

## Analysis of Healthcare System in Iraq

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**Abstract:** The health status of the Iraqi individuals has essentially declined in the course of recent decades. The under-five death rate is presently 44 for every 1000 live births with the larger part of these youngsters passing on from pneumonia, diarrheal sickness and untimely birth. The 1 Child unhealthiness has expanded consistently with occurrence of low conception weight surpassing 10%. Maternal death rates have expanded to 84 for every 100,000 live births as access to quality antenatal and safe conveyance administrations has declined. As the nation pushes ahead with adjustment and change, guaranteeing access to routine high quality and impartial medicinal services has risen as an issue need and the Government of Iraq (Goi) has reacted by replenishing its dedication to enhancing the nature of Primary Health Care (PHC) administrations. The main purpose of the study is to explain the problems facing by Iraqi's and the approach to solve them in addition providing an appreciation of the health status of Iraqis.

**Key words:** Healthcare, Iraqi healthcare, healthcare in developing countries, declined, guaranteeing

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### INTRODUCTION

The condition of healthcare in Iraq has deteriorated amidst its turbulent history. This can be reasoned to the continuous failure to provide minimum standards in the healthcare delivery system in Iraq during the past several decades. In addition, the administration of 80 and 90's had slashed the subsidy for healthcare by 90% sparking a significant decline in wellbeing care for the population (Al Hilfi *et al.*, 2013). This was just prior to the invasion of Iraq which saw the downfall and collapse of that regime as well as the structured delivery of basic healthcare.

Poor public health conditions were particularly seen in Southern Iraq where lack of healthy nutrition and water borne illnesses became prevalent in the 1990's (Cetorelli, 2013). As such, salaries for healthcare workers and medical staff throughout the country were drastically reduced causing an exodus from those professions. Maternal mortality rates nearly tripled as a direct result from lack of skilled care and treatment during the same

period. Iraq's infant mortality rates more than doubled later in that decade due to same lower standard of care that was available to the general public.

A decade of neglect and decline of the healthcare infrastructure in the country began to show related outcomes by the late 1990's and early 2000's. Many chronic diseases like diabetes and hypertension went without being diagnosed because of deficient facilities and equipment. The lack of treatment of these undiagnosed conditions has led to a higher acuity level upon discovery. The break down of sanitation systems in 2003 caused by the Persian Gulf conflict prompted a rampant occurrence of cholera and typhoid fever. The primary infrastructure of the country had diminished over the previous decade to the extent that common infections and malnutrition became widespread (Al Hilfi *et al.*, 2013).

Few improvements to address these conditions had been implemented by the end of 2004. There were approximately 240 clinics and 1,200 well-being centers at that time. Many of these facilities were lacking the

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adequate materials or the professionally trained staff that was necessary to diagnose, treat and promote essential public health services. Substandard hygienic conditions were prevalent and shortages of prescription medications were noted as being routine. Some initiatives began to be drafted and implemented to include an extensive vaccination program for children and the preparation of a therapeutic work force. Public health and human services remained somehow active in occupied localities despite the savage insurrection which continued to add difficulty in providing services.

The occurrence of typhoid, cholera, intestinal sickness and tuberculosis were higher in Iraq as compared to other comparable countries by 2005. The prior decade of conflict and recent destruction left an expected 12% of healing centers and Iraq's two fundamental laboratories devastated. There were 15 healing centers at this time with six physician specialists and 11 healthcare professionals for every 10,000 people. Actions called for \$1.5 billion US \$ of the national budgetary plan to be used on social insurance in the coming year (Burnham *et al.*, 2009).

Blood transfusions that occurred in Iraq accounted for 73% of Human Immunodeficiency Virus infections (HIV) in 2006 while only 16% were contracted from sexual transmission. According to author's name in (Campos, 1994), the AIDS Research Center in Baghdad played an important role. Most cases of reported HIV have been diagnosed in the Center which provided free treatment to those positively diagnosed and where testing is compulsory performed for foreign nationals entering the country for long term visas and residencies as residency requirements. Between October 2005 and January 2006, approximately 26 new cases were diagnosed and reported which brought the official aggregate number of incident cases to 261 since 1986 (Aronson *et al.*, 2006).

### **HEALTH CARE STATUS IN IRAQ**

The socio-economic and political history of Iraq leaves a trail of devastating realities over the past two decades. Improving healthcare modalities, delivery and oversight of public health are essential tools needed to restore Iraq to its optimum (Valenciano *et al.*, 2003). It had been noted that since 1990, there has been a drastic decline in public health services for the general population of Iraq. This includes a worldwide growth in the diagnostic equipment, treatment capabilities and the administration of healthcare. The original conflict, subsequent country discord and further sectarian violence have denied the people of Iraq of that experience. The maternal mortality rates for the period from 1990-2000

was high due to the rise in poverty in which 11% of households were suffering from limited food limited access to water supplies which was reported to be lower than 40% in some areas; poor education which result in unhealthy life styles, unhealthy diet, lack of exercise and poor nutrition (Stephenson, 2007). From 2003 and onward, the maternal mortality rates has constantly increased, Roberts *et al.* in (2004) addressed a number of aspects that found to be associated with infant's death such as coalition bombings and to births at home in which lack of security prevented travel to hospital for delivery. Following the US-led invasion, it can be noticed that most of the increase in infant mortality is plausibly linked to the conflict.

In contrast, adult mortality has increased with noticeable fell in life expectancy under 60 years for men and women by 2000 which mostly back to the (Stephenson, 2007). As such, we can conclude that most causes of death among infants and adults in Iraq before the invasion were myocardial infarction, cerebrovascular accidents and other chronic disorders. However, other factors related to violence were reported for the period after the invasion which was mainly attributed to coalition forces. This includes targeting women and children in most occasions (Roberts *et al.*, 2004). The current scenario has led to many challenges confronting the nation in its attempt to enhance its health care and in restructuring of its healthcare administration systems. There was a real need to distinguish and highlight the requirements needed to establish the appropriate measures to be implemented through the next few years. The population of Iraq has continued to grow at about 3% a year and is currently reported to be at 32.2 million.

Various distinctive determinants as well as risk factors were responsible in exacerbating the decrease in the quality of citizens' wellbeing and quality of life as well as life expectancy and longevity (Ghani and Jaber, 2015). reported that the World Health Organization (WHO) has evaluated Iraq as having mortality rates similar to those found in poorer nations such as Afghanistan, Djibouti, Sudan and Yemen. This evaluation noted a marked increase for poverty levels in 11% of families or approximately 2.6 million individuals where their sustenance was unreliable. It also stated that 25% of family units were dependent on food aids provided by the World Food Program (WFP) in 2003 (Al Hilfi *et al.*, 2013). It was additionally observed that poor sustenance also was attributed to 1 in 5 children being underweight and 1 in 3 of those children was chronically or severely malnourished.

Only 40% of the population in Iraq throughout several regions of the country documented access to safe drinking water due to inadequate sanitation and water supplies. It was also noted that nearly 2/3 of families were not associated with functional sewage infrastructure. An unstable government, depressed economy, idol time, high unemployment and lack of social outlets have contributed to the adoption of unhealthy lifestyle choices by the populace (Rahim *et al.*, 2014). Such unhealthy lifestyle choices included but are not limited to the abuse of tobacco, negative eating habits and absence of physical activity. The latter had led to the notable decline in the wellbeing of the Iraqis.

Sectarian violence and lawlessness remain a significant challenge in the country. Many people are injured during these acts of violence ending up with serious disability causing an increase in potential years of life lost and an increase in disability-adjusted life years. Absence of quality medical care, lack of ambulances and the short supply of trained emergency medical staff as well as lack of urgent care facilities to accommodate the sick or injured have contributed to the increased disability and potential life lost in this population. Preventative care appears to be available only in highly populated urban areas that can afford or attain such services.

#### **IRAQI HEALTH SERVICE AND EDUCATION SYSTEM**

Iraq had suffered deterioration in the educational system in the past several decades. The disruption in the infrastructure system and the constant conflict have forced most of the country's educated people to flee to a safer environment, a phenomenon known as the brain drain. This movement has left a void of competent faculty to educate the youth of Iraq. The insufficient delivery of this academic role will be a significant challenge to be addressed for years to come in Iraq (Zangana *et al.*, 2008).

Obligatory education started in the mid 1970's. Instruction began at the starting age of six with elementary grade school for 6 years followed by supplementary instruction of adults up to age 45. All of this education was at the expense of the government. Tuition based schools were even made open to the public. There were 6 colleges and 3 schools of Muslim philosophy which had the status of a high school during this same time period (Zangana *et al.*, 2008). Prior to 1970, the rate of individuals with higher education did not surpass 1% of the populace. In 1990, 96% of children between the ages of 6-11, 47% of teenagers between the ages of 12-17 and only 13.8% of young adults between the ages of 20-24 were going to schools.

A majority of college eligible youth during the same time frame opted to attend higher education and universities outside of Iraq. This was particularly true to countries like the United Kingdom and the United States. This exodus of scholars helped contribute to the lack of competent and qualified faculty needed to perpetuate the learning cycle of a growing country. The new found petrodollars were used for the acquisition of weaponry and national defense. Large numbers of Iraqis were persecuted and entire sects were isolated into backwardness deprived from education and healthcare. The infrastructure of the country was destroyed during the Persian Gulf War in 1991. The country has been struggling ever since to overcome continued sectarian violence, acts of terrorism and an unstable ruling power. This situation has prevented the population from achieving its growth potential either in healthcare technology, education, preventive medicine or pharmaceuticals. The results have become obvious and critical when statistics are analyzed.

Despite the fact that the quantity of understudies in grade schools increased by 44%, illiteracy was predominant among adults above 15 years of age with as much as 42% being illiterate and cannot read from 1976 through 1985. At present, 31% of young ladies and 17.5% of young men do not attend elementary school (4). A decrease in instructive enrollment and participation was also observed (Al Hilfi *et al.*, 2013).

#### **IRAQI HEALTH SERVICE AND STAFFING ISSUES**

General medical care was available to 97% of the Iraqi nationals living in urban communities prior to the Persian Gulf War. Rural areas were able to accommodate 79% percent of its inhabitants with basic medical care. Baghdad which is the most populous city in Iraq, also has over one half of the medical healthcare specialists. This is in contrast to the non-urban areas where its population has difficulty accessing even the most basic and essential healthcare services. There were 1800 healthcare providers during that period of time that rendered varying degrees of medical care. Thirty eight percent of these providers were located and operated in Baghdad. One decade later, a drastic amount of these professionals had emigrated abroad leaving no other staff to assume their roles (Jordan *et al.*, 2015). The current Iraqi healthcare administration does not cover the essential needs of its nationals. There is an immense disparity between the quantity/quality of the healthcare work force in urban areas as opposed to rural settings.

**Iraqi health service and facilities issues:** Before 1990, Iraq health services were considered to be one best in the region. However, the limited spend on the development of healthcare services poor management have resulted in a heavy toll. This includes >90% cut in the budget along with the poor building's status. On the other hand, spending on overreals training programs was also reduced in which it impact health specialists knowledge and practice. As quoted by (Alwan, 2004) "About one-third of primary care clinics, >12% of hospitals, 30% of family planning clinics and 15% of child care clinics were looted or damaged or both". Such damage also consists of looting central warehouses for the storage of drugs and medical suppliers. Despite these challenges, Alwan reported that staff availability is the main apparent aspect that is yet to be affected, especially the doctors of whom there are some 18,000. From this, we can drive our conclusion about the limited focus on primary care in most Iraqi healthcare sectors along with the low spending on advanced training programs and poor management (Ghani *et al.*, 2015a; Hassan *et al.*, 2014; Jaber *et al.*, 2014).

**Iraqi health maladies:** The state of healthcare of the Iraqi populace after the Second World War was at a low level. Infectious and parasitic ailments were a common occurrence. Intestinal sickness was endemic in all parts of the nation. The intestinal infection rate ranged from 26-266 cases per 1000 individuals. Around 600,000 cases of intestinal sickness were dealt with in health networks, most of which were in the Karbala region. Schistosomiasis created by the Schistosoma Haematobium parasite was a huge issue in all parts of the nation. The Tigris and Euphrates delta area were particularly affected by Schistosomiasis where the infection rates ranged from 18-80% depending on the geographical location and 35% was reported to be in the city of Baghdad. Amoebiasis created by Entamoeba histolytica is yet another type of parasitic illness and afflicted up to 35% of the residents who lived in Baghdad (Korzeniewski, 2006).

The nation's businesses were nationalized during this post war era. The healthcare and educational institutions were funded from the newly discovered petro revenue realized throughout the county. The use of low cost pharmaceuticals were used to fight infectious and parasitic maladies and had effectively controlled outbreaks (Rawaf *et al.*, 2014). The epidemiological situation of Iraq after World War 2.

The occurrence of amoebiasis in the Al-Basra region reached an alarming rate of up to 70%. Other incidents of

parasitic illnesses included ancylostomiasis, ascariasis, trichostrongylosis and echinococcosis. Additionally, trachoma which is a bacterial infection of the eye brought about by Chlamydia represented a genuine threat to the public health of the inhabitants in Iraq because left untreated could cause blindness. There were approximately 500,000 cases of trachoma during this period. Tuberculosis was in epidemic proportions throughout the world at that time and Iraq was not excluded. It was reported that up to 6,800 cases of tuberculosis and 3,100 cases of non-pneumonic tuberculosis were recorded annually.

**Violence affects healthcare:** The delivery of human services remains seriously challenged in southern Iraq by the devastating circumstances of violence against physicians. The Iraq Ministry of Health estimated that 200 doctors have been executed, since the Persian Gulf War. The Iraqi Medical Association, in contrast, puts this figure at 2000 specialists (Jordan *et al.*, 2015). The Ministry and the Association estimate that 34,000 physicians have left the nation. Examples of violence against the physicians include but are not limited to the following. The appointed healthcare priest, Ammar Al-Saffar was captured from his Baghdad home by armed men in November 2006 after he called for more attention on the cause for violence against physicians. He has not been found since his abduction (Al Hilfi *et al.*, 2013). There was an assassination attempt on the representative senior member of Baghdad University's School of Medicine in February 2008. Khalid Nasir Al-Miyahi, a prominent neurosurgeon in Basra was abducted and killed in the same year (Korzeniewski, 2006) (Fig. 1).

Violence continued in 2008 and perpetuated in December of that year when the senior member of the University of Mosul's School of Medicine was injured by shooters. A few members from the Iraqi Medical Association's 2008 yearly meeting in Syria were forced to stay in Syria from returning to Iraq with no reason or explanation given. The governing administration for Iraq has attempted to draw new physicians to the country with disappointing results. Doctors' security was further undermined by the current administration's late choice to permit certification of physicians to carry weapons for self-defense. A study created by the Iraqi Association of University Lecturers noted that 235 Iraqi scholars have been killed since 2003 and a further 294 have been hijacked or debilitated. This study also noted that the educators have borne the brunt of the difficult situation.



Fig. 1: Iraq's 18 provinces and surrounding countries

Some of the examples used were that 11 medical faculty members have been killed and that a total of 71 staff have lost their lives from 13 departments at Baghdad University (Burnham *et al.*, 2009).

The brutality against doctors is blamed on the extremists. Government activities have likewise been impaired by the acts of these groups. Many acts of terrorism have occurred in Baghdad's thickly populated Sadr city region. Authorities there have evaluated that 925 individuals were slaughtered and 2,605 were injured as military operations strengthened in 2008. The Sadr city General Hospital and 12 ambulances were harmed by rockets, the UN reported after government authorities surged into the territory in April.

Yassin Al-Rikabi, chief of the Mohammed-Bakr Al Hakim Hospital in Sadr city stated that Iraqi troopers struck the doctor's facility and captured 35 staff due to suspicion of having treated (Webster, 2009). UN services and human aid programmers. The public's well-being was further jeopardized by a 48 h travel ban which kept the ambulances and emergency personnel within Sadr City from rendering aid to the sick and injured. A representative from the 300 bed Al Imam Ali Hospital in Sadr City stated that the battling proceeds in the region. The quantity of clash related cases has now dropped from around 100 per day in the height of the fighting to under

five. "It is still difficult to maintain the doctor's facility and we keep on having extreme deficiencies of crisis medications and rescue vehicle administrations.

Our ambulances are even now being assaulted" the previous minister of health in Iraq Alwan highlighted the lack and difficulty to provide security for specialists remains a discriminating stress, he added that, the doctor's facility remains gravely short-staffed. "We can't yet expect that the circumstances will progress" (Webster, 2009). More recently, (Jordan *et al.*, 2015) stated the impact of ongoing violence along with the current lack of security in many parts of Iraq have negatively affected the potential for reforming health service in certain geographic areas. It has also resulted in hindering the rebuilding plans of healthcare basis.

**Rebuilding health care facilities:** The US government has dedicated \$50 billion to the recreation of Iraq since 2003. Total 1 billion US \$ have been committed to a health awareness foundation. A majority of the initial funds have been used to furnish the military with vehicles to the Iraqi Army. There are 243 US government counsels working inside government of Iraq services and only ten of them work on health care issues. Up to 6 billion US \$ have been funded to aid US military leaders in the planning to "address the needs of

the groups in which they work.” Security use will expand 600%-250 million US \$ in the not so distant future. Social insurance consumptions decreased by 36%-14 million US \$ and water and sanitation spending declined by 73%-44 million US \$ (Al Hilfi *et al.*, 2013).

After the end of the Gulf War in 2003, the White house recommended the Pentagon to work with the Iraq Ministry of Health to reorganize its health and human services. The working task force included assistant secretary of defense for health affairs Mr. William Winkenwerder and Jim Haveman, a previous Michigan Healthcare official secured by a group of 30 masters. The group helped build another national health awareness program and extended the healthcare plan 30 fold to 1 billion US \$ in 2004. It also pushed the administration to grow essential planning, defend drug delivery, incorporated Kurdistan in a decentralized national framework and sought volunteer specialists to come back from abroad (Jordan *et al.*, 2015; Freeman, 2002).

Along with having US spending much of its financing for the recreation of Iraqi facilities and healing centers to US building firms that were later extremely censured by US government evaluators for neglecting to respect contracts, the lack of management ability was considered the key factor effecting the rebuilding of healthcare sectors in Iraq. With the end of US invasion to most Iraqi regions, most health facilitators and health-related specialists have settled elsewhere outside Iraq. This led many researchers like (Roberts *et al.*, 2004) to focus on the need for identifying the health minister demands for the rapid development of health services. Nevertheless, it is unlikely why these expectations are going to be met at any given time. Managing most of these expectations and also demonstrating important health enhancements achieved by way of primary attention development is going to be an important role intended for public health practitioners. As such, a politics solution is required to bring the future stability required to fully build the country's health services. Creating this link clear to authorities and depressing them for action will be a crucial advocacy position for health professionals. The present security predicament makes building plans particularly hazardous and typically inadvisable (Roberts *et al.*, 2004).

Reviews of US government contracts with the American designing firm of Parsons Delaware Inc. to assemble 150 healthcare related projects in Iraq found that most facilities were incomplete and only six were completed. US inspectors likewise condemned USAID for its administration of development of a 941 bed pediatric

facility in Basra. USAID reallocated the agreement to the American Bechtel Corporation after Congress dispensed 50 million US \$ for the undertaking in 2003. Bechtel's bills spiraled to 170 million US \$ after being awarded the contract. USAID had not named a venture officer to regulate Bechtel's work on the healing center and did not inform Congress as well. There were healthcare facilities that were completed; however, in some cases quality results were not achieved. There was an evaluation of a repaired maternity and pediatric facility in Kurdistan where remodels were finished in May 2006. US government examiners exploring US health awareness ventures in Iraq disclosed that “US offices regularly settled on numerous choices about ventures without finding out appropriate perspectives, approving purchases or inquiring about the Iraqi population specific needs “ (Korzeniewski, 2006). In Iraq, decision makers of healthcare sectors needs to consider the use of assessment approach for the aim of ensuring that current services offered are in line with the current needs. This include identifying the major health problems of a population; identify inequalities in health and access to services and determine priorities for the most effective use of resources (Al Hilfi *et al.*, 2013).

On the other hand, decision makers in Iraq also need to address what is involved, the time and resources necessary to undertake assessments and sufficient integration of the results into planning and commissioning of local services, (Ghani, *et al.*, 2015b; Mohammed *et al.*, 2014) recommend to use telemedicine which helps healthcare services. The US representative Ryan Crocker from Baghdad says that in the wake of using several billion dollars to reinforce Iraqi police and military, the US is rethinking its deliberations and will progressively concentrate on medicinal services and training. He does not foresee this will include huge ventures as it is not related to schools and clinics reforming, he also added that little inputs are needed in order for Iraqis to be able to take their own decisions with the consideration of further circumstances (Jordan *et al.*, 2015).

**Present health care in Iraq:** The researcher tried to examine the current situation of healthcare in Iraq and how to get a healthier Iraq, 11 interviewees were participated in this research from five hospitals and Ministry of Planning in Iraq two physicians from each hospital and the undersecretary of Ministry of Planning the main focus of the interviews was two-folds: to explore the current situation of healthcare in Iraq and what are the factors that influence the healthcare in Iraqi hospitals from physicians perspective.

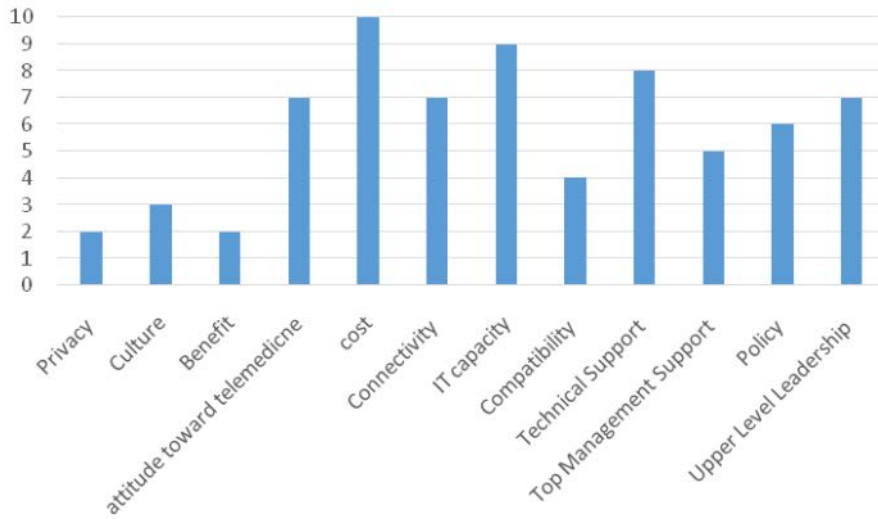


Fig. 2: Analysis of interviews

All the interview sessions were audio-recorded and subsequently transcribed. All the interviews were conducted in Arabic, each interview took 10-20 min. The methods used an open-ended semi-structured interview by asking similar structured interview questions to all the interviewees such as current data consulting methods, types of data consulting and shared, their perceived motivations and barriers of data sharing (telemedicine) and lastly interviewees' demographic information and work environments. An example of the interview questions was: "What motivates physicians (including you) in your field to share their data?" During the interviews, the participants were asked to answer the questions based on not only their own experience but also their observations in their research disciplines in general as shown in Fig. 2. The interview showed that influence factors that effecting Iraqi telemedicine are privacy, culture, benefit, attitude toward telemedicine, cost, connectivity, it capacity, compatibility, technical support, top management support, policy, upper level leadership.

**Recommendations for the Iraqi Ministry of Health:**

Enhance the nature of mental healthcare administrations by coordinating the advising model into existing mental healthcare offices through Iraq, besides promote the accessibility of administrations and heighten public awareness by speaking transparently about the issue of emotional sickness through a nationwide open campaign, furthermore facilitate preparedness of new and accomplished healthcare advisors for the benefit of public health projects

Provide direction and quality control of advisors utilizing a prepared group of supervisors, in addition

integrate the utilization of multimedia and conferencing to develop and establish current public health needs in addition expand the no cost telephone helpline to assist any Iraqi with telephone access essential data to enhance, enable and expand awareness on public health issues. Create a plan and treatment modality to provide staff and administrate a mental health insurance program and promote public awareness of same (Rawaf *et al.*, 2014). Telemedicine plays central role in healthcare sector of developed countries as well as some of developing countries (Ghani and Jaber, 2015), thus Iraqi Ministry of Health has to build a telemedicine project for healthier Iraq.

**CONCLUSION**

Many years of war, conflict, misappropriation of funds and continued sectarian violence have had a negative impact on the healthcare infrastructure of Iraq. Iraq now faces ongoing struggles to reconstruct itself. The challenges include an educational system that lacks enrollment and qualified instructors to teach the curriculum. Up to date healthcare facilities, equipment and professionals are in critical short supply that have led to increased mortality rates in all areas.

Billions of dollars both foreign and domestic are available. The military budgets escalate while baseline healthcare appropriations are decreasing. The assets are intensely regulated for development of auxiliary and tertiary human services offices. Human asset advancement appears to neglect the connection of the needs, key plans and the coordination of the projects. The general public is in a disadvantaged position due to the

syndication of healthcare to business by specialists. Significant changes need to be applied to the public health framework which has no proper strategy. Extremists continue to cause strife throughout the country causing disruption to the basic framework of daily life. The partisan divide that exists in Iraq appears to be constant and makes even the best plans hard to execute. Absence from any dialogue makes any success story a challenge.

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