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Page Title: Continuing Collateral Damage: New Medact Report

The health and environmental costs of war on Iraq calculates the toll, and shows how the general state of health of the Iraqi people, already poor by international standards, has been compromised further by the war.

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Continuing Collateral Damage: The health and environmental costs of war on Iraq

Continuing Collateral Damage: The health and environmental costs of war on Iraq calculates the toll, and shows how the general state of health of the Iraqi people, already poor by international standards, has been compromised further by the war. The findings have emerged from a comprehensive independent survey undertaken by the UK global health charity Medact. Part-funded by Oxfam and the Polden-Puckham Charitable Foundation, an international team of authors and advisers, all experts on health and conflict, have assessed the health and environmental impact of the war.



Executive Summary

The war on Iraq and its aftermath exacted a heavy toll on combatants and civilians, who paid and continue to pay the price in death, injury and mental and physical ill health. Between 21,700 and 55,000 people died between March 20 and October 20, 2003 (the date on which this report went to press), while the health and environmental consequences of the conflict will be felt for many years to come.



Press Release

Released 11/11/03



Working Paper 1

Highlights and explains the contrast between the widespread use of precision weapons and the high number of incidents involving civilian deaths and 'friendly fire'.



Working Paper 2

Looks at the questionable legality of inhumane weapons used during the conflict and explains their impact on health.



Working Paper 3

Mental well-being in Iraq – six months after the start of Operation Iraqi Freedom



Arabic Translation

This is a translated copy of the full report



Arabic Translation

A translation of the Executive Summary



Italian Translation

An Italian translation of the Full Medact Report



Finnish Translation

A Finnish translation of the Executive Summary

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press release

Wednesday 5 November 2003

EMBARGOED UNTIL 0700 GMT ON TUESDAY 11 NOVEMBER 2003

Health of Iraqi people is worse following war says new report

The war in Iraq was declared officially at an end six months ago, but the health and environmental costs of the conflict are still being felt. Drawing on sources within and outside Iraq, the international health charity Medact says that the health consequences of the 2003 war on Iraq will be felt by its people for years, maybe generations.

The report, **Continuing Collateral Damage: The health and environmental costs of war on Iraq 2003**, will be released on November 11 in London and 13 other countries. It follows Medact's initial report on Iraq, 'Collateral Damage', which was published in November 2002, prior to the war.

The findings have emerged from a comprehensive independent survey assessing the health and environmental impact of the war undertaken by Medact since March 2003. The research was carried out by an international team of authors and advisers, all experts on health and conflict.

The new report estimates that more than 20,000 Iraqis have died between the start of hostilities and when the report was finalised late last month. The number of people affected by the aftermath of the war is still rising as the Iraqi people continue to pay the price in death, injury and mental and physical ill health.

'Limited access to clean water and sanitation, as well as poverty, malnutrition, and disruption of public services including health services continue to have a negative impact on the health of the Iraqi people,' says the report's author Dr Sabya Farooq.

Because of the continuing insecurity and alarming deterioration in the health of Iraqi people since the war, Medact is calling on the occupying forces and UN agencies to:

- Further investigate the current and long-term health impacts of the war.
- Ensure that all reconstruction of public services including health is fully funded
- Carry out their obligation under the Geneva Convention to maintain law and order and to protect hospitals, health professionals and those who provide humanitarian aid.

Note to editors

The report will be launched in London at a press conference on Tuesday 11 November from 0915 - 1000 at the British Medical Association, Tavistock Square, London WC1.

The press conference will be followed by a seminar from 1000 – 1300 in the same location with members of the Nobel Peace Prize-winning organisation International Physicians for the Prevention of Nuclear War (IPPNW) to discuss issues arising from the report.

The report will also be issued on November 11 or 12 by IPPNW affiliates in 13 countries: Australia, Belgium, Canada, Finland, France, Germany, India, Italy, Japan, the Netherlands, Norway, Switzerland, and by Physicians for Social Responsibility and IPPNW in New York.

The report, an Executive Summary and additional material will be available at www.medact.org and www.ippnw.org from 0900 on November 11.

The report will be available in English, Arabic, German and Italian. The Executive Summary will be available in English, Arabic, Sorani Kurdish and other languages.

The report is published in association with IPPNW and was part-funded by Oxfam and the Polden-Puckham Charitable Foundation.

Available for interview:

Sabya Farooq, author of the report.

Jane Salvage, editor of the report and author of *Collateral Damage: the health and environmental costs of war on Iraq* (Medact 2002)

Dr June Crown, President, Medact and former President, Faculty of Public Health Medicine of the Royal Colleges of Physicians, UK.

Mike Rowson, Director, Medact tel 07703 21 4469.

plus medical experts on specific topics such as mental health and war, and the health impact of the weapons used.

For more information and to arrange interviews contact Project Co-ordinator Gill Reeve on 020 7324 4740/4739; 020 7485 3067 (h) 07791 470486 (m); gillreeve@medact.org.

Continuing Collateral Damage: The health and environmental costs of war on Iraq

Executive Summary

The war on Iraq and its aftermath exacted a heavy toll on combatants and civilians, who paid and continue to pay the price in death, injury and mental and physical ill health. Between 21,700 and 55,000 people died between March 20 and October 20, 2003 (the date on which this report went to press), while the health and environmental consequences of the conflict will be felt for many years to come.

This toll is calculated in a comprehensive, independent survey written and researched by health professionals for the Iraqi Health Monitoring Project, managed by Medact and part-funded by Oxfam and the Polden-Puckham Charitable Foundation. Its conclusions are based on the best available information on a range of health indicators from sources in the public domain, and observations from expert individuals and organisations in and outside Iraq.

The impact of war on health is usually assessed primarily in terms of its most direct and visible effects – death and injury through conflict. Between 7,800 and 9,600 Iraqi civilians are estimated to have died in this way, and 394 Coalition combatants. Estimates of the number of Iraqi military deaths range from 13,500 - 45,000. In the absence of official body counts, the final toll will probably never be known. In addition, thousands of combatants on both sides as well as civilians suffered severe injuries, including amputations and mental trauma that triggers psychiatric disorders.

The full effects of war are, however, felt through many other less direct but potentially equally deadly or more deadly pathways. Here the death toll and disease burden could be numbered in tens of thousands. Yet it may never be known for certain, owing to the lack of accurate data, lack of functioning health information systems, lack of commitment to collecting or disseminating the data, and the absence of agreed conceptual models for measuring the effects of conflict on health.

The report assesses the impact of the war on the determinants of health, including limited access to clean water and sanitation; poverty and household food security; environmental degradation; disruption of social systems and public services, including health services; and social breakdown. There has been deterioration in all these determinants. The health of the Iraqi people is generally worse than before the war. And as documented in our earlier report, *Collateral Damage: the health and environmental costs of war on Iraq* (issued 12 November 2002), that state of health was already poor by international standards; any fresh conflict was likely to lead to further decline, at least in the short to medium term.

The impact of the war on the Iraqi environment is also documented. This includes extensive pollution of land, sea, rivers and the atmosphere that may have spilled over to neighbouring countries. Oil well fires created oil spills and toxic smoke. Troop movements destroyed fragile desert ecology. Explosive remnants of war and land mines killed and maimed people and animals and polluted the landscape. Bombardment destroyed topsoil and arable/grazing land as well as the physical infrastructure of buildings, roads, railways, power stations, sewage plants and telecommunications.

The report analyses the postwar occupation and reconstruction of Iraq from a health perspective. While acknowledging efforts to provide emergency health relief and restore battered health services, it notes that long-term health and wellbeing will depend on restoration of security, revitalisation of the economy, and reconstruction of all services that impact on health as well as regeneration of health services.

The report also advocates the need to study the long-term effects of war on mental and physical health, an internationally neglected issue despite the continuing presence of conflicts around the globe whose massive health and human cost is seldom fully counted.

Finally, the report's recommendations include a proposal for the re-establishment of an Iraqi health sector based on the principle that health and health care are fundamental social rights. Health system reconstruction provides an opportunity to correct past mistakes in the organisation of health services. It can be an important aspect of nation-building, and promote healthy inter-community and international relationships through which, as the World Health Organisation points out, health can act as a 'bridge to peace'.

Continuing Collateral Damage: the health and environmental costs of war on Iraq is issued in London on 11 November 2003 by the global health organisation Medact, the UK affiliate of International Physicians for the Prevention of Nuclear War (IPPNW) – winner of the Nobel Peace Prize in 1985. It is being released on the same day in Boston Massachusetts by IPPNW and by other IPPNW affiliates in 12 other countries.

The report can be found in English, Arabic and Italian on the Medact website www.medact.org and the IPPNW website www.ippnw.org, as can additional working papers on issues arising from the report.

This Executive Summary is also available in Arabic, Sorani and other languages on these websites.

WORKING PAPER NO. 1

Companion paper to *Continuing collateral damage: the health and environment costs of war on Iraq 2003*

Precision weapons vs. high human casualties

1) Database of fatal incidents involving civilian deaths and 'friendly fire'

Source	Type of weapon	Date used	Location/Target	Casualties
THE GUARDIAN Monday 24th March MIDDLE EAST ONLINE Saturday 22nd March	US cruise missiles	22nd March	Khormal village, North-East Iraq, headquarters of Islamic group Komala	At least 34 deaths and an uncertain number of refugees (The Guardian) - At least 50 deaths (Middle East Online)
THE GUARDIAN Monday 24th March REUTERS Saturday 22nd March	Bombing from US F-16s (includes cluster bombs)	22nd March	Civilian area, outskirts of Basra	"More than 60 Iraqi soldiers were reported killed". "The Iraqi information minister claimed that 77 civilians had been killed and 366 wounded in Basra, mainly by cluster bombs" (The Guardian) - "Al-Jazeera quoted hospital sources as saying a total of 50 people were killed" (Reuters)
THE GUARDIAN Thursday 27th March BBC NEWS ONLINE Wednesday 26th March	Two precision-guided bombs	26th March	Marketplace in Al-Shaab neighbourhood, Baghdad	14 Iraqi civilians killed and dozens injured. "US military officials admitted that one of their missiles might have gone astray and hit the market in Northern Baghdad"
HUMAN RIGHTS WATCH 1st April 2003	Unexploded cluster munitions	27th and 28th March	Southern Iraq	"Two U.S. Marines were killed in separate incidents on March 27 and 28 after stepping on unexploded cluster munitions delivered by artillery in Southern Iraq"
THE GUARDIAN Saturday 29th March	Air strike (Raytheon rockets?)	28th March	Marketplace in the Shawala neighbourhood, Baghdad	"By late evening, 52 corpses had passed through Noor hospital, horribly mangled and burned, according to the director, Tariq Tahia"
SUNDAY HERALD Sunday 30th March - THE GUARDIAN Saturday 29th March	US A10 tankbuster plane fired a DU shell	28th March	Basra area	One British soldier killed, three other wounded in a friendly fire.
TIMES ONLINE Saturday 30th March	US helicopter /machine gun fire	29th-30th March	Civilians trying to cross Nassiriya bridge	Death of at least 12 civilians, including children
THE GUARDIAN Friday 1st August	US missile	30th March	Ali Abbas' house, east Baghdad	14 members of the same family were killed, Ali Abbas' arms amputated

WASHINGTON POST Tuesday 1st April	Machine gun fire	31st March	Civilian car targeted at a US checkpoint near Najaf	At least 10 Iraqi civilians, including 5 children, were killed.
THE INDEPENDENT Thursday 3rd April ASIA TIMES ONLINE Friday, 4th April THE GUARDIAN Wednesday 2nd April	Cluster bombs	1st April	Civilian areas, Hillah	Director of Hillah hospital, said there were 33 dead and 310 wounded. But a later ICRC assessment confirmed "460 wounded, being treated in an ill-equipped 280-bed hospital" (Asia Times). There were "10 patients upon whom doctors had to perform brain surgery to remove metal from their heads" (The Independent).
BBC NEWS ONLINE Tuesday 8th April	Iraqi minefield (anti-tank mines)	2nd April	Kifri	A four-man team of journalists entered a minefield. Freelance Iranian cameraman, Kaveh Golestan, 52, died. BBC producer Stuart Hughes, 31, had his right foot amputated.
ISLAM ONLINE Thursday 3rd April THE GUARDIAN Friday 4th April	British and US cluster bombs	3rd April	Civilian areas, Baghdad	Iraqi information Minister said that 14 people were killed and 66 wounded
BBC NEWS ONLINE Sunday 6 th April	Bomb dropped by F-15 US plane	6 th April	Northern Iraq, near Kalak	US friendly fire killed 18 (Kurdish fighters and an Iraqi translator from John Simpson's team). At least 45 wounded.
THE GUARDIAN Saturday 17th May	Gunfire	7th April	Civilians, Baghdad	Three young men watching US troops entering Baghdad are mistaken for soldiers and shot: 1 dead 1 wounded. A taxi driver is killed.
BBC NEWS ONLINE Monday 7th April THE GUARDIAN Tuesday 8th April	Four bunker-buster bombs	7th April	Al-Mansour residential area in Baghdad	Number of deaths between 8 and 16.
THE GUARDIAN Wednesday 9th April	US tank-fired shell	8th April	Reuters suite, Palestine Hotel, Baghdad	Death of 2 journalists, Taras Protsyuk, 35, cameraman for Reuters and Jose Couso, 37, cameraman for Tele 5, a Spanish television channel. Three wounded.
THE GUARDIAN Wednesday 9th April	Two US bombs	8th April	Al-Jazeera satellite station's office in Baghdad	Death of Tarek Ayyoub, 35, Palestinian cameraman.
THE INDEPENDENT Friday 11th April	US tank fire	9th April	Civilians on Highway 8, Baghdad	At least 16 civilians killed
THE GUARDIAN Saturday 12th April ABC NEWS Friday 11th April	US gunfire	11th April	Civilian vehicle at a checkpoint near Nassiriya	Two children killed, nine people injured.
THE TIMES Wednesday 16th April	US gunfire	14th April	Protestors against newly-installed, pro-US local governor, Mosul.	US military said "at least seven" were killed - hospital sources said 15, with 28 wounded.
THE OBSERVER Sunday 27th April THE INDEPENDENT Sunday 27th April	Explosion of ammunition dump	26th April	Residential area, Baghdad	Local hospital recorded 12 dead (including six people members of the same family) and 40 injured. Five homes destroyed.

THE GUARDIAN Tuesday 29th April CNN Tuesday 29th April 2003	US gunfire	28th April	Iraqi demonstrators, Falluja	13 to 15 civilians were killed, and 50 to 70 injured.
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2) Why did more “precision weapons” result in more loss of human life?

About 68% of the munitions used in the 2003 war on Iraq were precision-guided, compared with 6.5% in 1991 (Conetta 2003; Moseley 2003). Yet the 2003 conflict resulted in more civilian casualties. The Project on Defence Alternatives’ report found that “the ratio of civilian to military deaths is almost twice as high as it was in the last Gulf War in 1991” (Conetta 2003). Moreover, the number of civilian facilities hit as well as the number of friendly fire incidents proves that precision guidance is not always capable of delivering “surgical strikes” that minimise human casualties. There are many possible explanations for this:

Air strikes

Technical faults: motors which move precision bombs’ fins can sometimes fail (*The Guardian* 1.4.03) – laser-guided weapons can also lose their lock on the laser target beam, especially through clouds or smoke (*The Guardian* 1.4.03)

Human errors: pilots guided toward the wrong target or given incorrect coordinates because of assessment errors or out-of-date geographical data – bad communication between ground and air forces and between different military units...

Bad weather: weather conditions can affect the efficiency of precision-guided weapons when clouds alter laser beams and winds push bombs or missiles off-course.

Urban warfare and indiscriminate attacks: a lot of air strikes targeted buildings and facilities in or near densely populated urban areas, because a lot of military facilities were situated in villages or towns. But Pentagon experts estimate that human and mechanical errors send 10% of precision weapons astray (*The Guardian* 1.4.03). This explains many incidents described in the table above. Carl Conetta also explains that the added confidence brought by the deployment of precision weapons means that Coalition troops resorted to bolder strikes: “in this war in particular we see that improved capabilities in precision attacks have been used to pursue more ambitious objectives rather than achieve lower numbers of civilian dead” (Conetta 2003).

Ground operations

Importance of ground operations and use of traditional weapons: on the ground, Coalition forces used traditional artillery and weapons which were not equipped with precision guidance systems. Hamit Dardagan, from Iraq Body Count, explained: “It’s all the Coalition was talking about [at the beginning of the war] – precision weapons. But if you are having a ground war situation, then it’s not much different from World War II. You have armoured vehicles, you have tanks, and you have heavy-calibre machine-gun fire. So these are pretty much not precision weapons in this sense at all” (Asia Times Online 2.10.03). So it is important to keep in mind that not all attacks on Iraqi forces were precision guided.

Scared and tense Coalition troops: the number of Iraqi ambushes and suicide attacks have prompted Coalition troops to react hastily and aggressively to potential threats, which explains why they often fired at civilian vehicles which failed to stop at checkpoints, or shot at civilians or crowds of civilians believed to be dangerous. The fact that some Iraqi combatants were wearing civilian clothes reinforced that fear and accounted for many killings of Iraqi civilians.

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The Guardian (29.10.03) “Up to 15,000 people killed in invasion, claims thinktank”

Moseley, Michael (2003) *Operation Iraqi Freedom – By the Numbers*, Assessment and Analysis Division, 30 April.
http://www.globalsecurity.org/military/library/report/2003/uscentaf_oif_report_30apr2003.pdf

WORKING PAPER NO. 2

Companion paper to *Continuing collateral damage: the health and environment costs of war on Iraq 2003*

The question of the legality of inhumane weapons used during the 2003 Iraq conflict

Cluster weapons

Definition: Cluster weapons can be air-dropped from a plane (cluster bomb), or fired and released from a missile, a rocket or an artillery projectile. They consist of two parts: a container (or dispenser) and submunitions – also called ‘bomblets’ – which are explosive projectiles designed to separate and spread once released from the dispenser. Like landmines, cluster submunitions can be *anti-personnel* (AP) – with the aim to kill or maim army personnel, and *anti-tank* (AT) – i.e. armour-piercing. There are also combined-effects munitions (CEM), which combine the properties of an anti-tank bomblet and those of an incendiary weapon.

Type of injuries: It is the “fragmentation effect” which is responsible for deaths and injuries, when fragments of the exploding munition, or stones and little objects blown by the blast wave (secondary fragmentation) hit and penetrate the human body. Fragmentation is not a side effect but an intended design objective of cluster weapons, and manufacturers generally seek to perfect the fragmentation of the outer casings of submunitions in order to increase the lethality of their weapons. Fragmentation wounds are small but the internal damage is devastating. Fragments travel through the skin and muscles and hit a bone, sending pressure waves into the body and causing internal bleeding. Fragments of broken bones can also lodge themselves in tissues, arteries and organs and intensify the bleeding. In addition to rapid loss of blood, internal bleeding can compress important organs such as the lungs and stop the circulation of blood or oxygen through the body. About 30% of victims die even with good life support equipment (Husum et al. 2000). Fragments lodged in the chest or in the skull are almost always fatal.

Status in international humanitarian law: **There is no specific international treaty banning the use of cluster weapons.** Therefore, cluster weapons are not illegal *per se*. However, because of their indiscriminate effect, the use of cluster munitions, especially in built-up areas, violates certain principles enshrined in Protocol I of the Geneva Conventions, namely article 48 on the parties’ duty to protect civilian populations, and article 51.4 on the prohibition of indiscriminate attacks:

Art. 48: In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives

Art. 51.4: Indiscriminate attacks are prohibited. Indiscriminate attacks are:

(a) Those which are not directed at a specific military objective;

(b) Those which employ a method or means of combat which cannot be directed at a specific military objective; or

(c) Those which employ a method or means of combat the effects of which cannot be limited as required by this Protocol; and consequently, in each such case, are of a nature to strike military objectives and civilians or civilian objects without distinction

According to these articles, the Coalition's use of cluster weapons during the conflict can be seen as 'illegal' under the Geneva Conventions for two reasons:

(1) Cluster weapons have an indiscriminate impact in space and in time. Unexploded bomblets remain on the ground after the conflict and constitute a health risk for anyone passing through the impact area, whether the original target was military or not. Therefore, their use contradicts the combatants' duty to protect civilians.

Although the Coalition Provisional Authority (CPA) is rightly involved in clearance of unexploded ordnance (UXO) throughout Iraq, the sheer number of UXO sites means that a significant amount of bomblets will remain a health hazard for years. In May 2003, the Humanitarian Operations Centre had located 1,102 Coalition cluster munitions strike sites (Landmine Action 2003a) – and despite extensive co-ordinated efforts from the CPA, the UN, Non-Governmental Organisations and humanitarian agencies, Iraqi civilians, Coalition soldiers, foreign journalists and UXO clearance personnel are still being wounded or killed by unexploded munitions every week. A spokesperson for Amnesty International London said: “these indiscriminate weapons leave a deadly legacy of de facto landmines that will kill and maim innocent civilians for years to come” (*The Guardian* 9.5.03).

(2) UK and US forces used cluster weapons in and around urban areas where civilians are bound to be the principal victims of cluster munitions (both on impact and in post-conflict UXO incidents). Indeed, the Landmine Monitor Report 2003 specified that “coalition use of cluster munitions has been confirmed in many populated areas throughout Iraq, including Baghdad, Basra, Hillah, Kirkuk, Mosul, Nasiriyah, and other cities and towns”. This is a direct breach of articles 48 and 51.4 of Protocol I of the Geneva Conventions, which establish the fundamental laws on the conduct of combatants in international armed conflicts.

Although international humanitarian law does not ban the use of cluster weapons, it is often believed that they should be made illegal on the basis of their long-term negative effects on health and reconstruction, which go well beyond the scope of the conflict's objectives.

Depleted Uranium

Definition: Natural uranium is composed of different isotopes including uranium-235 and uranium-238. U-235 is fissile and used to produce nuclear energy and nuclear weapons, but as natural uranium contains only 0.7% of U-235, 'enriched uranium' needs to be created by extracting U-235 from natural uranium. What remains is called 'depleted uranium' as it is deprived of U-235 and contains about 99.8% of U-238. Large amounts of DU are left over waste from nuclear weapons production and from the nuclear energy industry. DU is extremely dense and heavy, and, when used for military applications, it is placed in armour (tanks and aircraft) because its hardness and density can defeat conventional armour-piercing ammunition. But it is also used in ammunition, especially anti-tank weapons, because it can penetrate heavy armour. Amounts used depend on the projectile (bullets, shells or bombs); it varies from 300 grams to 7 tonnes in the bunker-busters of the type dropped on Baghdad.

Health risks: After penetration, DU forms a powder which ignites spontaneously and burns, leaving a fine dust of uranium oxides which can be inhaled or ingested and is *chemically toxic*. DU is also radioactive and therefore *radiotoxic*, although it has a very low activity.

Health effects of DU “depend on the route and magnitude of exposure (ingestion, inhalation, skin contact or wounds)” (Unep 2003a).

Chemical toxicity: the kidney is the organ which is the most sensitive to the chemical toxicity of DU, but 50mg of uranium oxides would have to be inhaled to cause interstitial nephritis (Holdstock 2000). Thus, only individuals going into a tank or bunker recently hit by DU munitions and inhaling significant amounts of dust would be susceptible to undergo DU poisoning.

Radiotoxicity: DU is radioactive and has the potential to damage the DNA and, in the long term, cause cancer. However, DU is only weakly radioactive (its half-life is about 4.5 billion years). Thus, external radiation (from emission of beta and gamma particles) is not likely to cause cancer, except in cases of prolonged exposure to large quantities of DU (Unep 2003a). But even in that case, the main risk comes from internal radiation, i.e. alpha-particle emission from inhaled dust which becomes embedded in the lungs and can eventually lead to lung cancer. Professor Brian Spratt, chairman of the Royal Society working group which produced a report entitled “The Health Hazards of Depleted Uranium” released in March 2002, said:

most soldiers and civilians will not be exposed to dangerous levels of depleted uranium. However, in certain circumstances the exposures may be high and there would be a risk of heavy metal poisoning that could lead to long-term kidney damage for a few soldiers, as well as the increased risk of lung cancer” (Royal Society 2002)

If DU played a part in the reported increase in the number of Iraqi cancers and birth defects and/or in the illness dubbed “Gulf War Syndrome” among US Gulf War veterans, no comprehensive scientific study has ever been carried out to prove it, and therefore the precise health risks of DU are yet unknown (WHO 2003). This explains why, in March 2003, the defence secretary, Geoff Hoon, denied that depleted uranium was a health hazard, saying there was “not the slightest scientific evidence” to suggest that DU could be toxic (*The Guardian* 25.4.03). But The Royal Society urged the Ministry of Defence to publish details of where and how much DU was used. As a result, the MoD announced that soldiers returning from the Gulf will be offered urine tests to check levels of DU in their bodies. In August, *The Sunday Mirror* announced the Government’s decision that all veterans were to benefit from a new medical test which could determine the health effects of DU. It said “scientists” have “developed a way of tracing even minute amounts of depleted uranium in their bodies” and that “all 45,000 troops who served in the latest Iraq conflict have automatically been given the right to be tested” (*The Sunday Mirror*, 3.8.03).

Status in international humanitarian law: **No international treaty currently bans the production or use of DU weapons.** Indeed, DU weapons are not chemical or biological weapons, therefore they cannot be considered to be illegal under the 1972 Biological Weapons Convention and the 1996 Chemical Weapons Convention. They are not nuclear weapons either and thus cannot be banned under the 1970 Nuclear Non-Proliferation Treaty. However:

(1) the use of DU weapons goes against established principles of humanitarian law, notably principles of the Geneva Conventions and some UN guidelines relative to:

- the protection of civilian populations (See Articles 48 and 51.4 above)
- the limitation of unnecessary human suffering (Art.35.2)
- the limitation of damage to the environment (Art. 35.3 and 55.1)

Art. 35.2: It is prohibited to employ weapons, projectiles and material and methods of warfare of a nature to cause superfluous injury or unnecessary suffering

Art. 35.3: It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment

Art. 55.1: Care shall be taken in warfare to protect the natural environment against widespread, long-term and severe damage. This protection includes a prohibition of the use of methods or means of warfare which are intended or may be expected to cause such damage to the natural environment and thereby to prejudice the health or survival of the population

Until scientific studies establish the precise health impact of DU on the human body, armed forces should refrain from using DU weapons on the battlefield, and especially in built-up areas, for fear of committing potential “war crimes” (Doug Rokke, *The Sunday Mirror* 3.8.03). The effects of depleted uranium are indiscriminate and even when used on military targets, DU weapons leave a chemical and radioactive toxic residue which can spread over large areas.

As for the environmental damage, several studies by the UN Environment Programme (Unep) highlight the negative environmental effects of DU. Through studies in Kosovo, Serbia, Montenegro, Bosnia and Herzegovina, Unep found that contamination levels are generally very low, limited to a couple of metres around the impact of the projectile, and do not constitute an immediate radioactive or toxic hazard for the environment or human health (Unep 2003b). But the report on Bosnia and Herzegovina, published in March 2003, while confirming low levels of ground contamination, found proof of groundwater contamination (seven years after the conflict) and recommended the use of alternative water sources. Also, Unep scientists detected air contamination in some of the sites studied and recommended a decontamination of the buildings in use on these sites. If damage to the environment is thus proved, the use of DU should be contrary to article 35.3 of Protocol I.

(2) after NATO's use of DU weapons in the Kosovo campaign in 1999, the Council of Europe parliamentarians called for a world ban on the production, testing, use and sale of DU weapons, asserting that NATO's use of DU would have "long term effects on health and quality of life in South-East Europe, affecting future generations" (Council of Europe 24.1.01).

(3) the UN Sub-Commission on Prevention of Discrimination and Protection of Minorities issued two Resolutions (United Nations 1996a; United Nations 1997) on the need to stop the production and use of weapons of mass destruction, including DU weapons:

“The Sub-Commission [...] urges all States to be guided in their national policies by the need to curb the production and the spread of weapons of mass destruction or with indiscriminate effect, in particular nuclear weapons, chemical weapons, fuel-air bombs, napalm, cluster bombs, biological weaponry and weaponry containing depleted uranium” (United Nations 1996b)

Although DU weapons are not illegal, their use goes against basic principles of international humanitarian law as (1) they have the potential to contaminate groundwater reserves and pollute the air (2) they have the potential to cause cancer and have other long-term negative health effects on combatants and civilians. Moreover, the use of anti-tank DU weapons and bunker buster DU-tipped bombs on above ground civilian targets in the centre of Baghdad during the war increased urban populations' exposure to DU, which can only exacerbate the potential negative effects of DU on civilians. This is why many people believe that DU should be made illegal under international customary law.

Landmines

Definition: Landmines cannot be aimed: they lie under ground surface until activated by an individual or a vehicle. They are indiscriminate weapons. An anti-personnel (AP) landmine is "designed to be exploded by the presence, proximity or contact of a person and that will incapacitate, injure or kill one or more persons" (Mine Ban Treaty). Anti-tank (AT) landmines can only be exploded by more than 100 kilograms of pressure.

Type of injuries: Iraqi forces used AP blast mines which "cause foot, leg, and groin injuries and secondary infections usually result in amputation" (ICBL 2003) as well as AP fragmentation mines, which "project hundreds of fragments at ballistic speed of up to 50 meters resulting in fragmentation wounds. Some fragmentation mines contain a primary charge to lift the mine above the ground (about 1 to 1.5 meters) before detonating which can injure an adult's abdomen, genitals and take off a child's head" (ICBL 2003). The International Campaign to Ban Landmines explains that "those who survive the initial blast usually require amputations, long hospital stays, and extensive rehabilitative services" but that "many others die in the fields from loss of blood or lack of transport to get medical help".

Landmines and International Humanitarian Law: Because they are indiscriminate and responsible for incessant fatalities in many post-conflict regions of the world ("mine deaths and injuries in the past few decades total in the hundreds of thousands", ICBL 2003), landmines acquired their own convention: the **1997 Convention on the Prohibition on the Use, Stockpiling, Production and Transfer of Anti-personnel Mines and on their Destruction** (or Ottawa Treaty) bans signatory states to produce, acquire, use, stockpile or transfer anti-personnel mines or even to assist a State Party to the Treaty in doing such things. The UK ratified the Ottawa Treaty in July 1998. The US and Iraq have not signed the treaty (NB: Anti-Tank Mines are not banned by the Ottawa Treaty). So absurdly, no party actually violated the law since British forces did not use landmines; US forces used command-detonated Claymore directional fragmentation mines, which are permitted under the Mine Ban Treaty (Landmine Action 2003b); and Iraq used all sorts of landmines but has not signed the Ottawa Treaty.

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WORKING PAPER NO. 3

Companion paper to *Continuing collateral damage: the health and environment costs of war on Iraq 2003*

Mental well-being in Iraq – six months after the start of Operation Iraqi Freedom

This paper is based on publicly available sources and discussion with health professionals in the UK, who have family, have visited or have particular interest in Iraq. We hope it will help keep mental health issues in the minds of public health specialists and policy makers. We believe the long-term issues of individual and social healing from this long period of trauma have great consequence for the region and for the world.

Background

By the mid 1970s Iraq had well established Psychiatric training for doctors following UK models of practice. Compared to other medical specialties psychiatry did not have high priority or prestige. Mental disorders were traditionally seen as spiritual matters requiring spiritual healers; psychological explanatory models were not common. The main support for people with mental disorders came from the family and the social stigma of such disorders was high.

During the 1980s the regime of Saddam and the war with Iran created a social and economic downturn. Psychiatry did not progress; many doctors left the country; there were few other professions in mental health, psychology was sparse and nursing had low value as a profession. There was no community based or multi-disciplinary service. The main models of psychiatric treatment remained clinic based with the family providing the basic supports. There was a long stay institution in Baghdad, Al Rashad, which had up to 1,200 beds for those people whose families could no longer cope. The major teaching hospitals in Baghdad and elsewhere had psychiatric inpatient units for short stay.

During the 1990s there were shortages of medicines and publicly funded services declined through lack of money and wages. Psychiatry, as other specialties, developed a private sector, with many doctors working mornings in the state sector and running private clinics in the evenings. There was professional isolation with limitations on communication being imposed externally and internally by the regime. Towards then end of the 1990s and leading up to the current war there had been some relaxation of sanctions and NGOs had been actively working in Iraq. However in 1999 Unicef reported “many adolescents of both sexes suffer from malnutrition and related health problems, but also from depression as they see very little hope for their future”. The ICRC had been supportive of mental health services and during 2001 and 2002 had refurbished the hospital at Al Rashad, helping to develop occupational therapies there.

By the beginning of 2003 the picture was of psychiatric services being limited to Baghdad and a handful of major cities, mainly on an outpatient basis, with no access to newer medications. For a population of 25 million there were less than one hundred psychiatrists,

no community services, and a handful of psychologists. With half the population being under 18yrs there was no child psychiatry; the existence of social services and school psychological services are not known about. There seems no available epidemiological information on mental health, no prevalence rates of common disorders or of severe mental illness, no suicide rates, and no data about service usage. There is no systematic data on wider public mental health issues such as domestic violence, child abuse and substance abuse.

Operation Iraqi Freedom

The war started with a prolonged bombing campaign designed to create “shock and awe”. From media and medical reports there was undoubtedly an increase in acute anxiety during this period of bombing (Dyer, 2003).

There is likely to have been an increase in common mental disorders relating to anxiety and mood disturbance. Although the use of the term Post Traumatic Stress Disorder as a diagnostic category has been criticised because of its failure to take account of the social context, (Bracken et al 1995) it has value in quantifying and identifying those with particular clusters of distressing psychological experiences (Mezey and Robbins, 2001). There is no data at present on prevalence, however personal reports and the media suggest that these issues will be significant.

Separating out the impact of over twenty years of oppressive rule, two previous wars and the period of sanctions from the effects of this war will not be possible in any precise manner. The prevalence of common mental disorders is likely to be similar to other destabilised conflict areas and much greater than in stable countries (de Jong, Komproe and Ommeren, 2003). Long-term morbidity will include more suicides, greater disability, increased drug and alcohol abuse and more social and domestic violence, all major obstacles to the restoration of a stable society.

Cultural attitudes to violence, especially spiritual and other explanations of violence and social expectations influence how a population is affected by violence. The relevance of psychological models, categories and treatments to the Iraqi situation needs careful consideration.

The incidence of major psychosis is usually unchanged by war, however they are a vulnerable group. In May the Al Rashad hospital was looted, the basic services to the hospital were disrupted and the 1,200 inpatients allowed to leave. It is now reported that 600 of the former patients have returned and it is likely that those who have not returned will have perished, unless supported by their families.

Of great concern is the impact on children and young people. Half the population is under 18yrs. The incidence of conduct and emotional disorders is likely to be high however the understandings and definitions of child and adolescent mental disorders will be complex, overlapping with broader social issues of moral breakdown, violence, and educational failures (Machel, 2001). The management of these issues will also be complex and simple reductions to psychological interventions will be insufficient. Maximising the mental health of the younger generations in Iraq will require coordinated work from many sectors.

Cognitive developmental disorders are likely to be increased through association with malnutrition and poor general health.

Post War phase and Psycho-social concerns

The social fabric influences the course of stress disorders. Where the social order is secure and predictable then post traumatic restoration is faster and visa versa (Ajdukovic, in Press)

In some respects the economic and material fabric of society has begun to improve. Many people in state occupations, doctors, nurses, teachers etc are now receiving salaries well above the pre war level. Food security has largely been maintained. Hospitals are reporting better access to drugs, and following the initial losses through looting many are now receiving new equipment. There has not been the widespread social chaos feared by many and the family structures have largely remained in place. In many Southern cities religious and civic leaders have helped restore order.

However, continued disruption of electricity, fuel and water contribute to uncertainty, but most important is the continued uncertainty about personal security. The risks of robbery, of burglary, of kidnapping and of violence are well reported. There seems an ongoing difficulty for the responsible authorities to establish law and order. The current situation creates psychological insecurity which compounds the anxiety and mood related disorders arising from the war, from the previous repression and economic difficulty:

“Because of the tremendous, lethal threat to schools, a lot of parents forbid their children attending schools. Many children were traumatised because of the exposure to the bombing of Al-Khadra police station. More than four schools are very close to the bombing site, and the children there left their classes for the last few days, and parents are very apprehensive regarding re-attending the school.” (personal communication, 2nd November from a psychiatrist in Iraq)

The psychological effects of living under dictatorship where violence is both ruthless and unpredictable include disruption of trust in relationships, fear of betrayal and increasing violence in family and social conflicts. Concern is expressed that the moral fabric of society becomes devalued; to progress individuals must compromise themselves. Children growing up in this environment may be particularly at risk of accepting violence as the standard way of achieving status and material goods.

Poverty, uncertainty, unpredictability, poor social controls diminish the capacity for society to be “good enough” for positive child development, increases the likelihood of young people developing strategies of violence and seeking identity through fundamentalist groups that promise certainty. There is serious concern that the emergent social environment in Iraq will foster extremism, terrorism and the trans-generational transmission of hatreds.

At the same time it is essential to recall the resilience of people to traumatic events and the capacity for societies to reconstruct themselves after war and devastation. The development of non-violent coping to the events of the last two decades will be a critical issue for Iraq and for the world.

Combatants

There has been a growing recognition of the psychological distress experienced by soldiers and the long-term consequences of these (Jones et al, 2002). The issues of the Gulf War syndrome have yet to be resolved. Before this war started there were commitments given to the UK armed forces that adequate psychological support would be available. There is currently little data on the impact of the acute episode of fighting on the mental well being of the coalition soldiers.

The post war situation of the last four months must have its own impact. There is well documented evidence of stress on soldiers in areas of tensions where they remain targets for terrorist groups (Hotopf et al, 2003). How this is being recognised and responded to is not clear.

The impact of the war on Iraqi combatants must have been significant. This was primarily a conscription army that had little sense of loyalty to the regime. The mental health of combatants appears protected by the sense of attachment they feel to the purpose of the conflict. The shock and awe tactic was aimed at combatants and many would have known the history of the first Gulf War where tens of thousands of Iraqi conscripts died within the first few days. The levels of acute stress must have been great.

These soldiers were discharged without means of support, with no occupation, with the same uncertainties faced by the rest of the population and little means of resolving the acute emotional turmoil created by the conflict. The failure to consider the psychosocial needs of several hundred thousand young men who had been conscripted into the Iraqi army may be one of the most serious and long lasting mistakes of the post conflict management.

Key Issues for the future

Mental health services:

The overwhelming evidence at a global level is that if the mental health needs of a population are to be met adequately then psychiatric services need to be publicly funded, driven by assessment of population needs and free at the point of delivery. Many people with serious mental disorder do not have the capacity to negotiate a private system of treatment because of innate problems, rejection by the family, or both. Some key points are:

- Restoration of the services to be used as building blocks
- Local opinion to determine the next steps for development
- Establish user and carer forums for service development
- Examine links between primary care and the specialist services
- Workforce training and development strategies for all professions
- A mental health act
- Data collection on key indicators and evaluation of interventions
- Establish relationship with the traditional health sector
- Seek partnership between the services and NGOs and sharing of information
- Establishing a Mental Health policy board with high level involvement in the Ministry of Health with clear identification of responsibilities for mental health

Promotion of mental well-being:

This needs a population approach, with multi-sector involvement and coordination at central government. Given the differing models and methods of understanding mental health there will need to be considerable discussion between different sectors, with sharing of ideas and experience as

- Discourse on models of understanding involving all sectors of society
- Definitions, Recognition and Assessment of concerns
- Discourse on models of intervention
- Pilot studies, assessments and sharing of ideas
- Clear links to mental health services
- Establishing responsibilities at a high level within the relevant ministries and high level means of inter-sector cooperation

Promotion for children and adolescents:

- Family security and fulltime education
- Educational strategies involving health sectors
- Recognition of abuse

Promotion for adults:

- Political and personal security
- Social roles and activities
- Recognition of domestic violence and gender issues

For society:

- A discourse on ways of creating social justice and reconciliation.
- The two main approaches to this are through courts to identify and punish the perpetrators of crimes and the establishment of Truth commissions that publicly acknowledge the wrongdoings and the suffering. The first step to this process is developing democratic involvement and personal security.

Actions for Medact:

- Continue monitoring health in Iraq through existing and new contacts
- Be a vital part of a network of concern for mental well being
- Continue the policy analysis of post conflict health management
- Research on post conflict mental health, models of coping, cycles of violence
- Interventions through VCH group, help to the helpers, dialogue with Iraqi psychiatrists

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