9 January 2008

Iraq Family Health Survey - Mortality Study
Q & A

GENERAL AND CONTEXT

Q: Why is it so difficult to know how many people have died in Iraq since the 2003 invasion?
A: The best way to monitor mortality is a death registration system where every death is recorded, with a medically certified cause of death. Iraq has no well-functioning system. Without reliable death registration systems, the best estimations of mortality levels and trends rely on household surveys. Family members are asked to report about deaths in the last 3 to 5 years and such reports are often not complete, especially if people have moved away. In conflict situations, it is even more complex, as data collection is difficult because of insecurity, and violence tends to be very localized.

Q: Why can a survey of households not tell exactly how many people have died from violence and why do the results of different surveys vary so much?
A: A household survey is based on a sample of households spread over the country. Larger surveys, which include more households, give a more exact picture of the situation than small surveys. However, even in a large survey the results have to be interpreted with caution, as violent deaths can be underreported because families have moved away or because highly insecure areas cannot be visited.

Q: What was the purpose of the Iraq Family Health Survey?
A: To update and expand the Iraqi national health database and to provide a basis for the development of health and population policies and programmes. It will help Iraq monitor health trends and track its progress in meeting international development goals.

Q: What other health indicators were measured in the survey?
A: Other health indictors explored included chronic illnesses, reproductive health, mental health status, family health spending patterns, environmental risk factors and domestic violence.
The head of the household responded to general questions, while a randomly selected adult in the home responded to mental health questions and all women aged between 15 and 49 living in the home responded to reproductive health questions.

SURVEY IMPLEMENTATION

Q: How was the information on deaths collected?
A: Interviewers asked the head of each household whether the household had experienced any deaths since June 2001. For each death, information was recorded on sex, age, time and place of death, whether medical attention was sought prior to death and the main

cause of death as reported by the survey respondent. The surveyors then assigned the cause of death to one of 23 probable causes.

Q: How broadly were the households distributed across Iraq?
A: Households in all 18 governorates of Iraq were surveyed. The Iraq Family Health Survey was designed to provide estimates on a wide range of health-related indicators at the national and governorate levels as well as by rural and urban residence. The country's 18 governorates were divided into 56 different sampling domains (strata). Apart from Baghdad, each of the 17 governorates was divided into three domains (metropolitan or the governorate capital; other urban, and rural area). For Baghdad governorate, five sampling domains were created (Sadr City, Rusafah Side, Karkh Side, other urban and rural Baghdad). Each of the 56 domains was allocated 18 clusters (or census enumeration areas) and from each cluster 10 households were randomly selected. Therefore, the target sample size was 10 080 households. In three governorates, more clusters were then added to compensate for expected difficulty in visiting, bringing the total to 10 860.

Q: How many of the selected neighbourhoods and villages (clusters) could not be visited?
A: A total of 115, or 11%, of the 1,086 originally selected clusters could not be visited due to insecurity. These clusters were mostly located in Anbar and Baghdad.
Calculations were made to account for this (see Analysis and Interpretation of Results section for details).

Q: What quality control measures were taken in conducting the survey?
A: To ensure the best possible quality, the survey involved multiple agencies, including the Iraqi Central Organization for Statistics and Information Technology (COSIT), which has conducted many surveys. Training of central and local supervisors from all 18 governorates was conducted in Amman, Jordan. Training of the interviewers was conducted separately in each governorate, by the local supervisors, in coordination with central supervisors, for one week during May-June 2006. A one-day refresher training was also conducted a day before the start of the survey in each governorate. A one-week training course was conducted for the central data editors on checking the questionnaire responses and the cluster tracking forms for completeness and consistency.

The survey fieldwork was implemented in phases to ensure close supervision, especially in the areas with high levels of insecurity. In 14 South/Centre governorates, the fieldwork was conducted during August-September 2006. In Anbar governorate, the fieldwork was conducted during October-November 2006. The teams were closely supervised throughout the fieldwork by the field, local and central supervisors. Each week, checked and completed clusters in the South/Centre were sent to the Federal Ministry of Health in Baghdad for further checking and editing. The central supervisors and editors reviewed all forms and returned any that were incorrect or incomplete to the respective governorate. In such cases, interviewers returned to the homes to complete the questionnaires.

Q: Who conducted the interviews?
A: The interviewers were employees of the Iraq Ministry of Health. They underwent special training and were closely supervised by Ministry of Health staff. The survey sample selection was carried out by COSIT, with the assistance of WHO experts.

Q: Who paid for the survey?
A: The United Nations Development Group Iraq Trust Fund and the European Commission. Technical assistance was provided by the World Health Organization.

Q: Are there factors that provide confidence in the survey results?
A: Response rates were very high. Results on many indicators, such as household composition, are consistent with previous sources. Results on mortality obtained by asking the household for deaths in the last five years were consistent with results from the same survey obtained by asking women about the mortality of their brothers and sisters.

ANALYSIS AND INTERPRETATION OF RESULTS

Q: What factors were taken into account when calculating the death toll estimate?
A: The estimate takes into account the fact that in household surveys, there is underreporting of deaths, especially because people move away. Collecting information on deaths is even harder in places experiencing conflict because the population moves around more, making households unstable. A death in the family can lead to the break up of a household, and if the death was sectarian, the family is even more likely to move away. In the Iraq Family Health Survey, deaths may have been underreported by one third to one half and the estimate, a range of between 104 000 and 223 000, incorporates both possibilities. The results were also adjusted to compensate for the fact that some of the targeted households could not be visited because of the security situation and estimates that in those areas, deaths were likely to be higher than in other places. Finally, the range takes into account uncertainty related to statistical sampling error and uncertainty due to a lack of exact knowledge of the size of Iraq's population.
Migration affects the estimate of the total population. Iraqis are known to have migrated to safer neighbourhoods within their country as well as out of the country. The estimate range includes a calculation that up to 2 million people may have moved out of Iraq during the analysis period of March 03-June 06.

Q: What was done to account for the neighbourhoods and villages (clusters) that could not be visited in high insecurity areas?
A: Most of the 115 neighbourhoods or villages (clusters) that were not visited are located in Baghdad and Anbar. Since past mortality is likely to be higher in these clusters than in those that were visited during the survey, we used a formula based on information from the Iraq Body Count to estimate how much higher the mortality in these missing areas could have been. Based on this formula, violence-related mortality in the missing areas in Baghdad was assumed to be 4 times higher than in the visited clusters. In Anbar, the

violence-related mortality rate in the missing areas was assumed to be about 2 times higher than in the visited clusters.

Q: What happened to mortality due to causes other than violence?
A: The non-violent mortality rate increased by about 60%, from 3.07 deaths per 1000 people per year before the invasion to 4.92 deaths per 1000 people per year in the post-invasion period. This was not further addressed in this analysis, which focused on mortality due to violent deaths. Further analysis would be needed to calculate an estimate of the number of such deaths and to assess how large the mortality increase due to non-violent causes is, after taking into account that reporting of deaths longer ago is less complete. The rates are similar to those reported in other countries in the region, although this may be indicative of some death underreporting in Iraq. For instance, Oman and Bahrain have an overall mortality rate of about 3, while Jordan's is about 4, Algeria's is about 5 and Egypt's is about 6.

COMPARISON WITH OTHER SOURCES

Q: How does this estimate compare with previous estimates?
A: Another household survey, conducted in mid-2006 by Johns Hopkins University and Baghdad's Al-Mustansiriya University, published in October 2006, estimated that 601 027 Iraqis died of violent causes between March 2003 and June 2006. That survey focused on mortality only and involved 1849 households in 47 clusters, whereas the new study involved more than five times as many households and 20 times more clusters.

Another estimate of deaths occurring during the same time frame comes from the Iraq Body Count project, a group that bases its figures on media reports. It registered 47 668 civilian deaths due to violence during the period studied in the Iraq government/WHO survey. That method is affected by considerable underreporting, but has proven to be a valuable way of monitoring trends over time. Trends seen in the Iraq Body Count figures are consistent with those observed in our survey.

Q: Which figure is more reliable: the media-based body count or the new survey?
A: The Iraq Body Count is likely to underestimate violent deaths because a substantial number do not appear in the media sources included in the monitoring system. The question is by how much - our survey indicates that about 1 in 3 deaths were reported. The trend in the media reporting system during the 3 years post-invasion (43, 32 and 55 violent deaths per day in the first, second and third year respectively) is fairly consistent with what was found in the Iraq Family Health Survey (128, 115 and 126 violent deaths per day respectively).

Q: Which figure is more reliable: the new survey or the 2006 household survey?
A: The 2006 household survey shows a very different trend than that seen in the new survey and the Iraq Body Count, with increasing numbers of deaths per day, rising from 231 during 2003-2004 to 491 during 2004-2005 and 925 during 2005-2006. The biggest

difference between the 2006 household survey and the other two sources is in the figure for the third year. Most of those deaths occur in six high mortality governorates outside of Baghdad, while in the Iraq Body Count and the new survey, most deaths occur in Baghdad.

The difference between 925 and 126 violent deaths per day is very large. To reach 925, the Iraq Family Health Survey would have to have missed more than 80% of deaths detected in the smaller survey. This is highly unlikely given the much larger number of clusters and households visited in the new survey.

The mortality due to non-violent causes during the full period studied shows greater agreement between the two surveys in terms of the level:

Q: Are combatant deaths included?
A: The Iraq Body Count does not include combatant deaths among Iraqis, but both the household surveys include such deaths, provided they concerned people living in households in Iraq.

Q: Does this estimate represent "excess" violent deaths - those attributable to the invasion?
A: No. It is an estimate of how many violent deaths occurred between the March 2003 invasion and June 2006. The study did not measure whether or not those deaths would have occurred had there been no invasion. However, the mortality rates for 2002 and early 2003 showed that mortality due to violent causes was low before the invasion.

Q: Why study deaths only until June 2006, rather than beyond that date?
A: To allow the findings to be comparable with previous estimates, which were for a three-year period.

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