

reduces the food that is available to the family. This would give an incentive for both **under-reporting deaths**, and for **claiming non-existent living members**. Both would lower 'deaths per person-month', and 'have the effect of **lowering mortality estimates** and thus lowering our estimate of the death toll associated with this conflict,' in the words of the study.

EXCLUDING FALLUJA

The survey team speculated that its sampling strategy might have 'missed small areas where a **disproportionate number of deaths occurred**, or conversely, selected a neighbourhood that was so severely affected by the war that it represents virtually none of the population and thus has skewed the mortality estimate too high.'

In Kosovo, one study apparently showed that 'there can be a dramatic clustering of deaths in wars where many die from bombings.'

Falluja may have been a relatively 'small area where a disproportionate number of deaths occurred'. It is not clear, however, that it was the only such 'small area'. **Excluding Falluja may have caused a major under-estimate:** 'In our Falluja sample, we recorded 53 deaths when only 1.4 were expected under the national pre-war rate. This indicates a point estimate of 200,000 excess deaths' (in the Falluja cluster of 739,000 people).

Including this figure would nearly **triple** the estimate of post-invasion deaths. The survey team comments: 'the uncertainty in this value is substantial and implies additional deaths above those measured in the rest of the country.'

CONCLUSION

By effectively **excluding military deaths**, the survey is very likely to have produced an under-estimate of the post-invasion death toll in Iraq. Given the incentive for households to **under-report deaths** in general, in order to maximise food rations, and to **under-report deaths of insurgents** in particular, in order to avoid the attention of the authorities, there is reason to suspect further under-estimation of the death toll.

While there may have been serious uncertainties associated with the significance of the Falluja data, the **complete exclusion of Falluja**, the **inclusion of only a rare, undamaged part of Sadr City**, and the **exclusion of all other heavily-damaged cities**, means that the *Lancet* survey almost certainly under-estimates the death toll in Iraq.

Thus the conclusion that 'the death toll associated with the invasion and occupation of Iraq is probably about 100,000 and **may be much higher**'.

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The Likely Death Toll In Iraq

JNV Anti-War Briefing 74 (14 Dec. 2004)

OVER 100,000 DEAD?

The *Lancet*, the world's leading medical journal, has published an estimate that 98,000 Iraqis have died because of the invasion and occupation of Iraq. This estimate (usually approximated to 100,000 deaths) includes Iraqi civilians and insurgents, and includes all causes of death, both violent and nonviolent.

The 100,000 figure is likely to be an under-estimate.

IGNORING FALLUJA

The *Lancet* estimate is based on a survey of 988 households containing 7868 residents in 33 'clusters' throughout Iraq. One of the 33 'clusters' visited during the study was in the wartorn city of Falluja.

The number of violent deaths in Falluja was much higher than in the other areas visited: 'More than a third of reported post-attack deaths (n=53), and two-thirds of violent deaths (n=52) happened in the Falluja cluster.' Because of this, the Falluja data was excluded in calculating the 100,000 figure.

HOW THE ESTIMATE WAS COMPILED

The estimate was based on visiting 30 households in 32 randomly selected 'clusters' throughout Iraq. (Note that Falluja, the 33rd cluster, is not included in the following calculations.) In each house, questions were asked about births and deaths during the period from 1 January 2002 to mid-September 2004 (when the interviews were carried out).

The interviewers asked who had lived in each house and how many of these residents had died during this period - and the cause of their death.

Crucially, the survey only counted the deaths of people who had lived in the house for at least **two months** before their death. It did not count the deaths of family members who were living elsewhere, or visitors who stayed for less than two months.

DEATHS PER PERSON-MONTH

The next step was to calculate the number of 'deaths per person-month' for each household, the building blocks of the national estimate. In other words, if

five people had lived in a house throughout the whole post-invasion period (17.8 months), and a sixth resident died after living in that house for eleven months of the post-invasion period, that would be calculated as one death for 100 person-months, or 0.01 deaths per person-month. ($5 \times 17.8 = 89$ person-months, then add 11 person-months to make 100).

The estimate was compiled by adding together the 'deaths per person-month' for all households in each cluster, and adding together all 32 clusters, for the period before the war, and for the period after the invasion. Then the pre-war figure (0.00042 deaths per person-month) is subtracted from the post-invasion figure (0.00066), and multiplied by the number of people in Iraq (24.4 million) and the length of the post-invasion period (17.8 months).

This gives an estimate of the number of extra deaths after the invasion, or what the *Lancet* study calls 'the death toll associated with the conflict'. The people who would not have died if the death rate had continued to be the same as before the war: 98,000 Iraqis. (To repeat: not all of these are violent deaths; not all of them were non-combatant civilians).

CURIOUS RESULTS

There was a curious aspect of the *Lancet* results: 'It is surprising that beyond the elevation in infant mortality and the rate of violent death, mortality in Iraq seems otherwise to be similar to the period preceding the invasion', despite the degeneration in drinking water quality and in health care, for example.

This stability in nonviolent death rates seems implausible, but does not indicate that the 100,000 figure is an under-estimate, rather the opposite.

EXCLUDING MILITARY DEATHS

On the other hand, the fact that the study only counted deaths of people who had been resident in the house for two months beforehand 'might have under-represented groups such as the homeless, transients, and military personnel', said the survey team. This rule 'probably excluded most military casualties'.

In the absence of data about military deaths, we do not know the scale of the under-estimate that this represents.

EXCLUDING ALL HEAVILY DAMAGED AREAS

The cluster selection process was a random one. Apart from Falluja, none of the other heavily damaged Iraqi cities was chosen for the survey, cities such as Ramadi, Najaf, or Tallafar. One of the clusters surveyed was in the Shia slum in Baghdad known as 'Sadr City', the scene of intense fighting since the war. But the Sadr City cluster was 'by random chance in an unscathed neighbourhood with no reported deaths from the months of recent clashes.'

And, of course, the only heavily damaged cluster that was selected (in Falluja), was excluded from the estimation process.

CHECKING FOR AN EXAGGERATED DEATH RATE

The estimate would be seriously affected if families over-reported recent deaths. In order to check whether over-reporting was occurring, investigators asked for death certificates at the end of interviews twice in every cluster.

'In 63 of 78 (81%) households where confirmations were attempted, respondents were able to produce the death certificate for the decedent. When households could not produce the death certificate, interviewers felt in all cases that the explanation was reasonable - eg, the death had been very recent, the certificate was locked away and only the husband who was not at home had the key.'

'Interviewers also believed that in the Iraqi culture it was unlikely for respondents to fabricate deaths... We believe it is unlikely that recall bias existed in the reporting of non-infant deaths [over-reporting recent deaths and under-reporting earlier deaths], because of the certainty and precision with which these deaths were reported, and the importance of burial ceremonies in the Iraqi culture.'

THE INCENTIVES TO HIDE DEATHS 1

There would be a motivation to hide the deaths of insurgents from investigators: 'The under-reporting of adult deaths recently or since the invasion to hide combatant deaths would lead us to underestimate the death toll associated with the invasion and occupation of Iraq.'

THE INCENTIVES TO HIDE DEATHS 2

Another distortion, in the opposite direction, would occur if there were more residents in some households than were reported to the survey - if, for example, families were hiding insurgents or suspects. This would mean that the postwar ratio of 'deaths per person-month' should be lower, because there were actually more 'person-months' in some households than were reported.

The *Lancet* study concluded that this possible 'hidden insurgent effect' was outweighed by a more powerful 'food ration' effect: 'Although certain individuals might wish to remain hidden, the study team thought that respondents would claim to have more household members than were actually present to justify more ration distributions.'

Families in Iraq have food rations that are issued per person (the ration card is the most important identity card in Iraq, and is the basis for the electoral registration and voting process). Every death in the family that is reported