during the period of embargo where it reached the highest during the 1990s by about 29,000 cases (102). Poor vaccination was blamed for those three epidemics that happened during the 1990s. Thereafter, the cases of measles decreased considerably as the *Oil for Food Program* enabled Iraq to import vaccines. Subsequently, the **MOH** started extensive vaccination program coverage and awareness campaign.

The first outbreak after 2003 invasion started in 2008. It started in the northwestern provinces of Iraq where the conflict escalated during that period preventing proper vaccination to take place. Measles followed three waves pattern. The first waves affected five children and last until May 2008, while the second lasted until September 2008. The third one extends to the early 8 weeks of 2009. The number is doubled during this period. In 2008 the total number of cases diagnosed with measles throughout the whole year was 8000. On the other hand, additional 8000 cases diagnosed during only first nine weeks of 2009 giving the incidence rate about 1000 per week (103). Following this epidemic, the number of cases declined gradually in 2010.

As 2013 there were only 494 cases of measles confirmed. These cases were mainly in the north of Iraq. With the broke of *Mosul* crisis, the number of cases is peaked to more than 900 cases in 2015. The majority of cases were in the center and the north of Iraq (104). This could be explained by having more displaced children in these provinces whom fled from the areas of conflict and missed the vaccination dose. The United Nation Office of Humanitarian coordination **OCHA** and **UNICEF** warned from possibility of spreading of epidemics to other Iraqi cities.

4.5.4 Poliomyelitis

Polio was highly prevalent in Iraq in the 1980s. The Iraqi government started an extensive and mandatory campaign of vaccination to eradicate polio since 1985. The campaigns were successful in eradicating the cases of polio to almost zero cases. The vaccination program decreased after

the 1990s sanctions due to the shortage of vaccine led to the emergence of the infection again; however, the government made another extensive vaccination program and the **MOH** legislated national vaccination day since 1995. Before 2003, the last case of polio in Iraq was reported in 2000 (105).

After the fall of regime, the polio eradication program continued resulting in Iraq free of polio. However, after *Mosul* and *Syrian* crisis the first cases of polio reported in Iraq after almost 14 years of onset in February 2014. The case was a six-month child who missed the vaccination. The laboratory result confirmed that this type of wild polio is the same that appear in Syria 2013. In October 2014 another case of Polio had been reported in *Baghdad*. The **MOH** has declared that the wild polio virus is imported from the Syrian refugees in *Dier-Al-Zur* province which is adjacent to the Iraqi border (106).

5. General Strategies related to Disaster Risk Reduction & response to Complex Emergencies

On the first session of the Global Platform for Disaster Risk Reduction conference that held in Geneva 2007, the director of the Iraqi ministry of environment has promised that the Iraqi government is making every effort to decrease the natural and man-made disasters in the country (107).

In term of disaster response, the Iraqi government has always followed the reactive pattern. There are several legislations that issued to mitigate the suffering of people in case of the disasters such as the Emergency Use Law 1961, Civil Defense Law 1978, Public Health Law 1981, and Social Care Law 1980. On the institutional level, the Iraqi government has established several institutions to respond to the act of violence after 2003. This includes Governorate of Emergency Cell **GEC**, Directorate of general Health Division, Ministry of Health, and Ministry of Displacement & Migration. . In response to any disaster situation the **GEC** of the affected governorate may respond in a decentralized pattern; however, the governor has the authority to ask for support from the ministry of interior. Should the disaster beyond the capacity of the governorate, the governor may ask for support of central government. Thereafter higher coordination committee may form under the patronage of the prime minister to manage the province that facing the emerging emergency situation.

The most critical center is National Operation Center **NOC** that operates directly by the prime minister office. It is usually specialized in terrorist attacks. Another center that established with the escalation of 2006 violence is the National Crisis Action Cell **CAC** which is composed of national security advisors, and the ministers of interior and Defense as well as the intelligence

services. The **CAC** tasked by National Security Council and the prime minister. The main mission of **CAC** is providing national level crisis management and has the authority to coordinate between the ministries. Another body that created in 2007 is the Inter-Ministerial Committee on Disaster Management **IMCDM**. It is composed of ten ministries including the Interior, Defense, Planning and Development, Health, Communication, Environment, Water Resources, Foreign Affair, Science and Technology as well as the State Ministry of National Security and the Secretariat General of Council Ministers. The **IMCDM** had prepared a notes to establish the National Center for Disaster Management. The center mission is to act as a secretariat for disaster risk reduction actions including research and studies on emergency, planning, and coordination of intervention in case of emergency, information exchange, the database for recording the information on hazards, risk, and vulnerability to crisis. The first law of Disaster Risk Reduction in Iraq had been drafted in 2012 with the help of **UNDP**. The law provides a comprehensive approach to address the risk of natural and man-made disasters in the country through early warning, preparation, and response system. The institutions that support the implementation of this law is multi-sectorial national disaster committee that is led by Ministry of Environment along with the National Center of Disaster Risk Reduction. The disaster risk plan is composed in accordance to the *Hygo Framework* of action 2005-2015. However, on the final report of the ministry of environment, Iraqi government had failed to implement the strategic steps of the *Hygo frame work* (108). Moreover, there was no specific budget that allocated for building infrastructures to improve the response to disasters and make the country more resilient. The main challenges is that poor coordination between the government and the agencies that are responsible for addressing the risk of disasters. Another challenge is that absence of national criteria to define the risk of the disaster on the country level. Though there was a good warning system according to report, but further bolstering of the alarming system was recommended. In the final national progress report the ministry of environment had placed a future plan for the establishment of National Disaster Management Center as well as working on secure funding for the activities that related to disaster management (108).

Upon 2017 the last report on the implementation of *Sendi framework*. Iraq still lacks the national database program to conduct disaster losses. Unfortunately, the precise statistical measures about the possible areas and vulnerable people to disaster are still under-developed. Nevertheless, the Iraqi government claims that a national program for disaster risk reduction is still on preparation phase (109). War and post-war conflict destroy the infrastructures and left the majority of institutions dysfunctional, thus increase the vulnerability of population. Moreover, the poverty and displacement that aftermath these consequences further make the country unable to respond to disasters

The main issue is that the current existing institution arrangement at national, regions, governorates, and local level are focusing on the post-disaster action without taking any

consideration plan for preparing to pre-disaster mitigation, preparedness , and response. Therefore, Iraq is still lacking comprehensive disaster management system based on analysis of risk, hazards, capacities, and vulnerabilities of the affected population. Apparently, Iraq needs strong infrastructural and technical capacities within the government and other stakeholder bodies to be able to respond to the future crisis.

5.1 Strategies related to the conflict

On 9th of December 2017, the Iraqi prime minister declared the end of **ISIL** occupation (110). Iraqi force finally achieves the victory after three years of continuous confrontation with **ISIL** militants. And for the first time since 2003 invasion, the Iraqi force gains a real ground foot all over Iraqi territories. The Iraqi government had done considerable efforts in fighting against the **ISIL.** After being collapsed in 2014, the Iraqi security forces regain step by step its power supported by Popular Mobilization Forces **PMF** and international airstrike coalition as well as some Sunni tribal members. However, in his speech, the prime minister warns from the possibilities of a future threat of the terroristic attacks. The **ISIL** leader *Abu Baker Al-Baghdadi* is still free, and released an audio record urging **ISIL** militants to continue fighting despite the retreat.

Over past decade Iraq has proved itself as the one of the most difficult state to govern. Not only because of internal division, but also due to the fact that the external powers continuously interfering in Iraq internal political affairs. **ISIL** was not the nascent of the moment rather than birth from previous militias supported by external powers as well as Sunni disadvantageous politicians whom found it as a way to pressurize the central Shiite dominant government. On the other hand, the history also proved that Iraq components are all unit when the state facing an external threat. Despite the fact that **ISIL** at first was supported by Sunnis, but the campaign against **ISIL,** subsequently has unified Iraqi Sunnis, Shiites, and Kurds effort to fight for the first time since about decade after the invasion.

Though the future seems promising, but many argue that post-**ISIL** era would carry a lot of challenges. In fact, the operation against **ISIL** has created a hyper-militarized environment and this may criticize the government ability to take the full lead all over Iraq in the future. Multiple armed groups have emerged as the result of fighting against **ISIL**. The Iraqi prime minister emphasized in his speech on the sole monopoly rule of government over the arms. In the south, the **PMF** looks a real challenge for the government as emerging parallel force to the regular Iraqi force. Despite the parliamentary approval of the legitimacy of **PMF** to be considered as a regular force joining the Iraqi force, but the leadership of the **PMF** is still point of doubt. These forces are led by non-governmental leaders during three years fight period, and it is mainly supported by Shiite parties that obtain support from external powers. Moreover, the **PMF** is not single body

rather than multiple brigades' patronage under different political parties. This point will further make the control over **PMF** dilemmatic.

In the north, the situation is much more challenging. The history proved that The Kurds are never willing to participate in unified Iraq, and instead continuously asked for an independent state. Actually, the Kurds carried more than non-official referendum post 2003 to claim the independent state. The paramilitary Kurdish force-*Peshmerga* which was originated from the rebel movements during Saddam's era never undergo to the central government control. And all the negotiations efforts to imply them into the regular Iraqi security force after 2003 had failed. In fact, the *Peshmerga* fought the Iraqi force in several occasions since 2003. The last confrontation in 2017 was shortly after liberation of *Mosul* when Iraqi army march and re-capture *Kirkuk* city who the **KRG** controlled since 2014 *Mosul* crisis.

Regarding the international effort, the United Mission in Iraq **UNAMI** and **EU,** as well as, **U.S** have placed a step in order to solve the tension over the disputed areas between the central Iraqi government and **KRG**. The implication of **PMF** into the regular Iraqi forces as well as define the status of Kurdish *Peshmerga* is the first steps in imposing order toward post-**ISIL** era (111). Until all political poles agree on a common framework to govern the country, Iraq is still in relative chaos of ethno-religious based conflict.

5.2 Strategies related to the Landmines & UXO

Iraq remains one of the largest contaminated land in the world. The **UN** reports estimate that Iraq needs from 35 to 75 years to cleansing the contaminated lands. In 2008 the Iraqi officials sign Ottawa anti-personal Mine Convention. Under this convention Iraq is committed to never use, produce, export or import the landmines again as well as to have clear all landmines by the year 2018. In 2012 Iraq signs another convention that prohibit the use of cluster munitions.

Before 2003, unfortunately, apart from **KRG**, there were no organized anti mine action program executed by the government. The authority did little to deal with the effects of landmines and **UXO**. Several programs have been initiated in the northern of Iraq to train the local villagers to deal with the victims of landmine at least in form of paramedic (112). Many NGOs implement low cost pre-hospital trauma system to help the victims in the remote rural area. These programs were successful in reducing mortality that related to mine explosions in Kurdistan (113).

Following the invasion, **U.S** department of state sent specialized unit called Quick Reaction Demining Force **QRDF**. Within 3 days from their arrival they cleared around 2,000 mines and **UXO**. The United Nation for Mine Action **UNMA** also sent a scholarship to conduct explosive ordnance disposal **EOD**. Several NGOs started their action to treat the mine remnant. Mine technique international team **MinTech** started field survey in *Basra* city. While Mine Action

Program **MAP** had implemented in the north of Iraq to demine the northern governorate recovering almost 10,000 **UXO** and 150 landmines. The Swiss Demining Federation **FSD** had worked in the middle of Iraq (114). The Iraqi organization for demining and **UXO** removal is the first Iraqi NGO that founded after 2003 to work against mines and **UXO.** It's successfully cleared of more than 190,000 landmine in 8 cities (115). Followed this international effort, Iraqi government has assigned this mission to the Iraqi Ministry of Environment.

Generally speaking, the **UNDP** is the main supporter for the government of Iraq against the landmines and **UXO.** This action is funded by multiple bodies including the **AusAid**, **USAid** as well as national bodies. The demining strategy is complied with the line of the National Mine Action Strategy that launched in 2010. **UNICEF** takes the role to provide technical assistant to support Mine Action Program through initiation of Mine Risk Education **MRE** program in the school and among local communities. The **MRE** activities extend to cover more than 300 local NGOs and governmental body for training and education about the risk of landmines and **UXO**. **WHO**, on the other hand, provided support for the handicap victims that affected by landmine explosions by providing rehabilitation centers and emergency response training in the north of Iraq. Since the 2014, the Mine Advisory Group **MAG** had initiated regular action for cleansing the landmine and **UXO** that had been placed by **ISIL**. From September 2014 to January 2017 the **MAG** had cleared more than 7,000 landmine from the liberated areas (116).

5.3 Strategies related to displacement

The Iraqi ministry of migration and immigrant **MOMI** has been found after 2003 to provide support for the returnees that had been displaced by Saddam' regime. Following the escalating of sectarian conflict in 2006, the ministry started dealing with the issues of **IDPs**. The 2014 unprecedented displacement crisis placed already burdened **MOMI** in an embarrassing situation, left incapable of handling the sudden large number of displaced populaces. The **KRG,** in particular, carries the considerable percentage of the burden since **KRG** had already more than 200,000 Syrian refugees that settled since the start of Syrian crisis.

With help of **UN**, the **KRG,** which hosts the highest host the highest number of **IDPs** in Iraq, has prepared humanitarian plan to cover the needs of the displaced population in the Kurdistan region in 2015. The emergency plan focused on providing a shelter and basic health needs to the displaced population. 11 camps had been established allowing more than 100,000 displaced people to allocate in. the plan also provided food and non-food items covering a considerable number of displaced people. More than 5 mobile clinics had established to provide the displaced people with basic health needs such as vaccine and primary health services (117).

As the Iraqi force started gaining foot ground in the previous **ISIL** occupied areas. The displaced people starting moving back to their original place. In April 2017, more than 1.5 million displaced Iraqi return to their places in the liberated area. The return process is continually expanded steadily in different regions. The main motivator is prevailing of the security situation in the area of origin followed by supported and encouragement of the Iraqi Security Forces **ISF**.

The international organization of migration **IOM** report in 2017 includes surveying people in the four cities that mostly suffered from displacement due to conflict (*Mosul*, *Al-Anbar*, *Salah Al-Din,* and *Diayla)* showed that there are about three million people still displaced. This due to fear of getting back to their place of origin due to the fragile security situation, while other are totally integrated into their new environment and reluctant to return to their places. However, 76% of the interviewed **IDPs** stated that they are thinking about return to their home of origin once the security situation becomes more solid (118). Other factors that influence the decision of return includes demolishing property during the conflicts, lack of jobs and social security, and fear of harassment due to ethno-religious factors in the displaced as well as in return zones. Moreover, although some areas are retaken back, still in proximity to the frontline between the security forces and **ISIL**, for instance, the Iraq-Syrian borders. However, in contrary to expectation, the **IOM** survey shows that the return is more facilitated in the areas that have heterogeneous population composition concluding that the non-official actors such as the tribal and religious leaders play a crucial role in facilitating the return of **IDPs** process. As for November 0f 2017, the **IOM** estimated that the total number that still displaced is about 2,500,000 persons.

5.4 Strategies related to the health & epidemics

The Iraqi ministry of health **MOH** has started Expanded Program of Immunization **EPI** since 1985 in response to the outbreaks of epidemics. The program was successful in reducing the infant and child mortality rate considerably. However, the program had been faced with many obstacles in 2003 aftermath; the most appealing challenge is the security situation and accessibility to people. Moreover, inadequate coordination between the **MOH** and local directorate presents a hindrance to the **EPI**.

Generally speaking, there are three stakeholders of immunization programs in Iraq. The Government of Iraq represented by the **MOH**, national NGOs, and the international partners that include **WHO**, **UNICEF**, **UNFPA**, **World Bank**, and the **USAID**.

The **WHO** has supported the Iraqi health system with through providing mobile clinics to the people in the affected areas as well as providing ambulance vehicles to enable the transfer of the affected people to the closet site of care services. Moreover, the **WHO** provided about 121 sites for vaccination coverage in the conflict areas aiming to control the communicable diseases such

as Cholera, and Measles. The funding was the most obstacle to provide full care to the people affected (119). The World Health Organization has implemented the project (preventing Polio & Measles outbreaks in security affected area and among the **IDPs**) in cooperation with The **MOH**. The project included a wide vaccine coverage campaign that targets the displaced people, refugees, and impact communities in Iraq. The total vaccination coverage was 95% of the targeted population. The **MOH** held 14 national immunization day packed by four rounds of substantial vaccine coverage that range from 86% to 94% in 2014 (106). 2015 plan of **MOH** included two long-term visions which are: every born child should have access to immunization schedule, and all people at risk should be protected from vaccine-preventable diseases; while the goal was to stop the epidemic of Polio and Measles (120).

The international federation of Red Cross and Red Crescent societies **IFRC** has facilitated the integration the Iraqi Red Crescent organization into Iraq's Disaster Management structure. The **IFRC** also support the community based and first aid framework programs emphasizing the monitoring of epidemiological and transmittable diseases through the coordination with the key ministries to encounter Measles and Polio epidemics. Fortunately, the Iraqi Red Crescent organization is proving to be effective in delivering the humanitarian aids to the area under the conflict. This makes it as a focal point for the coordination between the people in need and the humanitarian aid organizations. The scope of Iraqi Red Crescent mainly providing first aids and health education as well as immunization campaigns to people in need that are difficult to be accessed through another humanitarian bodies.

In the field of detection of the epidemics, Iraqi government supported by **WHO** did a good effort. In 2013 the **MOH** and **WHO** have implemented the Early Warning Alert and Response Network **EWARN.** The system is proving successful in monitoring the trend of epidemics in **IDPs** camps all over Iraq, especially Cholera, and Polio (121). The **WHO** report in 2017 does not include any news about any new epidemics. This may be a good indicator of successfulness of the previous and ongoing immunization programs that target the **IDPs**.

6. Conclusion

The future of conflict in Iraq is ambiguous. The most suitable word to describe the predictability of the future security situation in Iraq is unpredictable. The past has proved that the sectarian ethno-religious conflict follows fluctuation pattern. In fact, the only period where Iraq enjoyed some form of orders was during Ba'ath period. However, the degree of brutality that Ba'ath practiced is believed by many Iraqi responsible for chaos post-invasion. The legacies of minority Sunni dominance rule made it difficult for the Sunni politicians to swallow the upside down changed the compass rule to Shiites dominant government. Actually, until early months of **ISIL** rule, many Sunnis welcomed **ISIL** believing them as the power of Sunnis against the Shiite

majority government. The Shiites are viewed in the eye of Sunnis as the traitor of the Iraqi nationality accusing them cooperating with external powers. On the other hand, the Shiites always view the Sunnis as a supporter of terrorism in Iraq. This reciprocal allegation have significantly increased the tension in the past years. While the hostile Sunni-Shiite conflict was nascent of post 2003, but the ethnic Arab-Kurd dispute is historical since establishment of the state of Iraq. Kurds never feel the sense of Iraqi nationality and always looking for their independence even if that means asking support from external foreign powers. Actually, many Iraqi Arabs are never shed a tear for the Halbaja chemical attack believing that the Kurds deserved this fate as betrayal cost for their cooperation with the external powers. This ethno-religious dispute combining with betrayal condemnatory between all demographic poles represents the main cause of Iraq instability.

Conflict is the leading cause of mortality in Iraq. This fact is always in the mind of Iraqi people, the subsequent wars and conflict have burdened the Iraqi society in a way that barely one could find a family without lost member due to the conflict in last four decades. Moreover, lives are not only lost because of direct confrontation, but also because of the recurrent explosions and suicidal attacks that carried out post 2003. The Shiite-Sunni sectarian dispute created a tension weather in 2006; the Iraqi T.V reported on daily bases assassination incidents and anonymous bodies that found in the street. Regarding the **child mortality**, though Iraq shows progress so far in decreasing the **IMR** and **U5MR,** but the child mortality still unacceptable if it is compared with neighbor countries. The conflict breaks the health system frequently and the children are the most vulnerable group in the line of fire.

Conflict is the leading cause of disease outbreaks. The Cholera and Measles epidemics have shown a positive relationship with the intensity of the conflict. This is due to many factors such as displacement of population, inaccessibility of vaccination campaigns to the people under the siege, and destroy of basic infrastructures and health centers. Polio cases appeared for first time after more than a decade of Iraq-free polio. The officials declared that it has been imported from Syrian refugees whom also suffered from full hostility civil war. Typhoid cases peaked due to poor sanitation and hygienic measures in the conflict affected-areas.

Conflict causing protracted displacement and demographic changes. Conflict is the leading cause of Iraqi displacement. The massive displacement that happened with the *Mosul* crisis regarded as the largest one in the Middle East since the Palestinian march in the 1950s. Due to ethno-religious nature of the conflict, people tend to resettle in areas that are close to their either ethnicity or religious creed which change the normal demography. Nonetheless the security imposed considerably, but a lot of people reluctant to return due to mistrust and fear from being harassed. And this reflects by the fact that more than two million are still displaced.

Conflict causing immense human suffering and economic issues. The cost of the social aspect of the last **ISIL** conflict is much more than the financial one. Many families all over Iraq are left without carer. The number of widowed women and orphan children reaches to dangerous level. All aspect of social life has been destroyed in the previously **ISIL** occupied areas. The displacement causing a huge impact on people dignity; the Yazidi people in the north maybe will never forget the torture and enslavement by **ISIL** extremist. The mental trauma of the last crisis may take a long time to recover or maybe not, and still remember as a point of shame in Iraq history. The poverty and the employment raised considerably. About 20% of Iraqi are living below the poverty line. The Iraqi government has cut the employment scheme from the national annual budget due to deterioration of the economy. Iraq retreats to rank 113 in the Human Development Index, and show significant delay toward achieving the Millennium Development Goals **MDG**.

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