RHR Department of Reproductive Health and Research

Factsheet

Proportion of births attended by a skilled health worker 2008 updates

Introduction

The most recent estimates of maternal mortality developed by the World Health Organization (WHO), the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA) and The World Bank in collaboration with scientists from academia, show that at least half a million women have died due to pregnancy-related causes in 2005 (WHO/UNICEF/UNFPA/The World Bank, 2007). The estimates for the first time analysed the changes in maternal deaths between 1990 and 2005, demonstrating slow and uneven progress towards achievement of the first target (to reduce maternal mortality ratio by three quarters, between 1990 and 2015) of the fifth Millennium Development Goal (MDG). Overall, the global decline in maternal mortality ratio was 5.4%, and the annual decline was less than 1%. It is estimated that an annual decline of 5.5% in global maternal mortality ratios between 1990 and 2015 is required to achieve the target. Important gains have been made in some world regions such as Eastern Asia where the highest annual decline was seen (4.2%), and Northern Africa (3.0%), South-Eastern Asia (2.6%) and Latin America and the Caribbean (2.0%). However, maternal mortality ratio declined annually on an average of only 0.1% in sub-Saharan Africa between 1990 and 2005.

It is recognized that in addition to a range of interventions before, during and after pregnancy, ensuring that all births are attended by a skilled health worker is a key strategy to reduce maternal deaths. On the basis of historical and observational evidence on the association between having a skilled health worker at delivery and reduced maternal mortality (Graham et al., 2001), the proportion of births attended by a skilled health worker,

was selected as a proxy measure to monitor the progress towards the MDG 5 target of reducing maternal mortality.

It was agreed at the special session of the United Nations General Assembly in 1999, which was held for the five-year follow-up to the International Conference on Population and Development (ICPD), that globally 80%, 85% and 90% of all births should be assisted by skilled attendants by 2005, 2010 and 2015 respectively (United Nations, 1999).

Here, the most recent nationally representative data on the births attended by skilled health professionals available to date together with global, regional and sub-regional estimates are presented. In addition, trends in delivering with the help of a skilled health worker were calculated for regions comparing the time period between 1990 and 1999, with that of 2000 and later.

Definitions

"Proportion of births attended by a skilled health worker" represents the percentage of all births attended by a skilled health worker. The term "skilled health worker" refers to "*an accredited health professional - such as a midwife, doctor or nurse - who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification,*

World Health Organization

management and referral of complications in women and newborns" (World Health Organization, 2004). Traditional birth attendants (TBA) either trained or not, are excluded from the category of skilled health workers. In this context, the term TBA refers to traditional, independent (of the health system), non-formally trained and community-based providers of care during pregnancy, childbirth and the postnatal period (World Health Organization, 2004).

Although the definition is quite specific, the use of it in measuring the proportion of births attended by a skilled health worker has been problematic. Many countries where maternal mortality is a big public health problem, have also limitations in the availability of qualified health personnel. Country programmes strive to increase the proportion of births attended by a skilled health worker by providing training to and employing different cadres of personnel to participate in deliveries. The content of such training, however, usually is not standardized across countries and limited information is available on the exact components of such training. For maintaining comparability of individual country figures, the cadres apart from doctors, nurses, midwives and auxiliary midwives reported in surveys are not included in the category of "skilled health worker" unless information existed in relation to the training of such a cadre. In our analysis, attempts have been made to quantify the proportion of births attended by health workers other than doctors, nurses and midwives in order to show the proportion of births conducted by such groups of providers.

Methodology

Nationally representative data on the proportion of births attended by a skilled health worker were collected. Most of the data were obtained from household surveys conducted to assess reproductive and child health status, such as:

- Demographic and Health Surveys (DHS)
- Multiple Indicator Cluster Surveys (MICS)
- Reproductive Health Surveys (RHS)

Where a recent household survey (conducted during or later than 2000) did not exist from a country, WHO regional office databases and web pages of Ministries of Health were explored. Where necessary, WHO country offices and national statistics offices were contacted. Countries are grouped according to the United Nations classification (United Nations, 1999).

Global, regional and sub-regional estimates were calculated as population-weighted averages of collected country-specific proportions, the weights being the number of live births in each country. The number of live births used was that of the World Population Prospects, the 2006 Revision (United Nations 2008).

Data for skilled attendant at birth were compiled from the WHO skilled attendant at birth database for two points in time: (i) data for the period 1990 to 1999, and (ii) data from 2000 onwards. The closest data point to year 1999 was chosen if data were available for more than one data point during 1990 to 1999, and the most recent year for the data point after 2000.

Table 1

Global, regional and sub-regional estimates of the proportion of births attended by a skilled health worker

Region/sub-region	% skilled health worker (doctors, nurses, midwives and other cadres)	Coverage of estimates*
World total	65.7	99.2
More developed regions	99.5	93.5
Less developed regions	61.9	99.8
Least developed countries	35.3	100.0
Africa	**46.5**	**99.9**
Eastern Africa	33.7	99.9
Middle Africa	55.0	100.0
Northern Africa	70.5	99.8
Southern Africa	89.4	100.0
Western Africa	41.2	100.0
Asia	**65.4**	**99.8**
Eastern Asia	98.0	100.0
South-Central Asia	46.9	100.0
South-Eastern Asia	70.1	100.0
Western Asia	79.2	97.1
Europe	**99.5**	**88.4**
Eastern Europe	99.6	100.0
Northern Europe	99.2	79.8
Southern Europe	99.2	63.1
Western Europe	99.5	95.9
Latin America & The Caribbean	**88.5**	**99.9**
Caribbean	73.1	99.0
Central America	82.5	100.0
South America	92.7	100.0
Northern America	**99.5**	**100.0**
Oceania	**76.4**	**98.5**
Australia/New Zealand	98.7	100.0
Melanesia	45.6	100.0
Micronesia	87.5	50.9
Polynesia	99.8	83.1

*Proportion of live births for which data on the presence of a skilled birth attendant were obtained.

Findings and interpretation

Globally, nationally representative data on skilled attendance are available for 99.2% of all live births. In America, Africa, Asia and Oceania data are available for virtually all live births (Table 1). Latest available country-level data are shown in Table 2. Wide differences exist among countries in terms of the proportion of births attended by a skilled health worker.

Table 1 depicts regional averages for skilled attendance. World-wide, 65.7% of births were attended by a skilled health worker. Although nearly all births were attended by skilled health personnel in developed country settings, this proportion is 61.9% in less developed countries and only 35.3% in the least developed countries.

In Africa and Asia, only 46.5% and 65.4%, respectively, of women gave birth with professional assistance. In less developed regions, the lowest levels of skilled attendant at birth were in Eastern Africa (33.7%), followed by Western Africa (41.2%) and South-central Asia (46.9%) with the highest levels in Polynesia (99.8%), Eastern Asia (98%) and South America (92.7%). Africa and Asia are lagging behind in terms of the ICPD + 5 target of 85% for 2010. Special and intensive efforts are needed to accelerate progress in these regions.

Figure 1 shows the estimates for regions and sub-regions comparing the two periods (1990 to 1999 and 2000 to 2006) against the ICPD+5 target of 85 % for 2010. In every sub-region, the use of skilled health workers at births increased, except in Western Africa where it remained stagnant and Oceania where it decreased. Highest increases were seen in Northern and Middle Africa, Central America and all of Asia except Western Asia.

Three issues need consideration in interpretation of these figures. First, the cadres of health workers that fall into the category of skilled birth attendant vary widely between countries. The training received by a particular category of health workers might allow them to fulfill the international definition of "skilled attendant" in some countries, but not in others. In connection to this issue, as discussed above, the country contexts were taken into consideration as much as possible in extracting data from available sources, and, to provide an idea of the country's setting, the percentages of deliveries attended by categories of health cadres other than doctors, nurses and midwives and the percentages are presented wherever data permit. The exact skills of a certain type of health worker considered as a skilled health worker (such as auxiliary midwife) can, however, be identified only through in-depth country assessments.

Second, most of the data are obtained through household surveys that rely on the woman's account of the attendant she had during delivery, which may not always reflect the actual situation (Hussein et al., 2005).

Finally, it should always be remembered that a skilled health worker should have the necessary equipment and adequate referral opportunity in case of need, in order to be effective to reduce maternal deaths. Data presented here do not indicate whether or not these requirements were met for births where a skilled health worker was present.

Figure 1. Skilled health worker at birth

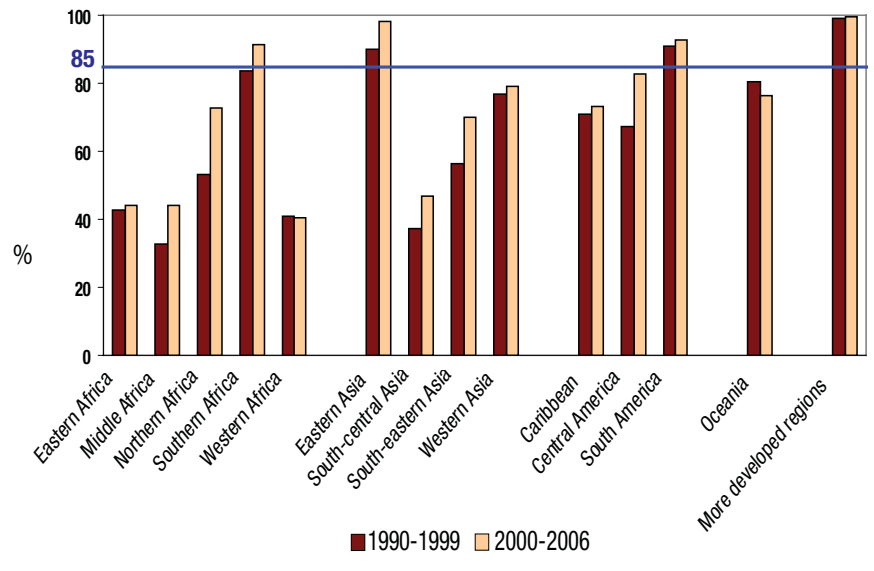

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Table 2

Proportion of births attended by a skilled health worker by country and reference year

Country/region/territories	% skilled health worker (doctors, nurses, midwives and other cadres of health workers)	Cadres of health workers other than doctors, nurses and midwives - reported as "skilled"	Year
Afghanistan[1]	14.3		2003
Albania[2]	100		2005
Algeria[3]	95.3		2006
American Samoa[4]	100		2002
Andorra	...		
Angola[5]	44.7	Includes "auxiliary midwife" (6.9%)	2001
Anguilla[6]	100		2006
Antigua and Barbuda[6]	99.9		2006
Argentina[6]	99.1		2005
Armenia[7]	97.8		2005
Aruba[6]	96[a]		2002
Australia[4]	99.5		2004
Austria	...		
Azerbaijan[8]	97		2006
Bahamas[6]	99		2006
Bahrain[9]	99		2005
Bangladesh[10]	20.1		2006
Barbados[6]	100		2005
Belarus[11]	100	Includes "auxiliary midwife" (0.1%)	2005
Belgium[12]	99.3[a]		1999
Belize[6]	90.6[a]		2006
Benin[13]	74	Excludes "aide soignante" (3.7%)	2006
Bhutan[14]	50.9		2005
Bolivia[15]	60.8	Excludes "partera" (6%)	2003
Bosnia and Herzegovina[16]	99.5	Includes "auxiliary midwife" (0.1%)	2006
Botswana[17]	98.5		2000
Brazil[6]	96.8[a]		2004
British Virgin Islands[6]	100[a]		2006
Brunei Darussalam[4]	99.7		2005
Bulgaria[8]	99.4		2006
Burkina Faso[18]	54		2006
Burundi[19]	34		2005
Cambodia[20]	43.8		2005
Cameroon[21]	63		2006
Canada[6]	100		2005
Cape Verde[22]	88.5	Includes "auxiliary enfermeira, parteira" (35.3%)	1998
Cayman Islands[6]	100		2006
Central African Republic[23]	53.5	Includes "sage femme auxiliaire" (12.1%)	2006
Chad[24]	14.4		2004

Country/region/territories	% skilled health worker (doctors, nurses, midwives and other cadres of health workers)	Cadres of health workers other than doctors, nurses and midwives - reported as "skilled"	Year
Channel Islands	...		
Chile[6]	99.6		2005
China[4]	97.8[c]		2006
China, Hong Kong SAR[4]	100		2006
China, Macao SAR[4]	100		2006
Colombia[25]	96.4	Includes "partera" (5.7%)	2005
Comoros[26]	61.8	Includes "auxiliary midwife" (14.6%)	2000
Congo[27]	83.4	Excludes "matrone, aide-soignante ou agent de santé communautaire" (2.7%)	2005
Cook Islands[4]	100		2005
Costa Rica[6]	94.3		2006
Côte d'Ivoire[28]	56.8		2006
Croatia[8]	99.9		2006
Cuba[6]	99.9		2006
Cyprus[29]	100		2003
Czech Republic[8]	99.9		2006
Democratic People's Republic of Korea[30]	97.1		2004
Democratic Republic of the Congo[31]	60.7	Includes "auxiliary midwife" (37%)	2001
Denmark	...		
Djibouti[32]	93	Includes "sage femme auxiliaire" (14.6%)	2006
Dominica[6]	99[b]		2005
Dominican Republic[33]	95.6		2006
Ecuador[6]	80		2005
Egypt[34]	74.2		2005
El Salvador[35]	69.4[a]		2002-03
Equatorial Guinea[36]	63.4	Includes "auxiliary midwife" (10.5%)	2000
Eritrea[37]	28.3	Includes "auxiliary midwife" [d]	2002
Estonia[38]	99.8		2005
Ethiopia[39]	5.7		2005
Faeroe Islands	...		
Falklands Islands (Malvinas)	...		
Fiji[4]	98.9[a]		2005
Finland[40]	99.9		2002
France[29]	99		1993
French Guiana[6]	49		2004
French Polynesia[4]	100		2004
Gabon[41]	85.5		2000
Gambia[42]	56.8	Includes "auxiliary midwife" (4.7%)	2006
Georgia[43]	92.4[a]		2005

Country/region/territories	% skilled health worker (doctors, nurses, midwives and other cadres of health workers)	Cadres of health workers other than doctors, nurses and midwives - reported as "skilled"	Year
Germany[44]	100.0[b]		2006
Ghana[45]	49.7	Includes "auxiliary midwife, community health worker" [d]	2006
Greece	...		
Grenada[6]	100		2005
Guadeloupe[6]	99.2		2005
Guam[4]	87.2[a]		2004
Guatemala[46]	41.4		2002
Guinea[47]	38.1	Includes "sage femme auxiliaire, health field worker" (9.4%)	2005
Guinea-Bissau[48]	38.9	Includes "sage femme auxiliaire" (7.9%)	2006
Guyana[6]	94		2005
Haiti[49]	26.1	Includes "auxiliaire" (1.4%)	2005-06
Holy See	...		
Honduras[50]	66.9	Includes "auxiliar de enfermeria" (0.6%)	2005-06
Hungary[8]	99.7		2006
Iceland	...		
India[51]	46.6	Includes "auxiliary nurse midwife, lady health visitor, other health professional" (1.1%)	2005-06
Indonesia[52]	66.3	Includes "village midwife" (20.3%)	2002-03
Iran (Islamic Republic of)[9]	97		2005
Iraq[53]	88.6		2006
Ireland[54]	100		2002
Isle of Man	...		
Israel	...		
Italy[55]	99.0[a]		2003
Jamaica[56]	96.7	Includes "auxiliary midwife" (8.9%)	2005
Japan[4]	99.8[a]		2004
Jordan[57]	99.5		2002
Kazakhstan[58]	99.9	Includes "auxiliary midwife" (0.8%)	2006
Kenya[59]	41.6		2003
Kiribati[4]	89.7		2005
Kuwait[9]	100		2006
Kyrgyzstan[60]	97.7	Includes "auxiliary midwife" (0.5%)	2006
Lao People's Democratic Republic[61]	19.4	Includes "auxiliary midwife" (2.7%)	2001
Latvia[38]	100		2005
Lebanon[9]	98		2004
Lesotho[62]	55.4		2004

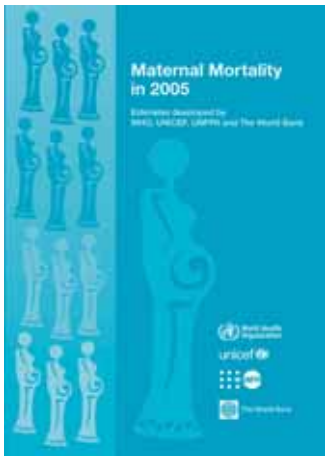
Country/region/territories	% skilled health worker (doctors, nurses, midwives and other cadres of health workers)	Cadres of health workers other than doctors, nurses and midwives - reported as "skilled"	Year
Liberia[63]	50.9		2000
Libyan Arab Jamahiriya[9]	100		2006
Liechtenstein	...		
Lithuania[38]	100		2005
Luxembourg[64]	99.9		2002
Madagascar[65]	45.3	Excludes trained birth attendant (6.0%)	2003-04
Malawi[66]	53.6		2006
Malaysia[4]	100		2005
Maldives[67]	84		2004
Mali[68]	40.6	Includes "matrone, sage femme auxiliaire, aide-soignante" (17.9%)	2001
Malta[69]	100.0[b]		2006
Marshall Island[70]	95		2002
Martinique[6]	99.9		2004
Mauritania[71]	53.4	Excludes "matrone, accoucheuse auxiliaire" (3.5%)	2000-01
Mauritius[72]	98.9[a]		2005
Mexico[6]	93.7		2006
Micronesia (Federated States of)[70]	87.7		2001
Monaco	...		
Mongolia[73]	99.2		2005
Montenegro[74]	98.8	Includes "auxiliary midwife" (11.6%)	2005
Montserrat[6]	100		2006
Morocco[75]	62.6		2003-04
Mozambique[76]	47.7	Includes "parteira ou enfermeira do SMI" (44.7%)	2003
Myanmar[77]	57		2001
Namibia[78]	75.5		2000
Nauru[70]	100[b]		2003
Nepal[79]	18.7		2006
Netherlands[80]	100		2006
Netherlands Antilles	...		
New Caledonia[4]	92		2005
New Zealand[4]	95.3[a]		2004
Nicaragua[81]	66.9		2001
Niger[82]	17.7		2006
Nigeria[83]	35.2	Includes "auxiliary midwife" (1.0%)	2003
Niue[4]	100		2006
Northern Mariana Island[70]	99.6		2000
Norway	...		
Occupied Palestinian Territory[84]	98.9		2006
Oman[9]	98		2006

Country/region/territories	% skilled health worker (doctors, nurses, midwives and other cadres of health workers)	Cadres of health workers other than doctors, nurses and midwives - reported as "skilled"	Year
Pakistan[85]	54		2005-06
Palau[4]	100		2006
Panama[6]	91.1		2005
Papua New Guinea[4]	38.2		2005
Paraguay[86]	77.2		2004
Peru[87]	73.4	Includes "sanitario/promotora" (2.3%)	2004
Philippines[88]	59.8		2003
Pitcairn	...		
Poland[8]	99.9		2006
Portugal[89]	99.9		2001
Puerto Rico[6]	99.8		2005
Qatar[9]	100		2006
Republic of Korea[4]	100		2006
Republic of Moldova[90]	99.5		2005
Reunion	...		
Romania[91]	98.9		2004
Russian Federation[8]	99.5		2006
Rwanda[92]	28.4		2005
Saint Kitts and Nevis[6]	100		2005
Saint Lucia[6]	100[a]		2005
Saint Vincent and the Grenadine[6]	100		2005
Samoa[4]	100		2004
San Marino	...		
Sao Tome and Principe[93]	81		2006
Saudi Arabia[9]	96		2004
Senegal[94]	51.9	Includes "sage femme auxiliaire" (7.5%)	2005
Serbia[95]	99	Includes "auxiliary midwife" (10.1%)	2005
Seychelles	...		
Sierra Leone[96]	43.2	Includes "auxiliary midwife" (3.2%)	2005
Singapore[4]	99.7[a]		2006
Slovakia[8]	99.5		2006
Slovenia[8]	99.9		2006
Solomon Islands[4]	43[a]		2003
Somalia[97]	33		2006
South Africa[98]	92		2003
Spain	...		
Sri Lanka[99]	96.6		2000
St. Helena	...		
Sudan[9]	49.2		2006
Suriname[100]	70.9	Includes "auxiliary midwife" (9.3%)	2000

Country/region/territories	% skilled health worker (doctors, nurses, midwives and other cadres of health workers)	Cadres of health workers other than doctors, nurses and midwives - reported as "skilled"	Year
Swaziland[101]	74		2002
Sweden	...		
Switzerland[102]	100.0[b]		2006
Syrian Arab Republic[103]	93.1	Includes "auxiliary midwife" (1.6%)	2006
Tajikistan[104]	83.3	Includes "auxiliary midwife" (0.9%)	2005
TFYR Macedonia[105]	98.1	Includes "auxiliary midwife" (0.3%)	2005
Thailand[106]	97.2	Includes "auxiliary midwife" (0.3%)	2005-06
Timor-Leste[107]	19		2003
Togo[108]	62	Includes "sage femme auxiliaire" (9.6%)	2006
Tokelau[4]	100		1999
Tonga[4]	99		2004
Trinidad and Tobago[109]	98		2006
Tunisia[110]	89.8		2000
Turkey[111]	83		2003
Turkmenistan[112]	100		2006
Turks and Caicos Islands[6]	100		2006
Tuvalu[70]	100		2002
Uganda[113]	42.2		2006
Ukraine[114]	100		2005
United Arab Emirates[9]	100		2005
United Kingdom[29]	99		1998
United Republic of Tanzania[115]	43.4		2004-05
United States of America[6]	99.5		2004
United States Virgin Islands[6]	98.7		2004
Uruguay[6]	99.5		2005
Uzbekistan[116]	99.9	Includes "auxiliary midwife" (0.3%)	2006
Vanuatu[4]	92		2005
Venezuela[6]	95		2003
Viet Nam[117]	87.7	Includes "auxiliary midwife" (3.9%)	2006
Wallis and Futuna Islands	...		
Western Sahara	...		
Yemen[118]	19.6[a]		2003
Zambia[119]	43.4		2001-02
Zimbabwe[120]	68.5		2005-06

... data not available
a. Institutional birth
b. Estimate
c. Excludes Hong Kong and Macao SARs
d. Disaggregation of cadres not possible

Publications



Maternal mortality in 2005: estimates developed by WHO, UNICEF, UNFPA and The World Bank

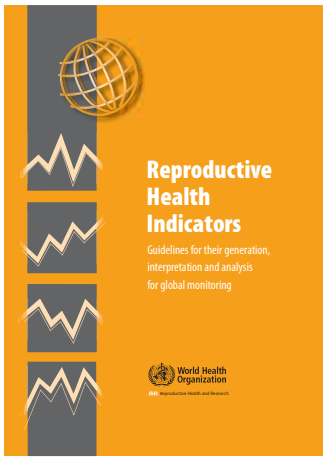
The 2005 estimates of maternal mortality provide an up-to-date indication of the extent of the maternal mortality problem globally and its evolution since 1990. They strongly indicate a need both for improved action for maternal mortality reduction and for increased efforts for the generation of robust data to provide better estimates in the future.

Also available in French, Spanish and Russian.

Coming soon: Arabic and Chinese.

National-level monitoring of the achievement of universal access to reproductive health

A technical consultation was convened in Geneva, Switzerland, from 13 to 15 March 2007. This consultation was jointly organized by WHO/RHR and UNFPA to consider national-level monitoring of progress towards the achievement of universal access to sexual and reproductive health. Building on earlier work and informed by increasing knowledge on both dimensions of sexual and reproductive health and the concept of "universal access", the consultation sought to recommend, within a clearly specified framework, a set of indicators to monitor progress towards the goal of universal access to sexual and reproductive health at country level.



Reproductive health indicators. Guidelines for their generation, interpretation and analysis for global monitoring

This document is intended for national public health administrators and health programme managers. It briefly reviews theoretical and practical considerations of indicators, followed by a discussion of the definition, data sources, collection methods, periodicity of collection, disaggregation, use, limitations and common pitfalls for each of the shortlisted indicators. It is hoped that the document will contribute towards a consistent global monitoring and evaluation of reproductive health.

These publications are accessible through the WHO web site:
www.who.int/reproductive-health

Data Sources

1. *Afghanistan Multiple Indicator Cluster Survey 2003. Detail Table*. Central Statistics Office, Transitional Islamic Government of Afghanistan and United Nations Children's Fund (UNICEF), 2003. (http://www.childinfo.org/MICS2/natlMICSrepz/MICSnatrep.htm, accessed 28 March 2008).
2. *Albania Multiple Indicator Cluster Survey 2005. Global Database on Delivery Care.* United Nations Children's Fund (UNICEF) Monitoring the Situation of Children and Women, 2007. (http://www.childinfo.org/areas/deliverycare/countrydata.php, accessed 28 March 2008).
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