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POSTPARTUM CARE: LEVELS AND DETERMINANTS IN DEVELOPING COUNTRIES

DHS COMPARATIVE REPORTS 15



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- To provide decisionmakers in survey countries with information useful for informed policy choices;
- To expand the international population and health database;
- To advance survey methodology; and
- To develop in participating countries the skills and resources necessary to conduct high-quality demographic and health surveys.

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Postpartum Care: Levels and Determinants in Developing Countries

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Contents

Tables and Figures	v
Preface	vii
Acknowledgments	ix
Executive Summary	xi
1 Background	1
2 Conceptual Framework and Study Design	4
3 Methods and Data Sources	6
3.1 Postpartum Care	7
3.2 Correlates of Postpartum Care	8
3.3 Statistical Methods	9
4 Results	10
4.1 Place of Delivery and Postpartum Care	10
4.2 Timing of Postpartum Care (Noninstitutional Births)	14
4.3 Place of Postpartum Care (All Births)	18
4.4 Provider of Postpartum Care (Noninstitutional Births)	20
5 Differentials in Postpartum Care	22
5.1 Postpartum Care and Age at Time of Birth	22
5.2 Postpartum Care and Birth Order	22
5.3 Postpartum Care and Urban-rural Residence	25
5.4 Postpartum Care and Level of Education	26
5.5 Postpartum Care and Household Wealth Status	27
5.6 Postpartum Care and Antenatal Care	29
5.7 Postpartum Care and Media Exposure	31
5.8 Postpartum Care and Women's Status	32
6 Multivariate Analysis	34
6.1 Country Selection	34
6.2 Variables for the Multivariate Model	34
6.3 Results of Multivariate Analysis	35
7 Summary and Discussion	41
7.1 Extent and Timing of Postpartum Care	41
7.2 Place and Providers of Postpartum Care for Noninstitutional Births	41
7.3 Characteristics Associated with Receiving Postpartum Care	41
7.4 Limitations of Study	42
7.5 Conclusions	43
References	45
Appendix A	47

Tables and Figures

Table 2.1	Key elements of postpartum care for the infant and mother, by length of time following birth.....	4
Table 3.1	Characteristics of the DHS surveys included in this report.....	6
Table 4.1	Percent distribution of women whose most recent live birth occurred in the five years preceding the survey by place where birth occurred (institutional or noninstitutional) and, for noninstitutional births, receipt of postpartum care and person who provided care.....	11
Table 4.2	Percent distribution of women whose most recent live noninstitutional birth was in the five years preceding the survey, by timing of first postpartum checkup.....	13
Table 4.3	Mean and median timing of postpartum care (in days) for noninstitutional births in the five years preceding the survey and mean timing of postpartum care for all births.....	16
Table 4.4	Percent distribution of women who received postpartum care for the most recent live birth in the five years preceding the survey, by place of first postpartum checkup.....	19
Table 4.5	Percent distribution of women who received postpartum care for the most recent live noninstitutional birth in the five years preceding the survey, by provider of postpartum care.....	20
Table 5.1	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by age at birth.....	23
Table 5.2	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by birth order.....	24
Table 5.3	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by residence.....	25
Table 5.4	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by education.....	27
Table 5.5	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by household wealth status.....	28
Table 5.6	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by whether they received antenatal care and by the number of antenatal care visits.....	30
Table 5.7	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by media exposure.....	32

Table 5.8	Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by sex of head of household, employment status, and participation in health care decisionmaking	33
Table 6.1	Independent variables included in the multivariate analysis model	35
Table 6.2	Effects (RRRs) of women’s background characteristics on postpartum care: multinomial logistic regression for nine developing countries, noninstitutional births (NIB) and institutional births	36
Table A.1	Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey) by provider of postpartum care and birth order	47
Table A.2	Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and residence	50
Table A.3	Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and women's educational status	53
Table A.4	Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and wealth index quintile.....	56
Table A.5	Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and antenatal care	59
Figure 1.1	Coverage of Maternal Health Services	3
Figure 2.1	Conceptual Framework for the Study on Determinants of Postpartum Care (PPC)	5
Figure 4.1	Postpartum Care for Institutional Births and Noninstitutional Births (NIB)	13
Figure 4.2	Correlation between Noninstitutional Births and Postpartum Care (Linear Regression)	14
Figure 4.3	Mean and Median Timing of Postpartum Care (No. Days Following Birth that PPC Occurred), Noninstitutional Births and All Births	17

Preface

One of the most significant contributions of the MEASURE DHS program is the creation of an internationally comparable body of data on the demographic and health characteristics of populations in developing countries. The *DHS Comparative Reports* series examines these data across countries in a comparative framework. The *DHS Analytical Studies* series focuses on specific topics. The principal objectives of both series are to provide information for policy formulation at the international level and to examine individual country results in an international context. Whereas *Comparative Reports* are primarily descriptive, *Analytical Studies* have a more analytical approach.

The *Comparative Reports* series covers a variable number of countries, depending on the availability of data sets. Where possible, data from previous DHS surveys are used to evaluate trends over time. Each report provides detailed tables and graphs organized by region. Survey-related issues such as questionnaire comparability, survey procedures, data quality, and methodological approaches are addressed as needed.

The topics covered in *Comparative Reports* are selected by MEASURE DHS staff in conjunction with the U.S. Agency for International Development. Some reports are updates of previously published reports.

It is anticipated that the availability of comparable information for a large number of developing countries will enhance the understanding of important issues in the fields of international population and health by analysts and policymakers.

Martin Vaessen
Project Director

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Executive Summary

Maternal mortality continues to be high in many countries of the developing world. Focused antenatal care (ANC) and childbirth with a skilled attendant have been highlighted as effective interventions to reduce this burden. However, better understanding of conditions such as postpartum hemorrhage—the largest killer—and its occurrence in the early postpartum period have shown the importance of early and universal postpartum care (PPC). This study was undertaken to analyze the variables (occurrence, timing, and background characteristics) associated with receipt of postpartum care in 30 developing countries representing the major regions of the world. Data from Demographic and Health Surveys carried out between 1999 and 2004 were used in the study. Results show that about half of all births in these countries continue to occur outside health institutions, and in seven out of ten births mothers do not receive any postpartum care. Of the noninstitutional births for which mothers receive postpartum care, the average timing of the first postpartum checkup is three days after birth. If all births are counted—assuming institutional births receive postpartum care 12 hours after delivery—the average timing of postpartum care is two days following delivery. The characteristics of women most often associated with receiving postpartum care are belonging to a household with higher wealth status and having received antenatal care. Education beyond the primary level, urban residence, and media exposure are strongly correlated with receiving postpartum care. However, some relationships are less clear, or are reversed, for postpartum care performed by traditional birth attendants or other nonskilled attendants. This paper highlights specific countries where, despite low numbers of institutional births, many women do receive postpartum care. It is suggested that countries should invest in ensuring that all births—whether at a health institution or at home—are attended by a skilled provider at the time of delivery or within a few hours, to help reduce maternal morbidity and mortality.

1 Background

Maternal mortality continues to be high in many parts of the world. Best estimates from the World Health Organization (WHO et al., 2004) put the figure at just over 500,000 maternal deaths every year; 99 percent of these deaths occur in the developing world. Recent research has identified the factors associated with maternal mortality, and narrowed down the main causes and the most critical period. For example, despite the fact that a higher percentage of women in high-risk pregnancy categories will have complications necessitating obstetric assistance during delivery, the large majority of life-threatening complications that occur during delivery are associated with women with normal pregnancies (PATH et al., 1998a; Rhode, 1995; Yuster, 1995). Although antenatal care (ANC) is important for pregnant women, it cannot predict whether an individual woman will have a critical complication at delivery (McCormick et al., 2002; Rhode, 1995).

There is new information about the causes of maternal deaths and their timing. The most important causes of maternal deaths—accounting for 73 percent of cases—are hemorrhage (25 percent), postpartum sepsis (15 percent), unsafe abortion (13 percent), pregnancy-induced hypertension or eclampsia (12 percent), and obstructed labor (8 percent) (PATH et al., 1998b). A recent review of causes of maternal deaths by region shows differential rates, with hemorrhage (both pre- and postpartum) being the leading cause of death in Africa and Asia (more than 30 percent of all maternal deaths). In contrast, in Latin America and the Caribbean, hypertensive disorders in pregnancy were the leading cause of maternal death (26 percent). Abortion as a cause of death was highest in Latin America/Caribbean and lowest in Africa (Khan et al., 2006). This report focuses on the period around delivery, leaving out abortion and pre-delivery conditions.

Twenty-five percent of maternal deaths and half of neonatal deaths occur during labor, delivery, and within the first 24 hours postpartum, increasing to 60 percent and two-thirds, respectively, by the end of the first week postpartum (Li et al., 1996; Lawn et al., 2001; Yinger and Ransom, 2003). The majority of deaths from postpartum hemorrhage, the number one killer, occur in the first four hours postpartum (Kwast, 1991; Kane et al., 1992).

Evidence from historical epidemiology from the developed world has shown the importance of skilled attendants at delivery and the availability of emergency obstetric care in reducing maternal mortality. Toward the end of the nineteenth century, levels of maternal mortality were around 600 per 100,000 live births in the industrialized world. Through training and wide deployment of midwifery personnel, these countries were able to reduce the level of mortality by one-fourth to one-half in a period of 30 years (Loudon, 2000; De Brouwere and Lerbergh, 2001). This reduction was accomplished before the introduction of modern technology and improved obstetric technology and practices such as the use of antibiotics, blood transfusion, and caesarean section. This historical evidence highlights the importance of ensuring that every delivery is attended by a skilled attendant. A skilled attendant is defined here as a person with midwifery skills (i.e., a doctor, midwife, or nurse) who has been trained to proficiency in the skills necessary to provide competent care during pregnancy and childbirth. Skilled attendants must be able to manage normal labor and delivery, recognize the onset of complications, perform essential interventions, start treatment, and supervise the referral of mother and infant for interventions that are beyond their competence or cannot be implemented in the particular setting (McCormick et al., 2002; MacDonald and Starrs, 2002; WHO et al., 2004b).

Although necessary, the presence of a skilled attendant at delivery is not sufficient to ensure safe delivery, and has been shown to have limitations in the effort to reduce maternal deaths below certain levels. To further reduce maternal mortality, it is necessary to add accessible obstetric technology and services (Maine and Rosenfield, 1999). Even if appropriate referrals are made, women in danger of dying from hemorrhage, sepsis, eclampsia, or obstructed labor should have access to life-saving procedures that

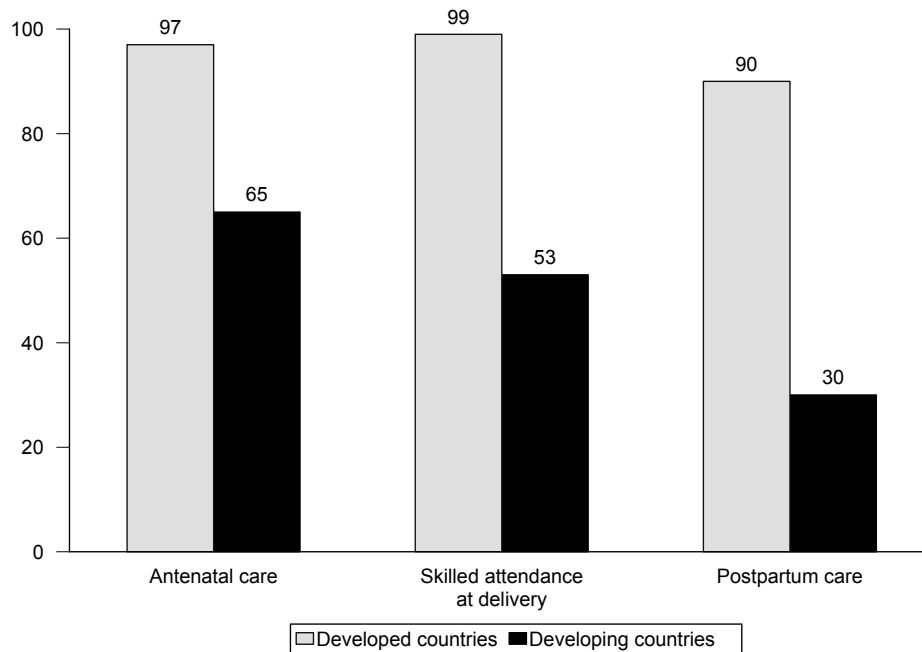
are usually only carried out at the hospital level and require a combination of specialized skills (e.g., for surgery) and appropriate technology (e.g., sterilized equipment, intravenous antibiotics). This growing realization of the need for skilled providers and an enabling environment is driving initiatives such as Safe Motherhood; MotherCare; the Maternal and Neonatal Health Program; Prevention of Postpartum Hemorrhage Initiative; Access to Clinical and Community Maternal, Neonatal, and Women's Health Services (ACCESS) Program; and the Global Action for Skilled Attendants for Pregnant Women. These initiatives are aimed at:

- Increasing the number of skilled birth attendants available in remote areas;
- Upgrading the capacity of health facilities (through equipping and training) to provide different levels of emergency obstetric care;
- Involving the community in assisting pregnant women with birth preparedness and early recognition of alarm signs, and prompt referral of complications around the time of delivery; and
- Measuring the phenomenon with increased accuracy and better evaluating the results of interventions.

The Demographic and Health Surveys (DHS) program has been measuring several components of maternal health in developing countries for more than 20 years. The DHS reports present information on the magnitude of maternal mortality and the occurrence, frequency of, and attendance at antenatal and delivery care for a number of characteristics of women of reproductive age (15-49 years). Data are gathered on several programmatic interventions during the antenatal visits, such as the measurement of height and weight, the collection of urine and blood samples, provision of iron/folate tablets, tetanus toxoid vaccination, malaria prophylaxis, and antiparasite medication. Data on childbirth include the person who assisted during delivery, the location of delivery, and (if applicable) the reason for not delivering in a health facility, and whether the woman delivered by caesarean section. Information is also collected on the occurrence of postpartum care (PPC) and the person who provides the care, as well as the place where the postpartum care was provided and whether vitamin A was given at that time.

Previous research based on DHS surveys has shown a substantial increase worldwide in the use of antenatal care services. A recent review of data from 49 countries with two or more household surveys found an 11-point increase in use of antenatal care between 1990 and 2000, from an average of 53 to 64 percent (WHO and UNICEF, 2003). However, the other components of maternal care have not followed such a promising path. There are wide gaps between antenatal and delivery care, and an even wider gap between delivery care and postpartum care. A 1997 review showed an important disparity between the proportion of women in the developing world receiving antenatal care (65 percent) and those whose last birth was attended by skilled personnel (53 percent). However, the gap between these two services and postpartum care was substantial, with postpartum care reaching only 30 percent. These figures are in contrast to the high and fairly consistent availability of services in developed countries and illustrate the challenge ahead for the reduction of maternal deaths in the developing world (see Figure 1.1) (WHO, 1997).

Figure 1.1 Coverage of Maternal Health Services



Source: WHO (1997)

A recent DHS report on trends in delivery care in six countries from 1988 to 2000 noted mixed gains (Bell et al., 2003). Increases in attendance at delivery by health professionals¹ ranged from zero (no gain) for Malawi in eight years (around 53 percent in both 1992 and 2000) to an increase of 39 percent for Bolivia in a similar period (58 percent in 1998). A multivariate analysis found important and separate influences of a health professional at a previous delivery, urban residence, and secondary education on the likelihood of the last delivery being attended by a health professional (Bell et al., 2003). The report also identified countries where attendance of a health professional at delivery was strongly correlated with institutional delivery (Bolivia, Ghana, and Malawi); other countries use a community approach to professional delivery (Indonesia); and some countries are in a transitional phase (Bangladesh and the Philippines).

In contrast to antenatal and delivery care, less information is available on postpartum care in the developing world. It is important to examine the data on levels of postpartum care (both in an institution and at home) in different regions of the world. Additionally, it is crucial to examine the relationship between postpartum care and women's background characteristics and other aspects of maternal health. This study attempts to fill this gap.

¹ Health professionals were defined as doctors, nurses, or midwives, based on identification by the mothers interviewed.

2 Conceptual Framework and Study Design

As defined by the World Health Organization (1998), the postpartum period or puerperium is the period that begins immediately after delivery of the placenta and lasts up to 42 days (or six weeks). Postpartum care is provided for both mother and child, its main elements varying according to the time during the postpartum period when it is given (see Table 2.1). The terms “postpartum care” and “postnatal care” are sometimes used interchangeably; however, postnatal is more often used to refer to the care of the newborn. In this study, we use postpartum care throughout, referring primarily to care provided to the mother.

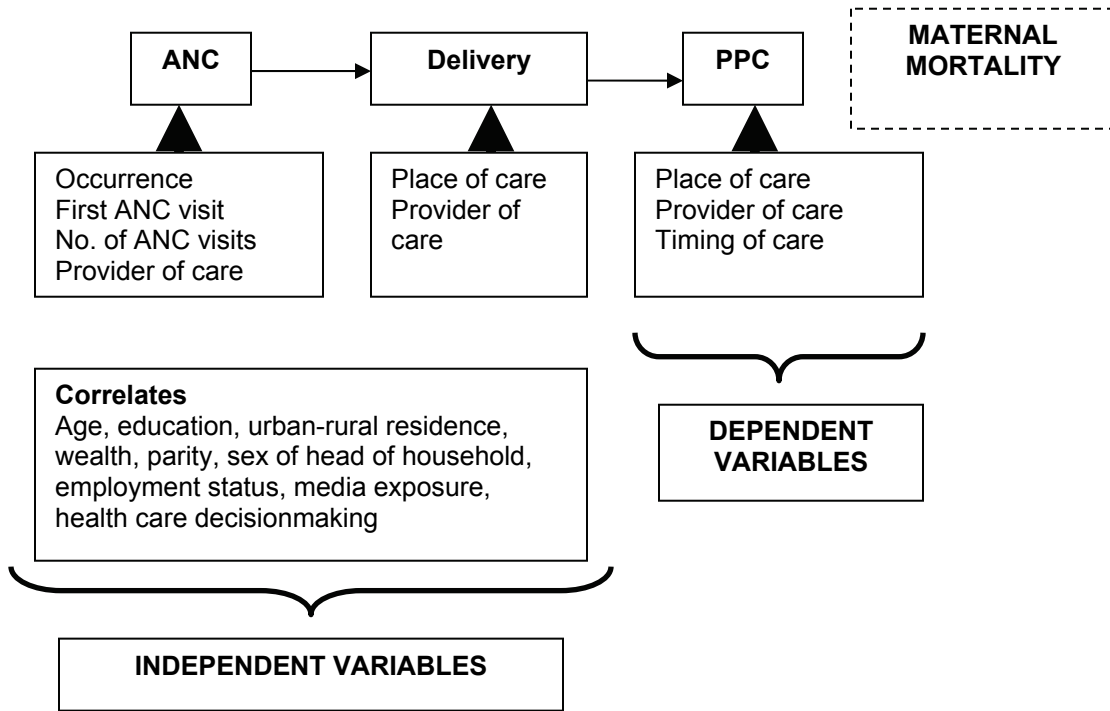
	6-12 hours	3-6 days	6 weeks	6 months
Infant	breathing warmth feeding cord care immunization	feeding routine tests	weight/feeding immunization	development weaning
Mother	blood loss pain blood pressure advice/warning signs	breast care temperature/ infection lochia mood	recovery anemia contraception	general health contraception continuing morbidity
Source: WHO, 1998				

The focus of the study, the main dependent variable, is whether or not women received postpartum care. However, other related dependent variables are explored: when care occurred (0-1 day, 1-2 days, 3-4 days, etc.), whether postpartum care was provided in an institution or at the community level, and whether postpartum care was provided by a professional or nonprofessional attendant.

Independent variables are selected characteristics of women and their households (e.g., age, parity, level of education, wealth index, urban-rural residence, employment status). Other correlates of women’s status tested are whether the woman is head of household, whether she makes decisions about her own health care, and whether she is exposed to media. A health care covariate—whether the woman had any antenatal care during pregnancy—is also included.

Bivariate analyses provide a first description of frequencies and relationships. This is followed by the application of multivariate analysis (multinomial logistic regression) to identify the characteristics strongly and independently associated with postpartum care (see framework in Figure 2.1). This further analysis is done using selected countries from all the regions.

Figure 2.1 Conceptual Framework for the Study on Determinants of Postpartum Care (PPC)



3 Methods and Data Sources

The study uses data from 30 surveys conducted between 1999 and 2004 under the DHS program. All the surveys include women age 15-49, and the samples are nationally representative. Table 3.1 shows the number of women who were interviewed in each survey and the number whose most recent live birth was in the five years preceding the survey. These women constitute the base population of this comparative study. Countries are divided into five regions:

- Sub-Saharan Africa,
- North Africa/West Asia/Europe,
- Central Asia,
- South/Southeast Asia, and
- Latin America/Caribbean.

Table 3.1 Characteristics of the DHS surveys included in this report

Region and country	Survey date	Number of respondents	Number of women whose most recent live birth was in the five years preceding the survey
Sub-Saharan Africa			
Benin	2001	6,219	3,514
Burkina Faso	2003	12,477	7,427
Cameroon	2004	15,241	5,289
Eritrea	2002	8,754	4,152
Ethiopia	2000	15,367	7,974
Ghana	2003	5,691	2,630
Kenya	2003	8,195	4,028
Madagascar	2003	7,949	4,142
Malawi	2000	13,220	8,028
Mali	2001	12,849	8,231
Mozambique	2003	23,870	7,138
Namibia	2000	6,755	2,991
Nigeria	2003	7,620	3,894
Rwanda	2000	10,421	5,130
Uganda	2000	7,246	4,452
Zambia	2001	7,658	4,396
Zimbabwe	1999	5,907	2,767
North Africa/West Asia/Europe			
Armenia	2000	6,430	1,248
Egypt	2000	15,573	7,931
Jordan	2002	6,006	3,743
Central Asia			
Turkmenistan	2000	7,919	2,460
South/Southeast Asia			
Bangladesh	2004	11,440	5,387
Cambodia	2000	15,351	5,678
Indonesia	2002-2003	29,483	12,729
Nepal	2001	8,726	4,739
Latin America/Caribbean			
Colombia	2000	11,585	3,545
Dominican Republic	2002	23,384	7,858
Haiti	2000	10,159	4,237
Nicaragua	2001	13,060	4,835
Peru	2000	27,843	9,530

The current study uses a woman-based analysis approach.² For all the postpartum care indicators used, the information is collected on the most recent live birth in the five years preceding the survey. For consistency purposes, countries with data only for three years preceding the survey were not included in the study. In the case of multiple births, the birth coded by the interviewer as the most recent one was used for collecting information on various postpartum care indicators. Although this approach seems to lead to some biased results compared with the birth-based approach, the bias is small for pregnancy and delivery-related indicators, as is our case (Grummer-Strawn and Stupp, 1996).

In DHS surveys, information on the provider, timing, and location of postpartum care was collected only for noninstitutional births.³ For this study, we assumed that all women with institutional births received postpartum care. Following this assumption in Table 4.2 and onwards, we consider women as having received postpartum care if they delivered in an institution or delivered outside an institution but reported receiving postpartum care.

An obvious limitation of this assumption is the certainty that all institutional births did receive postpartum care and that the quality of this service was adequate. However, this latter limitation is common throughout all analyses, as quality of care is not covered with the postpartum care questions for noninstitutional births. In any case, it is reasonable to assume that most women who deliver in an institution will have had some type of postpartum checkup (measurement of temperature or blood pressure, or assessment of any evident hemorrhage) before discharge from the facility.

The World Health Organization recommends that the first postpartum checkup should take place within six hours after delivery (WHO, 1998). However, as noted earlier, DHS surveys did not collect data specifically on the hours after birth that this service was provided;⁴ thus, the minimum time that could be extracted was within the first 24 hours after delivery. Also, given that most DHS tables on the timing of postpartum care report the first category as within the first two days, both types of information are included in Table 4.2. Additionally, there were a few cases of postpartum care past the official period of six weeks, and these were also presented in the table. Therefore, the following breakdown was used in Table 4.2 for the timing of postpartum care: within 24 hours, within 2 days (which includes within 24 hours), 3-6 days, 7-41 days, and 42 days or more. Because a few women in each survey had postpartum care but could not remember or did not know (DK) the time of first care, a Missing/DK column is included in the tables and subsequent analyses.

3.1 Postpartum Care

Information for this study comes from the Household Questionnaire and the pregnancy, postnatal⁵ care, and breastfeeding sections of the Women's Questionnaire. For noninstitutional births, the postpartum care variables are derived from the following questions:

Question: After (NAME) was born, did a health professional or a traditional birth attendant (TBA) check on your health?

² Woman-based analysis—as opposed to birth-based analysis—uses one delivery per woman, i.e., the most recent birth in the past five years. The woman-based approach represents pregnancy and delivery indicators, whereas the birth-based approach represents mostly neonatal indicators.

³ Noninstitutional births are births that did not occur in a health facility. These include all home deliveries, plus other places, such as the home of a traditional birth attendant.

⁴ The DHS questionnaire only had a two-digit box for days after delivery when postpartum care was received. Interviewers were instructed to put zeros in these boxes if the first postpartum checkup was received within the 24 hours after delivery. In the newly revised DHS questionnaire, a new two-digit box has been included for hours after delivery.

⁵ In DHS reports, this section is referred to as “postnatal”; in this study, the term “postpartum” is used instead.

Question: How many days or weeks after the delivery did the first checkup take place?

Question: Who checked on your health at that time?

Question: Where did the first check take place?

3.2 Correlates of Postpartum Care

3.2.1 Household Characteristics

Information on place of residence, sex of head of household, and socioeconomic status comes from the Household Questionnaire.

Residence: This is the de facto⁶ place of residence (urban-rural), the place in the cluster or sample point where the respondent was interviewed. Urban areas are classified as large cities (capital cities and cities with over 1 million population), small cities (population 50,000-999,999), and towns (other urban areas). Rural areas are usually less than 2,000 inhabitants and are assumed to be in the countryside.

Sex of head of household: This variable is classified as male or female.

Wealth index: The DHS wealth index is a standardized composite variable made up of quintiles, determined through Principal Component Analysis (from Factor Analysis) and based on approximately a dozen assets and services present in a household (e.g., type of flooring, water supply, electricity, radio, television, refrigerator, type of vehicle). It was developed by Macro staff in collaboration with The World Bank. Each quintile represents a relative measure of a household's socioeconomic status (Rutstein and Johnson, 2004).

3.2.2 Women's Characteristics

The information on women's characteristics, such as age, education, employment status, media exposure, and participation in health care decisionmaking, comes from the Women's Questionnaire.

Age: This is the age of the woman at the birth of the last child under five, and is calculated by subtracting the century month code of the date of birth of the child from the century month code of the date of birth reported by the respondent.⁷ This age is further classified into five-year age groups: less than 20, 20-24, 25-29, 30-34, and 35-49 years.

Education: This variable is reported as the highest level of education attended by the respondent and has the following categories: no education, primary, and secondary or higher.

Employment: Employment status is derived from the information collected on whether the respondent is currently working, and does not identify the type of employment, whether self-employed or working in the agricultural or nonagricultural sector.

Media exposure: This correlate covers information on whether the respondent has had any exposure to media sources like newspaper, radio, or television. Respondents who read the newspaper, listened to radio, or watched television—even if less than once a week—were categorized as having exposure to these media sources.⁸

⁶ This was the place where the woman was interviewed, which might not be the woman's usual place of residence.

⁷ If a woman did not know her date of birth, the interviewer used her reported age in completed years.

⁸ Except in the case of Eritrea, where the "no" code included media seen/read/listened to less than once a week.

3.2.3 Other Characteristics

Antenatal care: Respondents were asked if they received antenatal care during the pregnancy for the last live birth in the five years preceding the survey. If antenatal care was received, a second question inquired about the number of antenatal care visits, categorized as none, 1-3, or 4 or more.

Birth order of child: This variable looks at the birth order of the last live birth in the five years preceding the survey, categorized as 1, 2-4, or 5 or more.

3.3 Statistical Methods

The association between hypothesized determinants and postpartum care was examined using bivariate and multivariate analyses. A first series of tabulations explores the availability and characteristics of postpartum care, such as its occurrence with noninstitutional births, its timing, and place and provider of care. Next, cross-tabulations were produced for several characteristics of women. For total postpartum care, the fraction of institutional births was added to the fraction of noninstitutional births that received postpartum care. Characteristics highly associated with postpartum care were selected for multivariate analysis.

The dependent variable is broken down into four categories:

- Postpartum care through institutional births (postpartum care Prof-IB),
- Postpartum care by professional attendants at noninstitutional births (postpartum care Prof-NIB),
- Postpartum care by TBAs and other nonskilled attendants (e.g., relatives) at noninstitutional births (postpartum care Non-Prof-NIB), and
- No postpartum care (no PPC).

Multinomial logistic regression is used for multivariate analysis with a main-effects approach. Relative risk ratios (RRR) are used as measures of the likelihood of each type of postpartum care occurring (compared with no postpartum care), according to each category of selected variables. More information can be found in the appropriate section.

4 Results

4.1 Place of Delivery and Postpartum Care

Table 4.1 shows the distribution of women by whether their most recent birth in the five years preceding the survey was delivered in an institutional or noninstitutional setting, and whether they received postpartum care.

Countries in North Africa/West Asia/Europe and Central Asia generally have high levels of institutional births (over 90 percent), except in Egypt, where the level of institutional births is just over 50 percent. This is followed by the Latin America/Caribbean region, which shows rates in excess of 70 percent, except for Haiti (26 percent) and Peru (58 percent).

Sub-Saharan Africa has intermediate and mixed levels of institutional births, starting with Ethiopia, where only 5 percent of births take place in a health institution. Countries with moderate levels include Cameroon (62 percent), Eritrea (29 percent), Madagascar (33 percent), Mozambique (50 percent), Nigeria (35 percent), Rwanda (26 percent), and Uganda (39 percent). Countries with substantially higher levels include Benin (78 percent), Namibia (77 percent), and Zimbabwe (74 percent). The four countries in South/Southeast Asia show low to moderate levels, between 10 and 11 percent for Bangladesh, Cambodia, and Nepal, and 41 percent for Indonesia.

Table 4.1 shows the proportion of noninstitutional births for which women received postpartum care in the 42 days after the birth, and who provided the care. Again, there are wide differentials. The highest levels of postpartum care for noninstitutional births are in South/Southeast Asia: Cambodia (44 percent) and Indonesia (49 percent). These are followed by a few countries with rates between 16 and 30 percent: Bangladesh (17 percent), Ghana (25 percent), Haiti (19 percent), Madagascar (29 percent), Mozambique (21 percent), Nepal (19 percent), and Nigeria (19 percent). A third group of countries have rates between 10 and 15 percent: Burkina Faso (15 percent), Cameroon (13 percent), Kenya (11 percent), Mali (12 percent), Peru (14 percent), Zambia (13 percent), and Zimbabwe (12 percent). A last group of countries have rates under 10 percent, although for some countries in Latin America (Dominican Republic), Central Asia (Turkmenistan), North Africa/West Asia/Europe (Jordan), and even Sub-Saharan Africa (Benin and Namibia), these low rates are in the context of a high proportion of institutional births.

The most critical information, however, is the percentage of women who did not receive any postpartum care.⁹ The list is topped by Ethiopia, with 90 percent, followed by Bangladesh (73 percent), Nepal (72 percent), and Rwanda (71 percent). Other countries have substantial proportions of women who did not receive any postpartum care, including Burkina Faso (44 percent), Cambodia (46 percent), Eritrea (64 percent), Haiti (55 percent), Kenya (46 percent), Malawi (41 percent), Mali (49 percent), Nigeria (46 percent), Uganda (57 percent), and Zambia (41 percent). On average, in the 30 countries examined, *nearly 40 percent of women with a live birth in the five years preceding the survey did not receive a postpartum care checkup*. Figure 4.1 summarizes the information on postpartum care for institutional and noninstitutional births.

⁹ This figure is the complement to the percentage of women assumed to have received postpartum care for the most recent birth. Women receiving postpartum care is estimated as the sum of all institutional births (assumed to have received some type of postpartum care) plus the fraction of women with noninstitutional births who received postpartum care.

Table 4.1 Percent distribution of women whose most recent live birth occurred in the five years preceding the survey by place where birth occurred (institutional or noninstitutional) and, for noninstitutional births, receipt of postpartum care and person who provided care, DHS surveys 1999-2004

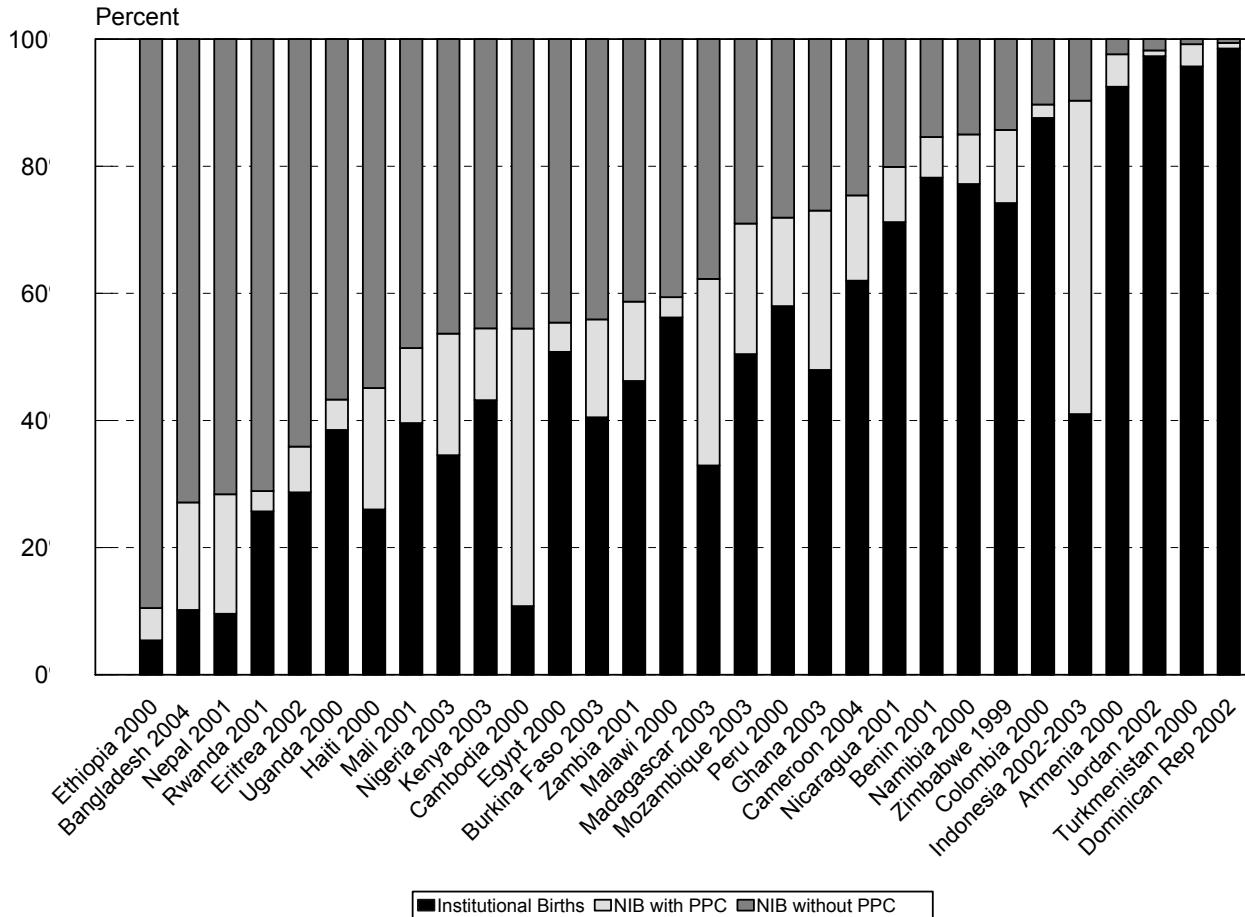
Region and country	Noninstitutional births				Did not receive PPC (5)	All births		Women Total (1+4+5) (7)	Number (8)
	Institutional births (1)	Received postpartum care		Total (2+3) (4)		Received PPC (1 + 4) ¹ (6)			
		From health professional (2)	From TBA/ other (3)						
Sub-Saharan Africa									
Benin 2001	78.2	5.5	0.9	6.4	15.4	84.6	100.0	3,514	
Burkina Faso 2003	40.5	9.7	5.7	15.4	44.1	55.9	100.0	7,427	
Cameroon 2004	62.0	6.3	7.1	13.4	24.6	75.4	100.0	5,289	
Eritrea 2002	28.7	6.6	0.6	7.2	64.1	35.9	100.0	4,152	
Ethiopia 2000	5.4	3.5	1.6	5.1	89.5	10.5	100.0	7,974	
Ghana 2003	48.0	8.2	16.9	25.1	27.0	73.1	100.0	2,630	
Kenya 2003	43.2	6.3	5.0	11.3	45.5	54.6	100.0	4,028	
Madagascar 2003	32.9	11.3	18.0	29.3	37.7	62.3	100.0	4,142	
Malawi 2000	56.2	1.7	1.5	3.2	40.6	59.4	100.0	8,028	
Mali 2001	39.6	3.0	8.8	11.8	48.6	51.4	100.0	8,231	
Mozambique 2003	50.4	20.0	0.5	20.5	29.0	71.0	100.0	7,138	
Namibia 2000	77.2	6.7	1.1	7.8	15.0	85.0	100.0	2,991	
Nigeria 2003	34.5	7.9	11.2	19.1	46.3	53.6	100.0	3,894	
Rwanda 2000	25.7	0.8	2.4	3.2	71.1	28.9	100.0	5,130	
Uganda 2000	38.5	2.6	2.2	4.8	56.7	43.3	100.0	4,452	
Zambia 2001	46.2	6.9	5.6	12.5	41.3	58.7	100.0	4,396	
Zimbabwe 1999	74.2	11.0	0.5	11.5	14.3	85.7	100.0	2,767	
North Africa/West Asia/Europe									
Armenia 2000	92.5	4.9	0.2	5.1	2.4	97.6	100.0	1,248	
Egypt 2000	50.8	4.1	0.5	4.6	44.6	55.4	100.0	7,931	
Jordan 2002	97.3	0.9	0.0	0.9	1.8	98.2	100.0	3,743	
Central Asia									
Turkmenistan 2000	95.7	3.4	0.1	3.5	0.8	99.2	100.0	2,460	
South/Southeast Asia									
Bangladesh 2004	10.2	8.0	8.9	16.9	72.9	27.1	100.0	5,387	
Cambodia 2000	10.8	13.4	30.2	43.6	45.5	54.4	100.0	5,678	
Indonesia 2002-2003	41.0	29.6	19.7	49.3	9.7	90.3	100.0	12,729	
Nepal 2001	9.6	5.3	13.5	18.8	71.6	28.4	100.0	4,739	
Latin America/Caribbean									
Colombia 2000	87.6	2.1	0.0	2.1	10.3	89.7	100.0	3,545	
Dominican Republic 2002	98.5	0.8	0.1	0.9	0.6	99.4	100.0	7,858	
Haiti 2000	26.0	7.0	12.1	19.1	54.9	45.1	100.0	4,237	
Nicaragua 2001	71.2	8.7	0.0	8.7	20.1	79.9	100.0	4,835	
Peru 2000	58.0	13.5	0.4	13.9	28.1	71.9	100.0	9,530	
Total ²	48.7	—————	12.4	—————	38.9	61.1			

Note: Missing values for a few countries range from 0 to 1.3 (average 0.3) percent and have been excluded in this and subsequent tables.

¹ Assumes all institutional births received postpartum care.

² Weighted averages

Figure 4.1 Postpartum Care for Institutional Births (IB) and Noninstitutional Births (NIB)



Another way of presenting these data is to look at the percentage of women receiving postpartum care only among women with noninstitutional births (see “Any checkup” column in Table 4.2). The countries can be grouped into three categories. The first category is those with very low levels of postpartum care (0 to 10 percent). These are Egypt (9 percent), Eritrea (10 percent), Ethiopia (5 percent), Malawi (7 percent), Rwanda (4 percent), and Uganda (8 percent). A second category is countries with postpartum care between 11 and 40 percent; there are 15 countries in this category ranging from Colombia (17 percent) to Cameroon (35 percent). The third category is countries with postpartum care above 40 percent. These include Armenia (68 percent), Cambodia (49 percent), Dominican Republic (59 percent), Ghana (48 percent), Indonesia (84 percent), Madagascar (44 percent), Mozambique (41 percent), Turkmenistan (81 percent), and Zimbabwe (45 percent). This last group of countries demonstrates the importance of outreach programs and increased access to health professionals for women who do not deliver at facilities. Indonesia is a leader in community outreach efforts for women during the perinatal period, despite having a large rural population and one that is dispersed on the many islands that make up the country. On average, in the 30 countries reviewed, *only 28 percent of women with noninstitutional births receive postpartum care.*

Table 4.2 Percent distribution of women whose most recent live noninstitutional birth was in the five years preceding the survey, by timing of first postpartum checkup, DHS surveys 1999-2004

Region and country	Timing of first postpartum checkup after delivery							Women		
	Within 24 hours ¹	Within 2 days	3-6 days after delivery	7-41 days after delivery	42 days or more after delivery	Missing/ don't know timing	Any checkup	No checkup	Total	Number
Sub-Saharan Africa										
Benin 2001	5.4	12.5	5.4	9.2	1.2	1.3	29.5	70.5	100.0	766
Burkina Faso 2003	5.5	12.1	3.4	8.6	1.2	0.7	25.9	74.1	100.0	4,421
Cameroon 2004	11.5	29.1	1.4	3.9	0.4	0.3	35.2	64.8	100.0	2,010
Eritrea 2002	1.0	1.9	1.3	4.7	2.0	0.2	10.1	89.9	100.0	2,961
Ethiopia 2000	1.5	2.6	1.0	1.2	0.4	0.2	5.3	94.7	100.0	7,542
Ghana 2003	5.1	25.4	9.3	12.2	0.9	0.5	48.2	51.8	100.0	1,368
Kenya 2003	4.7	10.1	2.4	6.7	0.5	0.1	19.9	80.1	100.0	2,287
Madagascar 2003	5.9	32.3	6.2	4.4	0.7	0.1	43.8	56.2	100.0	2,777
Malawi 2000	2.0	4.0	1.0	2.1	0.2	0.1	7.3	92.7	100.0	3,520
Mali 2001	0.0	12.3	1.1	2.9	0.2	3.2	19.6	80.4	100.0	4,972
Mozambique 2003	3.1	12.2	8.5	18.3	1.1	1.3	41.4	58.6	100.0	3,539
Namibia 2000	u	u	u	u	u	u	34.2	65.8	100.0	683
Nigeria 2003	12.7	23.4	2.5	2.5	0.3	0.6	29.2	70.8	100.0	2,549
Rwanda 2000	3.2	4.0	0.0	0.1	0.0	0.2	4.4	95.6	100.0	3,812
Uganda 2000	3.0	5.9	0.9	0.9	0.0	0.0	7.7	92.3	100.0	2,738
Zambia 2001	7.3	12.0	2.4	8.4	0.4	0.1	23.3	76.7	100.0	2,364
Zimbabwe 1999	6.9	14.8	4.0	15.5	10.3	0.1	44.6	55.4	100.0	713
North Africa/West Asia/Europe										
Armenia 2000	15.9	51.7	4.4	7.2	0.0	4.9	68.2	31.8	100.0	94
Egypt 2000	0.2	2.5	1.3	5.1	0.3	0.1	9.4	90.6	100.0	3,900
Jordan 2002	1.2	7.5	0.0	23.7	3.6	0.0	34.7	65.3	100.0	102
Central Asia										
Turkmenistan 2000	28.2	67.0	6.2	6.5	0.0	1.4	81.1	18.9	100.0	105
South/Southeast Asia										
Bangladesh 2004	8.2	11.5	1.5	4.7	1.1	0.1	18.8	81.2	100.0	4,838
Cambodia 2000	7.2	35.0	11.4	2.4	0.1	0.1	48.9	51.1	100.0	5,064
Indonesia 2002-2003	35.7	61.9	12.8	8.0	0.8	0.1	83.5	16.5	100.0	7,514
Nepal 2001	15.5	17.2	0.8	2.7	0.1	0.0	20.8	79.2	100.0	4,285
Latin America/Caribbean										
Colombia 2000	0.0	0.8	1.1	12.8	2.4	0.0	17.1	82.9	100.0	441
Dominican Republic 2002	4.2	15.7	17.8	17.3	5.9	2.4	59.3	40.7	100.0	115
Haiti 2000	3.1	14.8	5.5	4.6	0.3	0.6	25.8	74.2	100.0	3,134
Nicaragua 2001	0.0	3.6	4.0	20.8	1.6	0.1	30.2	69.8	100.0	1,390
Peru 2000	0.5	4.6	3.6	23.1	1.4	0.5	33.2	66.8	100.0	4,007

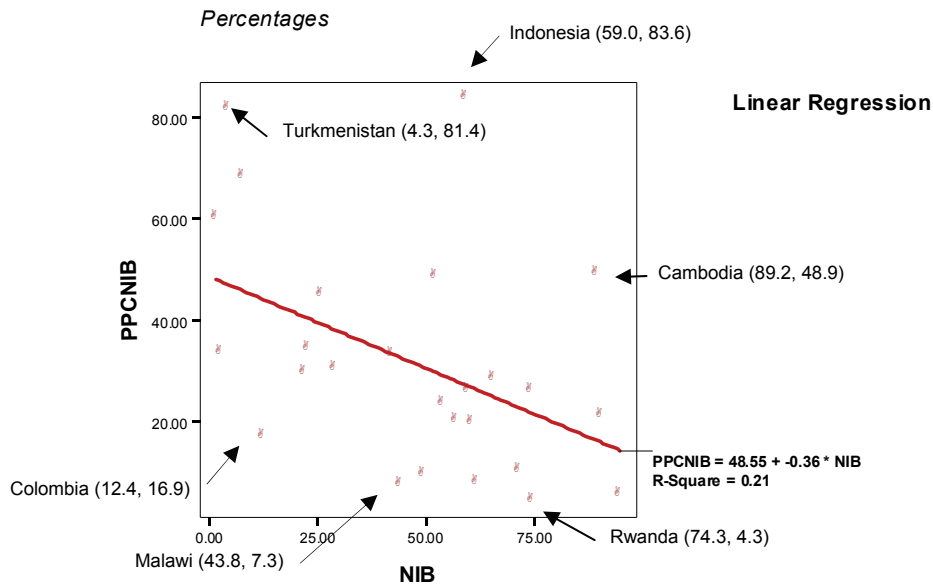
Note: Missing values are excluded.

¹ Not included in the total.

u = Unknown

A correlation analysis between noninstitutional births and receipt of postpartum care points out an interesting phenomenon (see Figure 4.2). The overall correlation is tenuous, but in the right direction: noninstitutional births are loosely associated with receiving less postpartum care. Positive outliers are Cambodia, Indonesia, and Turkmenistan. Turkmenistan presents an ideal situation with few noninstitutional births and a high percentage of those births receiving postpartum care. Indonesia and Cambodia have large proportions of noninstitutional births, but a relatively large proportion of these births receive postpartum care. On the negative side, are countries such as Colombia which has relatively few noninstitutional births, but less than one-fifth of such births receive postpartum care. The worst situation is in countries such as Malawi and Rwanda, where a large proportion of births are noninstitutional (44 and 74 percent, respectively), and only a few of the women (7 and 4 percent, respectively) received postpartum care.

Figure 4.2 Correlation between Noninstitutional Births and Postpartum Care (Linear Regression)



4.2 Timing of Postpartum Care (Noninstitutional Births)

When the postpartum care first occurred (timing of postpartum care) is the next important piece of information being considered. This information is available only for women who received postpartum care for their most recent noninstitutional birth in the past five years.¹⁰ Table 4.2 shows the distribution of these women by timing of first postpartum checkup. Although the DHS questionnaire did not ask for the number of hours after delivery that the postpartum care occurred, receipt of any postpartum care in the 24 hours after the birth was marked either 0 or 1 in the appropriate days box. This information was used to derive the first column of Table 4.2, which has particular importance for estimating early postpartum care.¹¹

Table 4.2 indicates that in only a few countries is significant postpartum care provided to noninstitutional births in the 24 hours following delivery. In the 29 countries for which timing data are available, on average, only 8 percent of women delivering at home have a postpartum care checkup within 24 hours of delivery. Indonesia is the only country where up to 36 percent of these births received postpartum care within 24 hours, and 62 percent of births in the two days after delivery. Given the wide dispersal of the Indonesian population, the effort is remarkable.

¹⁰ The revised version of the DHS questionnaire (from June 2005) now asks about postpartum care for both institutional and noninstitutional births. It also includes an extra set of boxes to specify the number of hours following the birth that the postpartum care occurred.

¹¹ The accuracy of this recall data is discussed later as a limitation of the study.

The next country scoring high on this service is Turkmenistan, where 28 percent of the few women who did not deliver at a facility received their first postpartum care within 24 hours, and about two-thirds received it within two days after delivery. Armenia (16 percent), Nepal (16 percent), and Nigeria (13 percent) rank substantially lower in providing early postpartum care. For the remaining 24 countries, hardly any postpartum care was received in the 24 hours after delivery, or none at all was received, as in the case of Colombia, Mali, and Nicaragua.

In 17 of the 29 countries, among women who received postpartum care, the majority received services within two days of delivery. Thereafter, the proportion drops substantially. It is of concern that in eight countries the highest level of receipt of postpartum care occurs between 7 and 41 days after delivery (particularly in the Latin America/Caribbean region and in Egypt and Jordan). A more complete picture can be seen when the means and medians of the timing of postpartum care are calculated (Table 4.3 and Figure 4.2). The first two columns of Table 4.3 present the situation for noninstitutional births; the median for receipt of postpartum care after delivery is three days. However, some countries have above average figures, such as Eritrea and Zimbabwe (15 days), Jordan (14 days), and several Latin American countries (8 to 10 days).

Table 4.2 confirms a worrying situation anticipated from Table 4.1: a large majority of noninstitutional births simply do not receive any postpartum care. For all countries, the weighted average is 72 percent. In the 17 sub-Saharan countries, more than half of women who delivered outside a facility did not receive postpartum care. In other regions, the situation is similar, except for Armenia, the Dominican Republic, Indonesia, and Turkmenistan, which have relatively lower percentages (32, 41, 17, and 19 percent, respectively) of women who do not receive postpartum care when delivering outside an institution.¹² Major changes are needed in the planning and implementation of postpartum care for women who do not seek delivery services at health facilities.

¹² These percentages need to be viewed with caution because they are based on relatively small numbers of cases (around 100).

Table 4.3 Mean and median timing of postpartum care (in days) for noninstitutional births in the five years preceding the survey and mean timing of postpartum care for all births, DHS surveys 1999-2004

Region and country	Noninstitutional births			All births	
	Mean time of postpartum care	Median time of postpartum care	Number of women with noninstitutional births	Mean time of postpartum care ¹	Total number of women
Sub-Saharan Africa					
Benin 2001	8.9	3.9	766	1.1	3,514
Burkina Faso 2003	9.6	3.4	4,421	3.0	7,427
Cameroon 2004	3.0	1.4	2,010	0.9	5,289
Eritrea 2002	23.8	14.8	2,961	5.1	4,152
Ethiopia 2000	11.3	3.3	7,542	5.6	7,974
Ghana 2003	5.9	2.8	1,368	2.3	2,630
Kenya 2003	6.6	2.9	2,287	1.7	4,028
Madagascar 2003	3.3	1.8	2,777	1.8	4,142
Malawi 2000	6.5	2.6	3,520	0.8	8,028
Mali 2001	3.7	1.9	4,972	1.1	8,231
Mozambique 2003	9.1	7.0	3,539	2.9	7,138
Namibia 2000	u	u	683.0	u	2,991
Nigeria 2003	2.8	1.2	2,549	1.3	3,894
Rwanda 2000	1.1	u	3,812	0.6	5,130
Uganda 2000	2.6	1.4	2,738	0.7	4,452
Zambia 2001	8.5	6.9	2,364	1.9	4,396
Zimbabwe 1999	21.7	14.7	713.0	2.5	2,767
North Africa/West Asia/Europe					
Armenia 2000	2.4	1.8	94.0	0.6	1,248
Egypt 2000	8.4	2.9	3,900	1.5	7,931
Jordan 2002	18.9	14.1	102.0	0.7	3,743
Central Asia					
Turkmenistan 2000	1.8	1.4	105.0	0.5	2,460
South/South East Asia					
Bangladesh 2004	9.7	1.4	4,838	6.2	5,387
Cambodia 2000	2.1	1.7	5,064	1.8	5,678
Indonesia 2002-2003	2.6	1.1	7,514	1.7	12,729
Nepal 2001	3.4	u	4,285	2.4	4,739
Latin America/Caribbean					
Colombia 2000	16.2	9.1	441	1.0	3,545
Dominican Republic 2002	14.6	10.2	115	0.6	7,858
Haiti 2000	5.1	2.4	3,134	2.4	4,237
Nicaragua 2001	12.0	8.2	1,390	2.0	4,835
Peru 2000	14.4	8.7	4,007	3.5	9,530
Total ²	7.3	3.2		2.1	

u = Unknown (information not available)

¹ Assumes all institutional births received first postpartum care at an average 0.5 days after delivery.

² Weighted average

The mean number of days following delivery that postpartum care occurred is larger than the median (more than double) because some countries have extremely high figures: Eritrea (24 days), Jordan (19 days), and Zimbabwe (22 days), and several Latin American countries (12 to 16 days). In addition to cultural and other barriers to accessing these services, some longer times [until receipt of postpartum care] may be related to topographic/geographic characteristics of the terrain that make it difficult for women to reach the available postpartum care centers, or for health personnel and workers to reach women in their households. If we take as given that noninstitutional births are at higher risk of undesirable outcomes from maternal complications, the occurrence and timing of postpartum care in these countries highlights the need for increased outreach efforts by the health care system.

The timing of postpartum care for all births (institutional and noninstitutional) is examined in Table 4.3. It is assumed that all institutional births receive postpartum care an average of 12 hours (or 0.5 days) after delivery. If we combine this estimate with the actual timing of noninstitutional births, we obtain the fourth column in Table 4.3, the mean time of postpartum care for all births.¹³ In the 29 countries for which data are available, the occurrence of first postpartum care for all births is an average of two days after delivery. This timing is considered too late because of the dangers of postpartum hemorrhage and hypertensive disorders, and would address only medium-term conditions such as postpartum sepsis. In some countries, the average timing of postpartum care occurs even later—Bangladesh (6 days), Burkina Faso (3 days), Eritrea (5 days), Ethiopia (6 days), Mozambique (3 days), Peru (4 days), and Zimbabwe (3 days)—because of a combination of lack of universal institutional delivery and late postpartum care for noninstitutional births.

4.3 Place of Postpartum Care (All Births)

The DHS questionnaire asked women who did not deliver at a health facility where they received their postpartum care. With this information and the information on place of delivery it is possible to determine the place where all postpartum care was provided—again assuming that all institutional births received postpartum care shortly after the birth (see Table 4.4). In all four countries in South/Southeast Asia, a substantial proportion of postpartum care takes place at home (or in a related location, e.g., the home of a TBA), from a high of nearly 80 percent in Cambodia to just under half of all births in Bangladesh. This picture coincides with the community orientation of service delivery in these countries.

This group of countries is followed by a group in which 20 to 44 percent of births receive postpartum care at home or in a related location. These countries are mostly in Sub-Saharan Africa: Ethiopia (29 percent), Ghana (26 percent), Madagascar (44 percent), Mali (21 percent), and Nigeria (30 percent). In the Latin America/Caribbean region, the only country in this group is Haiti, where 31 percent of postpartum care takes place at home. The situation of these two groups of countries probably reflects the development of varying types of community outreach postpartum care services by varying types of providers.

¹³ It is not possible to estimate a median time of postpartum care for institutional births; thus, the only measure of central tendency here is the mean.

Table 4.4 Percent distribution of women who received postpartum care for the most recent live birth in the five years preceding the survey, by place of first postpartum checkup, DHS surveys 1999-2004

Region and country	Place of first postpartum care			Number of women
	Health facility	Home or other place	Total	
Sub-Saharan Africa				
Benin 2001	98.7	1.3	100.0	2,973
Burkina Faso 2003	88.9	11.1	100.0	4,135
Cameroon 2004	88.4	11.6	100.0	3,970
Eritrea 2002	95.6	4.4	100.0	1,488
Ethiopia 2000	71.4	28.6	100.0	836
Ghana 2003	74.5	25.5	100.0	1,917
Kenya 2003	89.5	10.5	100.0	2,192
Madagascar 2003	55.8	44.2	100.0	2,579
Malawi 2000	97.5	2.5	100.0	4,765
Mali 2001	79.4	20.6	100.0	4,232
Mozambique 2003	99.8	0.2	100.0	5,041
Namibia 2000	98.4	1.6	100.0	2,527
Nigeria 2003	70.5	29.5	100.0	2,078
Rwanda 2000	90.9	9.1	100.0	1,482
Uganda 2000	92.3	7.7	100.0	1,925
Zambia 2001	90.6	9.4	100.0	2,578
Zimbabwe 1999	98.7	1.3	100.0	2,366
North Africa/West Asia/Europe				
Armenia 2000	95.4	4.6	100.0	1,218
Egypt 2000	96.5	3.5	100.0	4,397
Jordan 2002	100.0	0.0	100.0	3,677
Central Asia				
Turkmenistan 2000	96.9	3.1	100.0	2,438
South/Southeast Asia				
Bangladesh 2004	56.6	43.4	100.0	1,455
Cambodia 2000	20.9	79.1	100.0	3,090
Indonesia 2002-2003	49.4	50.6	100.0	11,483
Nepal 2001	40.8	59.2	100.0	1,342
Latin America/Caribbean				
Colombia 2000	100.0	0.0	100.0	3,178
Dominican Republic 2002	99.8	0.2	100.0	7,722
Haiti 2000	68.7	31.3	100.0	1,913
Nicaragua 2001	99.9	0.1	100.0	3,862
Peru 2000	97.0	3.0	100.0	6,833

In the remaining countries, a large majority of postpartum care is provided at health facilities. These findings indicate that, except for the countries highlighted above, the majority of countries have developed institution-based systems of postpartum care, whereby women give birth at a health facility or attend it after delivery, either on their own or by referral.

If analysis is restricted to noninstitutional births (table not shown) the pattern is similar to the one presented above, except that contrasts are greater, as with Ghana, Mali, and Nigeria, where receipt of postpartum care at home is 75, 90, and 84 percent, respectively. The major exceptions are Rwanda and Uganda, where the few noninstitutional births that received postpartum care did so mostly at home or in a related place (70 and 83 percent, respectively). As expected, an average of 68 percent of noninstitutional births received postpartum care at home.

4.4 Provider of Postpartum Care (Noninstitutional Births)

It is assumed that postpartum care for institutional births is provided by health professionals, whether doctors, nurses, or midwives. However, it is of interest to look at who the providers of postpartum care are among noninstitutional births (Table 4.5). In six of the 30 countries, a majority of postpartum care among noninstitutional births is provided by a TBA (trained or untrained): Cambodia (69 percent), Ghana (64 percent), Mali (58 percent), Nepal (69 percent), Nigeria (55 percent), and Rwanda (72 percent). In another eight countries, from about one-third to one-half of noninstitutional births are attended by a TBA: Cameroon (51 percent), Ethiopia (31 percent), Haiti (39 percent), Indonesia (40 percent), Kenya (42 percent), Malawi (46 percent), Uganda (45 percent), and Zambia (39 percent).

Table 4.5 Percent distribution of women who received postpartum care for the most recent live noninstitutional birth in the five years preceding the survey, by provider of postpartum care, DHS surveys 1999-2004

Region and country	Provider of postpartum care			Total	Number of women
	Health professional	Any TBA	Other ¹		
Sub-Saharan Africa					
Benin 2001	86.1	11.3	2.7	100.0	226
Burkina Faso 2003	63.0	36.0	1.0	100.0	1,144
Cameroon 2004	47.2	51.1	1.7	100.0	707
Eritrea 2002	91.2	8.2	0.6	100.0	298
Ethiopia 2000	69.3	30.7	0.0	100.0	403
Ghana 2003	32.7	63.5	3.8	100.0	659
Kenya 2003	55.8	42.1	2.1	100.0	455
Madagascar 2003	38.6	11.8	49.6	100.0	1,215
Malawi 2000	53.7	46.0	0.3	100.0	257
Mali 2001	25.5	57.5	17.0	100.0	975
Mozambique 2003	97.7	0.4	1.9	100.0	1,466
Namibia 2000	86.1	7.8	6.1	100.0	233
Nigeria 2003	41.6	54.6	3.8	100.0	744
Rwanda 2000	25.5	71.8	2.7	100.0	166
Uganda 2000	54.5	45.0	0.6	100.0	212
Zambia 2001	55.2	38.6	6.2	100.0	550
Zimbabwe 1999	95.5	3.6	0.9	100.0	318
North Africa/West Asia/Europe					
Armenia 2000	95.2	3.1	1.7	100.0	64
Egypt 2000	90.2	9.8	0.0	100.0	365
Jordan 2002	(100.0) ^a	(0.0) ^a	(0.0) ^a	100.0	35
Central Asia					
Turkmenistan 2000	96.7	0.8	2.5	100.0	85
South/Southeast Asia					
Bangladesh 2004	47.4	1.3	51.3	100.0	909
Cambodia 2000	30.7	68.9	0.4	100.0	2,477
Indonesia 2002-2003	60.0	39.9	0.1	100.0	6,274
Nepal 2001	28.1	69.4	2.6	100.0	890
Latin America/Caribbean					
Colombia 2000	100.0	0.0	0.0	100.0	76
Dominican Republic 2002	91.8	8.2	0.0	100.0	68
Haiti 2000	36.5	39.1	24.4	100.0	810
Nicaragua 2001	99.7	0.0	0.3	100.0	420
Peru 2000	96.9	0.6	2.5	100.0	1,329
Total²	57.4	35.5	7.1		

Note: Totals may not add to 100 because of rounding.

¹ Relative, friend, or other person (e.g., health student)

² Weighted average

^a Figures should be interpreted with caution because they are based on small numbers (<50).

It is interesting to note that in Bangladesh and Madagascar postpartum care for about half of noninstitutional births is received from other types of providers. These other providers include auxiliary health personnel, community volunteers, students of a health discipline, traditional healers, and even relatives or friends. There are four countries with sizable proportions in this category: Haiti (24 percent), Mali (17 percent), Namibia (6 percent), and Zambia (6 percent). Overall, there are 20 countries in which the majority of noninstitutional births are attended by health professionals, usually a physician, nurse, or midwife.

Despite large differentials across countries and regions, on average, 57 percent of providers of postpartum care for noninstitutional births are health professionals. Though not guaranteeing a safe birth, this level of coverage by health professionals is encouraging, considering the high risk of adverse outcomes for women delivering at home in many countries.

A combined analysis of the two variables—place of postpartum care and provider of postpartum care—indicates that, as expected, the large majority of providers of postpartum care in health facilities are health professionals (data not shown). Interestingly, in two countries in Asia—Bangladesh and Cambodia—more than one-fourth of providers of postpartum care in health facilities are not health professionals. These providers appear to be lower-level health workers (e.g., homeopaths, trained TBAs, auxiliary nurse-midwives) that are allowed to operate at some facilities. Conversely, most providers of postpartum care to women with noninstitutional births are not health professionals; however, there are some exceptions. In Armenia and Turkmenistan, 61 and 79 percent, respectively of postpartum care is provided at home by health professionals. It is also high in Indonesia (47 percent), followed by Cambodia (15 percent) and Madagascar (15 percent), and the Dominican Republic (13 percent). These are examples of the positive results of outreach health programs and the greater accessibility of health professionals to women who give birth at home.

Another way to examine the likelihood of receiving postpartum care is to relate it to the type of provider attending the woman's last delivery. Because we have hypothesized that all women delivering with a health professional would receive postpartum care, we focus on those delivering with other types of providers (TBAs, friends, and relatives). A quick review of the data (not shown) indicates that in half of the countries examined, women delivering with nonprofessional providers had very low levels of postpartum care, from zero or 1 percent (e.g., Armenia, Colombia, Egypt, Eritrea, Jordan, Nicaragua, and Peru) to 5 or 6 percent (e.g., Benin and Namibia); ten countries had low to moderate levels. Only in Cambodia (40 percent), Ghana (38 percent), and Indonesia (67 percent) is delivering with a nonprofessional provider related to significant levels of postpartum care.

5 Differentials in Postpartum Care

In this section, differentials in postpartum care by women's characteristics are presented for three subpopulations: institutional births, noninstitutional births, and all births (i.e., the sum of institutional and noninstitutional births).

5.1 Postpartum Care and Age at Time of Birth

Table 5.1 shows the proportion of women who received postpartum care for the most recent birth in the past five years by age at birth. As expected, in most countries the proportion receiving postpartum care tends to decline as age at birth increases. Among women with institutional births, this effect is seen in 19 countries, while there is little change in 11 other countries. The pattern is unclear for women with noninstitutional births. When all births are combined, postpartum care is the lowest among mothers age 35-49 in all countries except Cambodia, Egypt, Madagascar, and Nigeria, where mothers under age 20 are less likely to receive postpartum care. Conversely, younger women tend to have higher levels of postpartum care, probably reflecting increased education and wealth, as well as recent improvements in program outreach.

5.2 Postpartum Care and Birth Order

Table 5.2 shows the proportion of women who received postpartum care for the most recent birth in the past five years by birth order. The effect of birth order is unambiguous for institutional births and all births. In every country examined, the percentage receiving postpartum care is higher for first order births than for higher order births. As noted above, this may indicate recent improvements in policy and program effectiveness, as well as better education and economic conditions among the younger cohorts. It may also reflect an increased perception by the population of the need for care for first births, compared with subsequent births. Interestingly, among noninstitutional births, the opposite relationship is seen. That is, the occurrence of postpartum care is higher as birth order increases, especially for the 5+ category, although the effect is not as strong as in the preceding case. This may indicate that women who give birth at home have differential access to services or behave differently from their counterparts who have institutional births. These women, who are younger and/or delivering for the first time, may be less informed of, have less access to, or not feel as much need for postpartum care as older women and women at higher parity. Appendix Table A.1 provides more information on birth order differentials, by type of provider (i.e., health professional versus any TBA/other).

Table 5.1 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by age at birth, DHS surveys 1999-2004

Region and country	Institutional births						Noninstitutional births						All births					
	<20	20-24	25-29	30-34	35-49	Total	<20	20-24	25-29	30-34	35-49	Total	<20	20-24	25-29	30-34	35-49	Total
Sub-Saharan Africa																		
Benin 2001	76.7	80.9	77.0	80.0	75.1	78.2	6.5	5.6	7.2	6.6	6.3	6.4	83.2	86.5	84.2	86.6	81.4	84.6
Burkina Faso 2003	44.4	42.9	42.3	36.4	36.1	40.5	14.2	13.9	14.8	17.0	17.5	15.4	58.6	56.8	57.1	53.4	53.6	55.9
Cameroon 2004	61.9	62.2	62.3	64.2	59.0	62.0	13.4	14.4	11.8	14.1	12.8	13.4	75.3	76.6	74.1	78.3	71.8	75.4
Eritrea 2002	31.3	31.4	30.9	27.4	23.2	28.7	7.1	7.5	6.2	7.7	7.6	7.2	38.4	38.9	37.1	35.1	30.8	35.9
Ethiopia 2000	7.2	6.6	5.6	4.5	3.4	5.4	5.2	4.2	4.7	6.7	5.0	5.1	12.4	10.8	10.3	11.2	8.4	10.5
Ghana 2003	48.8	48.3	51.3	47.8	43.6	47.9	27.0	27.2	22.8	25.4	24.1	25.1	75.8	75.5	74.1	73.2	67.7	73.0
Kenya 2003	51.3	46.2	42.5	42.8	30.2	43.2	10.8	10.1	11.3	10.8	14.9	11.3	62.1	56.3	53.8	53.6	45.1	54.5
Madagascar 2003	28.7	37.2	33.7	31.1	31.5	33.0	30.1	26.3	32.8	29.1	28.5	29.3	58.8	63.5	66.5	60.2	60.0	62.3
Malawi 2000	59.6	57.3	56.6	53.9	51.0	56.2	2.7	3.2	2.4	4.6	3.8	3.2	62.3	60.5	59.0	58.5	54.8	59.4
Mali 2001	44.4	40.5	38.7	36.9	37.7	39.6	10.5	11.5	13.0	11.4	12.5	11.8	54.9	52.0	51.7	48.3	50.2	51.4
Mozambique 2003	57.1	52.1	48.6	46.6	45.0	50.5	18.8	20.6	19.9	22.4	21.9	20.5	75.9	72.7	68.5	69.0	66.9	71.0
Namibia 2000	81.2	79.3	79.7	79.0	66.2	77.2	6.8	7.3	6.9	9.1	9.2	7.8	88.0	86.6	86.6	88.1	75.4	85.0
Nigeria 2003	24.3	34.1	42.0	36.3	33.8	34.6	22.3	20.9	17.2	17.4	17.7	19.1	46.6	55.0	59.2	53.7	51.5	53.7
Rwanda 2000	37.8	33.3	27.5	20.4	17.5	25.7	4.1	3.9	3.6	3.3	2.1	3.2	41.9	37.2	31.1	23.7	19.6	28.9
Uganda 2000	49.7	42.1	35.4	34.3	28.2	38.5	3.8	5.2	3.8	5.9	5.5	4.8	53.5	47.3	39.2	40.2	33.7	43.3
Zambia 2001	49.1	47.9	50.9	41.4	36.7	46.2	14.1	12.9	9.7	12.7	13.7	12.5	63.2	60.8	60.6	54.1	50.4	58.7
Zimbabwe 1999	79.7	77.3	75.1	69.1	62.1	74.2	8.5	11.4	12.6	14.4	11.5	11.5	88.2	88.7	87.7	83.5	73.6	85.7
North Africa/West Asia/Europe																		
Armenia 2000	86.6	94.0	95.7	88.7	89.0	92.5	8.8	4.4	2.7	8.9	5.1	5.1	95.4	98.4	98.4	97.6	94.1	97.6
Egypt 2000	48.3	51.7	50.5	52.1	49.5	50.7	4.5	5.0	4.8	4.0	4.3	4.6	52.8	56.7	55.3	56.1	53.8	55.3
Jordan 2002	98.2	97.7	96.3	97.3	98.3	97.3	0	0.7	1.6	0.9	0.4	0.9	98.2	98.4	97.9	98.2	98.7	98.2
Central Asia																		
Turkmenistan 2000	96.5	97.1	96.5	93.2	92.4	95.7	2.5	2.2	2.7	5.5	7.2	3.5	99.0	99.3	99.2	98.7	99.6	99.2
South/Southwest Asia																		
Bangladesh 2004	10.0	10.8	12.0	8.4	5.8	10.2	17.7	16.0	16.4	17.0	18.4	16.9	27.7	26.8	28.4	25.4	24.2	27.1
Cambodia 2000	13.1	14.1	11.7	10.2	6.8	10.9	39.2	43.3	43.4	43.3	46.1	43.6	52.3	57.4	55.1	53.5	52.9	54.5
Indonesia 2002-2003	30.1	40.3	45.8	46.1	34.8	41.0	60.4	50.4	46.1	43.2	52.3	49.3	90.5	90.7	91.9	89.3	87.1	90.3
Nepal 2001	12.8	12.1	9.5	5.4	3.4	9.6	20.0	20.3	18.6	18.1	14.1	18.8	32.8	32.4	28.1	23.5	17.5	28.4
Latin America/Caribbean																		
Colombia 2000	86.9	87.5	90.1	86.5	85.4	87.5	2.1	2.0	1.9	3.1	1.5	2.1	89.0	89.5	92.0	89.6	86.9	89.6
Dominican Republic 2002	99.3	98.2	98.7	98.8	96.9	98.4	0.4	1.2	0.8	0.6	1.4	0.9	99.7	99.4	99.5	99.4	98.3	99.3
Haiti 2000	34.8	25.9	24.7	27.4	20.4	25.9	21.7	19.5	18.3	18.0	18.9	19.1	56.5	45.4	43.0	45.4	39.3	45.0
Nicaragua 2001	73.3	73.7	71.0	72.0	59.7	71.0	7.6	8.0	10.1	8.5	10.4	8.7	80.9	81.7	81.1	80.5	70.1	79.7
Peru 2000	55.5	59.2	59.9	61.8	50.8	58.0	15.0	14.0	13.8	12.6	14.8	13.9	70.5	73.2	73.7	74.4	65.6	71.9

Table 5.2 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by birth order, DHS surveys 1999-2004

Region and country	Institutional births				Noninstitutional births				All births			
	1	2-4	5+	Total	1	2-4	5+	Total	1	2-4	5+	Total
Sub-Saharan Africa												
Benin 2001	86.5	79.5	72.1	78.2	3.7	6.3	8.1	6.4	90.2	85.8	80.2	84.6
Burkina Faso 2003	53.2	41.1	33.9	40.5	13.2	14.1	17.9	15.4	66.4	55.2	51.8	55.9
Cameroon 2004	75.4	63.4	50.7	62.0	9.3	13.6	15.9	13.4	84.7	77.0	66.6	75.4
Eritrea 2002	44.4	31.5	16.9	28.7	6.3	7.1	7.7	7.2	50.7	38.6	24.6	35.9
Ethiopia 2000	12.4	5.2	2.8	5.4	4.8	4.7	5.5	5.1	17.2	9.9	8.3	10.5
Ghana 2003	60.2	49.8	36.7	47.9	20.7	25.5	27.5	25.1	80.9	75.3	64.2	73.0
Kenya 2003	65.5	44.1	24.3	43.2	7.9	10.6	15.1	11.3	73.4	54.7	39.4	54.5
Madagascar 2003	43.0	32.5	26.4	33.0	26.8	29.6	30.8	29.3	69.8	62.1	57.2	62.3
Malawi 2000	63.8	55.6	52.0	56.2	2.5	2.9	4.1	3.2	66.3	58.5	56.1	59.4
Mali 2001	49.3	42.0	34.0	39.6	9.9	11.4	12.9	11.8	59.2	53.4	46.9	51.4
Mozambique 2003	62.9	50.6	42.6	50.5	16.2	21	22.5	20.5	79.1	71.6	65.1	71.0
Namibia 2000	86.5	77.9	62.3	77.2	6.1	7.7	10.6	7.8	92.6	85.6	72.9	85.0
Nigeria 2003	43.9	36.9	27.3	34.6	17.1	19.3	19.9	19.1	61.0	56.2	47.2	53.7
Rwanda 2000	46.2	24.9	17.4	25.7	3.7	3.7	2.5	3.2	49.9	28.6	19.9	28.9
Uganda 2000	60.1	37.4	31.0	38.5	3.8	4.7	5.2	4.8	63.9	42.1	36.2	43.3
Zambia 2001	58.6	46.3	38.1	46.2	11.5	12.5	13.1	12.5	70.1	58.8	51.2	58.7
Zimbabwe 1999	85.2	73.8	58.0	74.2	6.6	13.2	15.1	11.5	91.8	87.0	73.1	85.7
North Africa/West Asia/Europe												
Armenia 2000	96.5	91.5	72.3	92.5	2.9	5.5	19.8	5.1	99.4	97.0	92.1	97.6
Egypt 2000	68.9	51.2	33.2	50.7	3.7	4.6	5.5	4.6	72.6	55.8	38.7	55.3
Jordan 2002	98.7	97.0	97.2	97.3	0.1	1.2	0.9	0.9	98.8	98.2	98.1	98.2
Central Asia												
Turkmenistan 2000	98.5	95.8	90.4	95.7	1.3	3.2	8.8	3.5	99.8	99.0	99.2	99.2
South/Southwest Asia												
Bangladesh 2004	17.8	8.5	3.4	10.2	19.7	16.1	14.9	16.9	37.5	24.6	18.3	27.1
Cambodia 2000	20.0	12.0	4.4	10.9	40.3	43.4	45.7	43.6	60.3	55.4	50.1	54.5
Indonesia 2002-2003	47.9	41.0	21.6	41.0	45.8	49.8	56.7	49.3	93.7	90.8	78.3	90.3
Nepal 2001	20.3	8.6	3.1	9.6	18.5	18.8	18.9	18.8	38.8	27.4	22.0	28.4
Latin America/Caribbean												
Colombia 2000	94.6	86.9	65.4	87.5	1.2	2.1	5.5	2.1	95.8	89.0	70.9	89.6
Dominican Republic 2002	99.3	98.9	94.4	98.4	0.6	0.7	2.6	0.9	99.9	99.6	97.0	99.3
Haiti 2000	43.5	28.7	11.6	25.9	17.9	19.4	19.5	19.1	61.4	48.1	31.1	45.0
Nicaragua 2001	83.5	73.0	51.0	71.0	5.4	8.9	12.7	8.7	88.9	81.9	63.7	79.7
Peru 2000	74.0	61.0	28.2	58.0	9.5	14.1	19.7	13.9	83.5	75.1	47.9	71.9

5.3 Postpartum Care and Urban-rural Residence

Table 5.3 shows the proportion of women who received postpartum care for the most recent birth in the past five years by whether the woman lived in an urban or rural area. As expected, in all countries where women delivered at a health facility, postpartum care was higher if the woman lived in an urban area. However, when the analysis looked at noninstitutional births, the opposite effect was seen, i.e., postpartum care is higher among women living in rural areas (except in Ethiopia and Madagascar). This seems to indicate that women in rural areas who have noninstitutional births are more likely to receive postpartum care. However, it could also reflect greater programmatic effort in providing postpartum care to women in rural areas; or it could be a combination of the two. Conversely, the results may reflect that some women in urban areas are delivering at home and are not receiving postpartum care. If the differentials on residence are examined further, by type of provider (i.e., health professional versus any TBA/other), the pattern remains largely the same, although somewhat weakened (see Appendix Table A.2). Sixteen countries show the same orientation as before; eight countries show a reverse association (i.e., more postpartum care among women when the provider is a health professional); and six countries had such small numbers as to preclude comparison.

Table 5.3 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by residence, DHS surveys 1999-2004

Region and country	Institutional births			Noninstitutional births			All births		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Sub-Saharan Africa									
Benin 2001	86.1	74.3	78.2	4.9	7.2	6.4	91.0	81.5	84.6
Burkina Faso 2003	88.9	32.5	40.5	5.2	17.1	15.4	94.1	49.6	55.9
Cameroon 2004	83.2	43.9	62.0	7.5	18.4	13.4	90.7	62.3	75.4
Eritrea 2002	65.1	9.4	28.7	4.5	8.6	7.2	69.6	18.0	35.9
Ethiopia 2000	33.3	1.9	5.4	9.9	4.4	5.1	43.2	6.3	10.5
Ghana 2003	79.3	30.5	47.9	13.2	31.7	25.1	92.5	62.2	73.0
Kenya 2003	73.3	35.4	43.2	5.8	12.7	11.3	79.1	48.1	54.5
Madagascar 2003	44.7	30.1	33.0	30.6	29.0	29.3	75.3	59.1	62.3
Malawi 2000	82.9	52.0	56.2	0.9	3.6	3.2	83.8	55.6	59.4
Mali 2001	81.1	26.2	39.6	8.3	13.0	11.8	89.4	39.2	51.4
Mozambique 2003	82.5	35.8	50.5	10.1	25.3	20.5	92.6	61.1	71.0
Namibia 2000	93.2	67.7	77.2	3.5	10.4	7.8	96.7	78.1	85.0
Nigeria 2003	56.6	25.4	34.6	17.3	19.9	19.1	73.9	45.3	53.7
Rwanda 2000	64.9	19.0	25.7	2.9	3.3	3.2	67.8	22.3	28.9
Uganda 2000	80.7	32.4	38.5	3.4	5.0	4.8	84.1	37.4	43.3
Zambia 2001	79.2	29.2	46.1	10.0	13.8	12.5	89.2	43.0	58.6
Zimbabwe 1999	90.1	65.8	74.2	5.3	14.8	11.5	95.4	80.6	85.7
North Africa/West Asia/Europe									
Armenia 2000	98.8	85.2	92.5	0.8	10.1	5.1	99.6	95.3	97.6
Egypt 2000	72.0	36.5	50.8	2.5	6.0	4.6	74.5	42.5	55.4
Jordan 2002	97.6	96.3	97.3	1.0	0.7	0.9	98.6	97.0	98.2
Central Asia									
Turkmenistan 2000	98.3	93.9	95.7	1.6	4.8	3.5	99.9	98.7	99.2
South/Southeast Asia									
Bangladesh 2004	24.2	6.5	10.2	15.4	17.3	16.9	39.6	23.8	27.1
Cambodia 2000	36.8	6.7	10.9	35.1	45.0	43.6	71.9	51.7	54.5
Indonesia 2002-2003	60.8	23.6	41.0	33.3	63.3	49.3	94.1	86.9	90.3
Nepal 2001	46.2	6.9	9.6	10.4	19.4	18.8	56.6	26.3	28.4
Latin America/Caribbean									
Colombia 2000	94.5	70.6	87.6	1.2	4.5	2.1	95.7	75.1	89.7
Dominican Republic 2002	99.2	97.1	98.5	0.6	1.4	0.9	99.8	98.5	99.4
Haiti 2000	52.7	11.5	26.0	16.2	20.7	19.1	68.9	32.2	45.1
Nicaragua 2001	89.7	49.7	71.2	4.9	13.1	8.7	94.6	62.8	79.9
Peru 2000	82.4	23.8	58.0	8.2	22.0	13.9	90.6	45.8	71.9

When all births are considered (see Table 5.3), the figures for postpartum care by urban-rural residence are similar to those for institutional births. Countries where the differentials are not large include Benin, Cameroon, Ghana, Madagascar, Namibia, and Zimbabwe in Sub-Saharan Africa; Armenia, Jordan, and Turkmenistan in North Africa/West Asia/Europe/Central Asia; Indonesia in South/Southeast Asia; and all the Latin America/Caribbean countries except Haiti and Peru.

Differences in postpartum care by urban-rural residence are moderate in Cambodia (72 and 52 percent, respectively), Malawi (84 and 56 percent), and Nigeria (74 and 45 percent). There are more contrasting differentials in Egypt, Haiti, Kenya, Mali, Nepal, Peru, Uganda, and Zambia, where twice as many women are receiving postpartum care in urban areas as in rural areas. However, gaps are even more striking in Eritrea, Ethiopia, and Rwanda, where women in urban areas are three to seven times more likely to receive postpartum care than women in rural areas.

5.4 Postpartum Care and Level of Education

Table 5.4 shows the proportion of women who receive postpartum care for the most recent birth in the past five years by level of education. As expected, among institutional births, higher education is associated with greater likelihood of receiving postpartum care, and illiteracy (in a number of countries) is associated with less likelihood of receiving postpartum care (Table 5.4). In some countries—Bangladesh, Cambodia, Ethiopia, and Peru—the effect is seen mostly at the secondary or higher level.

For women with noninstitutional births, the relationship appears to be the opposite. Generally, women with no education exhibit higher levels of postpartum care than women with any level of education, especially secondary or higher education (except in Madagascar, Jordan, and Bangladesh). However, when postpartum care is broken down by the provider (Appendix Table A.3), the picture is less clear. The previous relationship still holds for 11 countries, but in another eight countries it is reversed, that is, postpartum care is higher among women with more education when the provider is a health professional. Conversely, the least educated tend to have more postpartum care provided by a TBA or a relative or friend. This further breakdown reduces denominators so that relationships cannot be ascertained in five countries.

Analyses combining all births show a similar pattern to that of institutional births. Similar levels of postpartum care at different educational levels can be found in Benin, the Dominican Republic, Jordan, and Turkmenistan, while moderate differences are found between no education and secondary or higher levels of education in Cambodia, Colombia, Ghana, Indonesia, Namibia, and Zimbabwe. The small differentials in these countries appear to indicate either the wide accessibility of health services or the presence of effective outreach programs for less educated women.

Much larger differences are found in the remaining 20 countries. Ranges from around two to three times as much difference between no education and secondary or higher are found in Bangladesh, Burkina Faso, Cameroon, Egypt, Haiti, Kenya, Malawi, Mali, Nepal, Nicaragua, Nigeria, Peru, Uganda, and Zambia. However, the most striking contrasts are seen in Eritrea and Rwanda, where women with the highest level of education are about five times as likely to receive postpartum care as those with no education; and in Ethiopia, where women with secondary or higher education are eight times as likely to have received postpartum care as those with no education (54 and 7 percent, respectively).

These findings shows how government efforts to increase women's level of education can lead to increased likelihood that women will receive postpartum care after a birth.

Table 5.4 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by education, DHS surveys 1999-2004

Region and country	Institutional births				Noninstitutional births				All births			
	No education	Primary	Secondary or higher	Total	No education	Primary	Secondary or higher	Total	No education	Primary	Secondary or higher	Total
Sub-Saharan Africa												
Benin 2001	73.3	87.8	98.7	78.2	7.4	5.0	1.0	6.4	80.7	92.8	99.7	84.6
Burkina Faso 2003	34.8	70.9	95.0	40.5	16.4	11.0	4.0	15.4	51.2	81.9	99.0	55.9
Cameroon 2004	22.4	68.4	89.8	62.0	24.6	12.3	4.5	13.4	47.0	80.7	94.3	75.4
Eritrea 2002	11.8	41.0	86.4	28.7	8.1	7.0	2.8	7.2	19.9	48.0	89.2	35.9
Ethiopia 2000	2.2	9.8	44.3	5.4	4.4	7.6	9.2	5.1	6.6	17.4	53.5	10.5
Ghana 2003	29.0	43.8	69.2	47.9	28.8	30.0	18.5	25.1	57.8	73.8	87.7	73.0
Kenya 2003	15.0	39.1	71.7	43.2	11.4	12.4	8.4	11.3	26.4	51.5	80.1	54.5
Madagascar 2003	17.3	31.8	52.9	33.0	26.1	30.5	30.3	29.3	43.4	62.3	83.2	62.3
Malawi 2000	45.1	57.9	87.0	56.2	2.5	3.8	0.7	3.2	47.6	61.7	87.7	59.4
Mali 2001	34.0	58.6	91.2	39.6	12.4	10.9	4.8	11.8	46.4	69.5	96.0	51.4
Mozambique 2003	32.4	61.8	95.6	50.5	24.8	18.4	4.2	20.5	57.2	80.2	99.8	71.0
Namibia 2000	47.6	69.7	89.3	77.2	11.9	10.3	5.1	7.8	59.5	80.0	94.4	85.0
Nigeria 2003	11.2	43.6	72.3	34.6	22.6	19.3	12.1	19.1	33.8	62.9	84.4	53.7
Rwanda 2000	13.2	25.7	69.2	25.7	2.6	3.9	1.7	3.2	15.8	29.6	70.9	28.9
Uganda 2000	19.3	38.2	76.1	38.5	5.1	4.8	3.9	4.8	24.4	43.0	80.0	43.3
Zambia 2001	18.4	39.4	79.4	46.1	11.6	14.6	7.7	12.5	30.0	54.0	87.1	58.6
Zimbabwe 1999	45.9	64.8	86.2	74.2	23.4	14.3	7.5	11.5	69.3	79.1	93.7	85.7
North Africa/West Asia/ Europe												
Armenia 2000	0.0	0.0	92.5	92.5	0.0	0.0	5.1	5.1	0.0	0.0	97.6	97.6
Egypt 2000	32.0	46.5	68.4	50.8	5.0	5.0	4.1	4.6	37.0	51.5	72.5	55.4
Jordan 2002	90.4	95.2	97.8	97.3	0.5	0.8	1.0	0.9	90.9	96.0	98.8	98.2
Central Asia												
Turkmenistan 2000	83.5	94.7	95.8	95.7	9.6	5.3	3.4	3.5	93.1	100	99.2	99.2
South/Southeast Asia												
Bangladesh 2004	2.7	6.9	21.7	10.2	12.6	17.5	21.2	16.9	15.3	24.4	42.9	27.1
Cambodia 2000	3.3	9.0	34.2	10.9	44.6	44.6	38.0	43.6	47.9	53.6	72.2	54.5
Indonesia 2002-2003	10.6	25.0	60.4	41.0	67.7	61.4	35.0	49.3	78.3	86.4	95.4	90.3
Nepal 2001	4.3	12.1	36.0	9.6	20.8	13.5	13.5	18.8	25.1	25.6	49.5	28.4
Latin America/ Caribbean												
Colombia 2000	61.8	75.8	96.6	87.6	8.4	3.7	0.8	2.1	70.2	79.5	97.4	89.7
Dominican Republic 2002	91.5	98.3	99.2	98.5	3.6	0.9	0.7	0.9	95.1	99.2	99.9	99.4
Haiti 2000	11.5	23.8	62.6	26.0	19.5	19.4	17.7	19.1	31.0	43.2	80.3	45.1
Nicaragua 2001	39.0	66.3	93.4	71.2	14.0	10.8	3.5	8.7	53.0	77.1	96.9	79.9
Peru 2000	14.5	30.6	81.6	58.0	18.7	21.6	8.3	13.9	33.2	52.2	89.9	71.9

5.5 Postpartum Care and Household Wealth Status

Table 5.5 presents the distribution of women who received postpartum care according to household wealth status. As expected, for women delivering at health facilities, the proportion receiving postpartum care is positively associated with household wealth. The differentials are especially marked for women in the highest wealth quintile in Bangladesh, Cambodia, Ethiopia, Haiti, Indonesia, Malawi, Mali, Rwanda, and Uganda, where levels of postpartum care are much higher than for women in the lower wealth quintiles.

Table 5.5 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by household wealth status (wealth quintiles), DHS surveys 1999-2004

Region and country	Institutional births						Noninstitutional births						All births					
	Lowest	Second	Middle	Fourth	Highest	Total	Lowest	Second	Middle	Fourth	Highest	Total	Lowest	Second	Middle	Fourth	Highest	Total
Sub-Saharan Africa																		
Benin 2001	57.1	67.6	82.3	91.8	98.2	78.2	12.8	8.1	5.8	2.8	0.9	6.4	69.9	75.7	88.1	94.6	99.1	84.6
Burkina Faso 2003	19.1	26.8	33.9	46.2	86.2	40.5	15.5	15.5	18.9	17.6	7.1	15.4	34.6	42.3	52.8	63.8	93.3	55.9
Cameroon 2004	28.8	44.1	69.7	86.2	92.5	62.0	21.5	20.2	11.4	6.6	4.1	13.4	50.3	64.3	81.1	92.8	96.6	75.4
Eritrea 2002	5.6	6.4	12.6	43.7	84.9	28.7	8.9	8.2	8.5	7.7	1.7	7.2	14.5	14.6	21.1	51.4	86.6	35.9
Ethiopia 2000	0.7	1.1	1.3	2.6	24.7	5.4	3.6	3.8	3.3	6.3	9.1	5.1	4.3	4.9	4.6	8.9	33.8	10.5
Ghana 2003	18.3	31.6	44.0	73.2	90.8	47.9	30.6	34.5	31.6	15.7	6.8	25.1	48.9	66.1	75.6	88.9	97.6	73.0
Kenya 2003	16.2	31.6	38.1	54.6	77.0	43.2	15.8	11.9	11.9	10.1	6.6	11.3	32.0	43.5	50.0	64.7	83.6	54.5
Madagascar 2003	19.0	23.5	32.9	42.4	54.5	33.0	31.1	30.4	29.7	25.2	29.2	29.3	50.1	53.9	62.6	67.6	83.7	62.3
Malawi 2000	46.8	49.7	52.0	52.5	81.9	56.2	3.4	3.8	4.1	3.0	1.5	3.2	50.2	53.5	56.1	55.5	83.4	59.4
Mali 2001	21.8	24.4	26.3	45.1	86.5	39.6	13.9	12.4	12.4	13.3	6.4	11.8	35.7	36.8	38.7	58.4	92.9	51.4
Mozambique 2003	25.3	34.3	44.6	70.5	90.6	50.5	24.3	26.7	22.7	18.9	7.8	20.5	49.6	61.0	67.3	89.4	98.4	71.0
Namibia 2000	56.2	65.4	78.8	86.0	96.5	77.2	10.9	10.2	8.7	6.9	2.7	7.8	67.1	75.6	87.5	92.9	99.2	85.0
Nigeria 2003	13.3	18.3	27.2	44.3	80.1	34.6	19.4	19.7	22.8	20.9	11.5	19.1	32.7	38.0	50.0	65.2	91.6	53.7
Rwanda 2000	15.7	15.9	17.0	22.0	58.4	25.7	3.9	3.2	2.6	3.8	2.5	3.2	19.6	19.1	19.6	25.8	60.9	28.9
Uganda 2000	18.6	25.1	32.2	44.4	79.5	38.5	5.4	4.4	4.1	5.9	4.0	4.8	24.0	29.5	36.3	50.3	83.5	43.3
Zambia 2001	20.1	22.9	36.0	69.4	91.7	46.2	12.6	15.9	15.1	12.0	5.0	12.5	32.7	38.8	51.1	81.4	96.7	58.7
Zimbabwe 1999	58.5	63.6	70.0	82.9	94.0	74.2	19.1	16.2	11.5	7.9	3.6	11.5	77.6	79.8	81.5	90.8	97.6	85.7
North Africa/West Asia/Europe																		
Armenia 2000	81.6	87.0	98.0	98.5	99.8	92.5	12.2	8.8	1.4	1.5	0.2	5.1	93.8	95.8	99.4	100.0	100.0	97.6
Egypt 2000	23.5	33.5	47.6	62.5	85.0	50.7	6.1	5.7	5.5	3.7	2.1	4.6	29.6	39.2	53.1	66.2	87.1	55.3
Jordan 2002	94.6	97.3	97.4	99.2	99.3	97.3	1.5	1.1	1.1	0.4	0.0	0.9	96.1	98.4	98.5	99.6	99.3	98.2
Central Asia																		
Turkmenistan 2000	94.2	95.5	95.1	95.0	99.1	95.7	4.0	4.3	3.7	4.2	0.9	3.5	98.2	99.8	98.8	99.2	100.0	99.2
South/Southeast Asia																		
Bangladesh 2004	1.9	3.5	5.6	12.3	32.7	10.2	12.7	16.2	15.6	21.3	20.3	16.9	14.6	19.7	21.2	33.6	53.0	27.1
Cambodia 2000	2.1	3.3	5.1	9.1	48.6	10.9	42.4	45.8	44.1	49.1	34.6	43.6	44.5	49.1	49.2	58.2	83.2	54.5
Indonesia 2002-2003	11.6	25.5	38.6	54.2	81.4	41.0	68.6	63.2	52.3	40.9	16.8	49.3	80.2	88.7	90.9	95.1	98.2	90.3
Nepal 2001	1.9	3.2	5.4	9.7	36.9	9.6	12.0	19.3	29.6	19.0	14.9	18.8	13.9	22.5	35.0	28.7	51.8	28.4
Latin America/Caribbean																		
Colombia 2000	64.6	85.8	95.0	97.4	98.4	87.5	5.6	3.1	0.9	0.2	0.1	2.1	70.2	88.9	95.9	97.6	98.5	89.6
Dominican Republic 2002	u	u	u	u	u	98.4	u	u	u	u	u	0.9	u	u	u	u	u	99.3
Haiti 2000	3.9	10.5	13.1	38.0	68.4	25.9	19.7	19.7	23.3	21.3	10.1	19.1	23.6	30.2	36.4	59.3	78.5	45.0
Nicaragua 2001	32.8	64.0	83.4	91.1	96.3	71.0	14.4	12.0	7.2	5.3	2.1	8.7	47.2	76.0	90.6	96.4	98.4	79.7
Peru 2000	16.0	41.0	73.7	89.5	96.3	58.0	20.4	20.8	13.4	6.0	2.0	13.9	36.4	61.8	87.1	95.5	98.3	71.9

u = Unknown (information not available)

The situation is reversed for noninstitutional births. The proportion of women receiving postpartum care is lowest among women in the highest wealth quintile (except in Bangladesh, Madagascar, and Nepal). Percentages receiving postpartum care are similar for the remaining wealth quintiles in several countries. It is unclear why women in more affluent households are less likely to obtain postpartum care than their counterparts in the lower wealth quintiles. While not obtaining postpartum care may be a matter of choice on the part of some women, it may also be that outreach programs are targeting women with fewer resources.

The situation for all births is similar to that of institutional births. The prevalence of postpartum care rises gradually from lowest to highest wealth quintile, except in Armenia, Jordan, and Turkmenistan, where postpartum care coverage is almost universal. Some differentials are moderate, as in Benin, Colombia, Indonesia, Namibia, and Zimbabwe. Large differentials are seen in 16 countries, where women

in the highest quintile are two to three times more likely to receive postpartum care than women in the lowest wealth quintile. In Bangladesh, Nepal, and Uganda the differences are fourfold.

Eritrea and Ethiopia present an interesting situation. While the differentials in postpartum care between women in the lowest and highest wealth quintiles are the largest overall—a six- to eightfold difference (from 15 to 87 percent in Eritrea and from 4 to 34 percent in Ethiopia)—there are only small differentials between the lowest and middle quintiles.

In Ethiopia, the lowest, second, and middle wealth quintiles show an almost unchanging level of postpartum care (4.3, 4.9, 4.6, respectively), improving to only 9 percent for women in the fourth quintile, and reaching just one-third of women in the highest wealth quintile. Such low levels of postpartum care, even among women in the most affluent households, indicate limited availability of postpartum care services.

Appendix Table A.4 shows the differentials in postpartum care by wealth quintile and type of provider.

5.6 Postpartum Care and Antenatal Care

It is reasonable to assume that exposure to the formal health care system will influence whether a woman receives postpartum care after giving birth. For example, Mishra and Retherford (2006) found that receipt of antenatal care has a large effect on institutional delivery in India. Table 5.6 examines the association between receipt of antenatal care and receipt of postpartum care. As expected, women who received antenatal care for the last birth in the past five years and whose last birth was at a health facility, were much more likely to have received postpartum care than other women. This relationship is very strong, especially in Bangladesh, Burkina Faso, Cambodia, Ethiopia, Madagascar, Nepal, and Nigeria, where receipt of antenatal care is associated with some level of postpartum care, while lack of exposure to antenatal care is associated with negligible levels of postpartum care.

Among women who delivered at home, the relationship is less clear. There are eight countries where receipt of antenatal care is associated with receipt of postpartum care. However, the relationship is reversed in five countries, and in 14 countries there does not seem to be any association at all, or there are insufficient numbers to determine the relationship. When the differentials are examined by type of provider of postpartum care (Appendix Table A.5), in five of the eight countries that showed a positive relationship between antenatal care and postpartum care, the association is reversed when the providers are TBA/others. Similarly, in the five countries that showed a negative relationship, the association is reversed in three—i.e., antenatal care is positively related to receiving postpartum care—if the provider is a health professional. In the other countries, there are insufficient numbers or the relationship is unclear.

The situation for all births is the same as for institutional births. There is a strong association between antenatal care and postpartum care. The exceptions are Armenia, the Dominican Republic, Jordan, and Turkmenistan, where differentials are small. A small influence was also observed for Cambodia and Indonesia, where receipt of antenatal care increases the likelihood of receiving postpartum care by only 38 and 44 percent, respectively. In 18 other countries, receiving antenatal care increases the likelihood of receiving postpartum care two to three times. The association is particularly strong in Burkina Faso, Eritrea, Ethiopia, Malawi, Mozambique, and Uganda, where women are four to five times more likely to receive postpartum care if they have previously received antenatal care.

Table 5.6 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by whether they received antenatal care and by the number of antenatal care visits, DHS surveys 1999-2004

Region and country	Institutional births							Noninstitutional births							All births									
	Antenatal care		Number of antenatal care visits					Total	Antenatal care		Number of antenatal care visits					Total	Antenatal care		Number of antenatal care visits					Total
			No	Yes	0	1-3	4+				Don't know/missing	No	Yes	0	1-3				4+	Don't know/missing	No	Yes	0	
Sub-Saharan Africa																								
Benin 2001	25.7	85.5	10.9	75.7	89.8	72.0	78.2	12.4	5.6	12.6	9.2	4.3	5.2	6.4	38.1	91.1	23.5	84.9	94.1	77.2	84.6			
Burkina Faso 2003	3.8	53.6	3.7	50.2	63.8	52.5	40.5	11.1	17.0	10.9	17.1	16.6	19.0	15.4	14.9	70.6	14.6	67.3	80.4	71.5	55.9			
Cameroon 2004	10.9	72.0	10.2	55.1	78.5	53.4	62.0	25.5	11.0	25.7	16.8	8.7	17.1	13.4	36.4	83.0	35.9	71.9	87.2	70.5	75.4			
Eritrea 2002	7.2	37.4	7.1	14.9	53.9	18.5	28.7	5.6	7.8	5.6	9.0	6.6	23.8	7.2	12.8	45.2	12.7	23.9	60.5	42.3	35.9			
Ethiopia 2000	1.4	16.2	1.4	6.9	30.1	21.8	5.4	3.5	9.3	3.4	8.1	10.9	19.5	5.1	4.9	25.5	4.8	15.0	41.0	41.3	10.5			
Ghana 2003	10.0	50.6	10.4	20.7	59.2	54.5	47.9	18.0	25.6	17.9	36.3	22.3	26.7	25.1	28.0	76.2	28.3	57.0	81.5	81.2	73			
Kenya 2003	11.1	46.8	10.3	35.5	54.3	48.0	43.2	9.6	11.5	8.3	13.0	10.2	19.4	11.3	20.7	58.3	18.6	48.5	64.5	67.4	54.5			
Madagascar 2003	3.0	38.9	2.8	30.1	47.9	38.0	33.0	24.0	30.4	23.8	28.5	32.2	33.1	29.3	27.0	69.3	26.6	58.6	80.1	71.1	62.3			
Malawi 2000	13.5	58.3	12.4	53.7	61.5	52.0	56.2	3.2	3.2	3.1	3.5	3.0	2.4	3.2	16.7	61.5	15.5	57.2	64.5	54.4	59.4			
Mali 2001	9.3	62.2	9.0	47.2	72.1	68.4	39.6	13.3	10.7	13.4	13.9	8.7	8.8	11.8	22.6	72.9	22.4	61.1	80.8	77.2	51.4			
Mozambique 2003	6.5	58.2	5.1	45.3	65.4	67.4	50.5	11.3	22.2	11.4	24.5	20.8	18.7	20.5	17.8	80.4	16.5	69.8	86.2	86.1	71.0			
Namibia 2000	28.4	81.0	26.7	68.4	83.1	81.8	77.2	10.3	7.6	8.0	10.1	7.2	8.6	7.8	38.7	88.6	34.7	78.5	90.3	90.4	85.0			
Nigeria 2003	4.0	52.8	3.7	27.8	58.1	71.2	34.6	19.5	18.9	19.4	21.0	19.4	9.7	19.1	23.5	71.7	23.1	48.8	77.5	80.9	53.7			
Rwanda 2000	8.5	27.1	7.4	24.5	47.4	27.9	25.7	2.1	3.3	2.2	3.3	3.9	0.0	3.2	10.6	30.4	9.6	27.8	51.3	27.9	28.9			
Uganda 2000	8.4	40.6	7.8	28.7	54.0	55.2	38.5	2.2	4.9	2.3	4.8	5.2	1.9	4.8	10.6	45.5	10.1	33.5	59.2	57.1	43.3			
Zambia 2001	9.5	48.3	7.4	30.6	52.9	56.1	46.2	10.3	12.6	11.5	11.6	13.1	5.0	12.5	19.8	60.9	18.9	42.2	66.0	61.1	58.7			
Zimbabwe 1999	31.8	77.0	34.5	67.5	77.5	83.1	74.2	7.4	11.8	5.5	13.5	12.0	8.9	11.5	39.2	88.8	40.0	81.0	89.5	92.0	85.7			
North Africa/West Asia/Europe																								
Armenia 2000	66.0	94.6	65.1	86.8	97.7	92.8	92.5	18.2	4.1	18.7	10.2	1.7	4.8	5.1	84.2	98.7	83.8	97.0	99.4	97.6	97.6			
Egypt 2000	29.0	68.0	29.0	43.2	75.3	76.9	50.7	5.2	4.2	5.2	5.2	3.8	4.5	4.6	34.2	72.2	34.2	48.4	79.1	81.4	55.3			
Jordan 2002	86.3	97.5	86.8	91.2	97.9	100.0	97.3	1.1	0.9	0.6	1.7	0.9	0.0	0.9	87.4	98.4	87.4	92.9	98.8	100.0	98.2			
Central Asia																								
Turkmenistan 2000	79.8	96.0	77.9	86.5	96.3	96.8	95.7	7.8	3.4	8.5	11.7	3.0	3.2	3.5	87.6	99.4	86.4	98.2	99.3	100.0	99.2			
South/Southeast Asia																								
Bangladesh 2004	2.2	18.6	2.2	9.5	34.5	24.7	10.2	13.6	20.4	12.1	19.7	23.4	0.0	16.9	15.8	39.0	14.3	29.2	57.9	24.7	27.1			
Cambodia 2000	3.3	20.2	3.3	15.6	40.3	3.3	10.9	43.3	44.1	43.3	45.2	42.8	22.1	43.6	46.6	64.3	46.6	60.8	83.1	25.4	54.5			
Indonesia 2002-2003	10.1	42.6	8.4	14.9	47.3	36.0	41.0	53.6	49.1	52.6	66.7	46.0	57.6	49.3	63.7	91.7	61.0	81.6	93.3	93.6	90.3			
Nepal 2001	1.8	17.8	1.8	8.5	40.1	26.4	9.6	13.8	24.0	13.7	26.9	16.7	45.4	18.8	15.6	41.8	15.5	35.4	56.8	71.8	28.4			
Latin America/Caribbean																								
Colombia 2000	48.4	91.5	48.0	71.8	94.1	89.0	87.5	3.6	2.0	3.6	3.1	1.8	5.5	2.1	52.0	93.5	51.6	74.9	95.9	94.5	89.6			
Dominican Republic 2002	88.1	98.7	80.3	93.1	98.9	97.4	98.4	3.3	0.8	3.5	2.5	0.8	1.5	0.9	91.4	99.5	83.8	95.6	99.7	98.9	99.3			
Haiti 2000	9.6	29.9	9.4	15.0	41.6	41.4	25.9	13.9	20.4	13.6	22.1	19.0	21.8	19.1	23.5	50.3	23.0	37.1	60.6	63.2	45.0			
Nicaragua 2001	28.9	78.0	28.9	57.6	81.8	77.6	71.0	11.4	8.2	11.4	12.4	7.5	7.7	8.7	40.3	86.2	40.3	70.0	89.3	85.3	79.7			
Peru 2000	17.4	66.2	17.6	37.1	72.0	41.7	58.0	13.4	14.1	11.9	19.8	13.0	16.0	13.9	30.8	80.3	29.5	56.9	85.0	57.7	71.9			

Table 5.6 also shows the likelihood of a women receiving postpartum care by the number of antenatal care (ANC) visits (none, 1-3, and 4+). The pattern is similar to that described above for the relationship between receipt of antenatal care and receipt of postpartum care, except that the association between the two extremes (no visits versus 4+ visits) is even stronger. Still, the biggest differential is between women who have had no ANC visits and those who have had one to three visits, which highlights the importance of having even one ANC visit. For institutional births, four or more visits are associated with the highest level of postpartum care. For noninstitutional births, the pattern is less clear. Analysis of postpartum care by number of antenatal care visits (1-3 versus 4+) identifies an unusual pattern. In almost half (13) of the countries, women with four or more antenatal care visits are less likely to receive postpartum care than women with one to three visits. This relationship persists, even when the data are distributed by type of provider (Appendix Table A.5), except in Haiti, Indonesia, and Nepal, where having more ANC visits is related to increased postpartum care if that care was provided by a health professional. Interpreting these findings is difficult because they suggest that increased ANC visits

(in some situations) are not necessarily related to increased postpartum care or that more ANC visits among women who deliver at home may be associated with less postpartum care.

It should be noted that the “don’t know/missing” category in Table 5.6 often produces levels of postpartum care between the 1-3 and 4+ categories, or similar to the 4+ category.

5.7 Postpartum Care and Media Exposure

The DHS questionnaire asked women who had a live birth in the five years preceding the survey whether they read newspapers, listen to the radio, and watch television.¹⁴ Answers to these questions provide an estimate of women’s exposure to mass media. Table 5.7 shows the percentage of women who received postpartum care by whether they were exposed to each of the three types of mass media. For institutional births, women exposed to mass media were much more likely to have received postpartum care than those who were not exposed to mass media. In a few countries with high levels of postpartum care, such as the Dominican Republic, Jordan, and Turkmenistan, no relationship was found between receipt of postpartum care and exposure to mass media.

For noninstitutional births, the relationship was the reverse. Women who delivered at home and had no exposure to mass media generally had higher levels of postpartum care than those who were exposed to mass media. Results for all births were similar to those for institutional births. In countries such as Armenia, Benin, the Dominican Republic, Indonesia, Jordan, Turkmenistan, and Zimbabwe, exposure to mass media does not appear to be associated with increased postpartum care.

In all other countries, the differentials in levels of postpartum care by exposure to newspapers, radio, and television vary, but are always higher for exposed women. For newspapers, the difference between exposed women and nonexposed women ranges from about 30 percent (e.g., Cambodia, Malawi, and Nicaragua) to two or three times the level for nonexposed women (e.g., Mali, Rwanda, Peru). The contrast is greatest in Ethiopia, where postpartum care is nearly six times higher for women who read the newspaper than for those who do not. Radio has slightly less influence on levels of postpartum care, but is still higher for women who listen to the radio than those who do not. Differentials for radio are highest in Ethiopia (3.5 times), Rwanda (2.0 times), and Uganda (1.9 times).

¹⁴ The actual questions are: “Do you read a newspaper or magazine[/listen to the radio]/[/watch television] almost every day, once a week, less than once a week, or not at all?” The first three answers were recoded as yes and the fourth as no.

Table 5.7 Proportion of women who received postpartum care for the most recent live birth in the five years preceding the survey, by media exposure, DHS surveys 1999-2004

Region and country	Institutional births							Noninstitutional births							All births								
	News-paper		Radio		Tele-vision		Total	News-paper		Radio		Tele-vision		Total	News-paper		Radio		Tele-vision		Total		
	Yes	No	Yes	No	Yes	No		Yes	No	Yes	No	Yes	No		Yes	No	Yes	No	Yes	No			
Sub-Saharan Africa																							
Benin 2001	96.1	76.9	81.8	61.9	92.5	73.8	78.2	1.1	6.8	5.2	11.8	2.9	7.5	6.4	97.2	83.7	87.0	73.7	95.4	81.3	84.6		
Burkina Faso 2003	92.6	37.7	46.9	26.2	69.9	33.0	40.5	5.1	16.0	15.3	15.7	14.0	15.8	15.4	97.7	53.7	62.2	41.9	83.9	48.8	55.9		
Cameroon 2004	87.6	55.1	72.9	46.7	84.0	47.5	62.0	5.9	15.4	9.7	18.5	7.1	17.5	13.4	93.5	70.5	82.6	65.2	91.1	65.0	75.4		
Eritrea 2002	69.2	42.8	38.0	10.7	80.9	15.7	28.7	4.4	7.3	7.1	7.4	2.8	8.3	7.2	73.6	50.1	45.1	18.1	83.7	24.0	35.9		
Ethiopia 2000	33.0	3.6	15.1	2.2	38.1	3.3	5.4	12.3	4.6	7.5	4.2	9.1	4.8	5.1	45.3	8.2	22.6	6.4	47.2	8.1	10.5		
Ghana 2003	81.8	44.3	51.8	27.4	65.6	31.3	47.9	12.4	26.5	24.7	26.8	19.3	30.5	25.1	94.2	70.8	76.5	54.2	84.9	61.8	73.0		
Kenya 2003	61.5	33.4	47.8	22.8	68.2	32.8	43.2	10.5	11.7	11.0	12.6	8.1	12.6	11.3	72.0	45.1	58.8	35.4	76.3	45.4	54.5		
Madagascar 2003	50.0	27.5	40.9	20.8	55.2	27.6	33.0	29.9	29.2	29.6	29.0	27.1	29.9	29.3	79.9	56.7	70.5	49.8	82.3	57.5	62.3		
Malawi 2000	69.9	51.4	59.3	46.8	72.4	54.6	56.2	3.6	3.0	3.4	2.6	3.4	3.2	3.2	73.5	54.4	62.7	49.4	75.8	57.8	59.4		
Mali 2001	87.5	37.0	45.2	23.1	66.3	25.5	39.6	5.3	12.2	11.7	12.3	9.5	13.1	11.8	92.8	49.2	56.9	35.4	75.8	38.6	51.4		
Mozambique 2003	89.1	45.9	52.6	40.5	81.1	40.1	50.5	6.8	22.2	20.2	22.2	12.1	23.4	20.5	95.9	68.1	72.8	62.7	93.2	63.5	71.0		
Namibia 2000	89.0	65.3	80.7	62.3	93.2	68.2	77.2	6.1	9.4	7.6	9.0	3.0	10.5	7.8	95.1	74.7	88.3	71.3	96.2	78.7	85.0		
Nigeria 2003	73.6	27.4	39.4	21.8	59.6	20.4	34.6	13.7	20.0	19.1	19.4	16.6	20.5	19.1	87.3	47.4	58.5	41.2	76.2	40.9	53.7		
Rwanda 2000	47.0	21.1	33.0	15.9	64.7	21.8	25.7	2.7	3.4	3.5	2.8	2.4	3.3	3.2	49.7	24.5	36.5	18.7	67.1	25.1	28.9		
Uganda 2000	74.5	33.1	50.1	24.6	78.4	34.9	38.5	4.2	4.8	5.3	4.2	3.6	4.9	4.8	78.7	37.9	55.4	28.8	82.0	39.8	43.3		
Zambia 2001	78.7	39.4	59.4	30.8	81.5	34.5	46.2	8.1	13.4	11.0	14.3	8.2	13.9	12.5	86.8	52.8	70.4	45.1	89.7	48.4	58.7		
Zimbabwe 1999	87.7	65.6	79.3	67.5	87.8	68.4	74.2	6.0	15.0	10.2	13.1	5.7	14.0	11.5	93.7	80.6	89.5	80.6	93.5	82.4	85.7		
North Africa/West Asia/Europe																							
Armenia 2000	95.1	86.6	97.0	88.7	93.4	76.3	92.5	3.9	8.0	2.3	7.5	4.5	16.4	5.1	99.0	94.6	99.3	96.2	97.9	92.7	97.6		
Egypt 2000	69.2	39.1	53.8	37.0	52.0	31.7	50.7	4.3	4.8	4.3	6.1	4.5	5.7	4.6	73.5	43.9	58.1	43.1	56.5	37.4	55.3		
Jordan 2002	97.9	95.8	97.6	96.9	97.1	98.4	97.3	0.9	1.1	1.0	0.8	1.0	0.5	0.9	98.8	96.9	98.6	97.7	98.1	98.9	98.2		
Central Asia																							
Turkmenistan 2000	97.1	94.4	96.5	95.3	96.1	90.0	95.7	2.7	4.2	2.6	3.9	3.2	7.6	3.5	99.8	98.6	99.1	99.2	99.3	97.6	99.2		
South/Southeast Asia																							
Bangladesh 2004	29.6	6.5	11.9	8.9	15.4	4.3	10.2	21.5	16.0	19.5	14.7	18.1	15.3	16.9	51.1	22.5	31.4	23.6	33.5	19.6	27.1		
Cambodia 2000	27.6	6.0	13.8	5.6	14.4	4.2	10.9	40.3	44.7	44.4	42.3	42.4	45.9	43.6	67.9	50.7	58.2	47.9	56.8	50.1	54.5		
Indonesia 2002-2003	54.4	28.2	43.9	33.0	43.6	15.6	41.0	40.0	58.1	47.7	53.6	48.1	60.7	49.3	94.4	86.3	91.6	86.6	91.7	76.3	90.3		
Nepal 2001	u	u	u	u	u	u	9.6	u	u	u	u	u	u	18.8	u	u	u	u	u	u	28.4		
Latin America/Caribbean																							
Colombia 2000	u	u	u	u	u	u	87.5	u	u	u	u	u	u	2.1	u	u	u	u	u	u	89.6		
Dominican Republic 2002	99.1	97.8	98.8	96.9	99.1	93.8	98.4	0.8	1.0	0.7	1.8	0.6	2.8	0.9	99.9	98.8	99.5	98.7	99.7	96.6	99.3		
Haiti 2000	44.5	17.9	31.1	10.8	49.2	13.2	25.9	21.4	18.1	19.0	19.5	16.6	20.5	19.1	65.9	36.0	50.1	30.3	65.8	33.7	45.0		
Nicaragua 2001	85.7	58.6	73.9	57.3	88.2	44.0	71.0	5.6	11.4	8.0	12.1	5.3	14.1	8.7	91.3	70.0	81.9	69.4	93.5	58.1	79.7		
Peru 2000	71.2	21.4	59.4	37.0	68.0	16.3	58.0	11.3	21.2	13.8	15.7	12.1	21.6	13.9	82.5	42.6	73.2	52.7	80.1	37.9	71.9		

u = Unknown (information not available)

5.8 Postpartum Care and Women's Status

Table 5.8 shows the proportion of women who received postpartum care by three indicators of women's status: sex of head of household, current employment status, and whether the woman participates in decisionmaking regarding her own health care. Overall, the results were mixed and none of the three indicators of women's status showed a clear pattern of relationship with the proportion of women receiving postpartum care.

Analyses so far have focused on the bivariate relationship between the likelihood of receiving postpartum care and various background characteristics. The next section presents a multivariate analysis of postpartum care with these same characteristics, to identify the most important and consistent characteristics.

6 Multivariate Analysis

The preceding bivariate analyses identified several factors associated with women's receipt of postpartum care. The next step is to select a representative group of countries for the multivariate analysis and define the variables that will be included in the multivariate model.

6.1 Country Selection

Throughout the bivariate analyses in previous sections, a few countries either had consistently low levels of postpartum care or showed important contrasts when women's characteristics were considered. For the multivariate analysis, nine countries were selected as follows:¹⁵

Sub-Saharan Africa: Burkina Faso, Ethiopia, and Rwanda

North Africa/West Asia/Europe/Central Asia: Egypt

South/Southeast Asia: Cambodia, Indonesia, and Nepal

Latin America/Caribbean: Haiti and Peru

6.2 Variables for the Multivariate Model

6.2.1 Dependent Variable

The dependent variable was receiving (or not receiving) postpartum care by place of birth and provider of care, and had values for the following four categories: delivery in a health facility (woman is assumed to have received postpartum care), postpartum care by health professional among non-institutional births, postpartum care by TBA/other among noninstitutional births, and no postpartum care (the reference category). These items correspond to columns 1, 2, 3, and 5, respectively, in Table 4.1.

6.2.2 Independent Variables

Nine independent variables were selected, based on their association with postpartum care in the bivariate analyses. They represent different correlates of women's characteristics (as indicated in the conceptual framework in Figure 1.1) and are described in Table 6.1.

Because the two variables around antenatal care (whether ANC was received and the number of ANC visits) are similar (both include "not receiving antenatal care"), it was decided to include only the second variable in the model. Likewise, the variables around delivery (i.e., place where delivery occurred and provider at delivery) are not included because they are already part of the dependent variable. They would be highly significant in the final model, but would not necessarily add explanation to it.

¹⁵ Although not following a particular procedure, countries selected were largely considered representative of their regions and had sufficient numbers in all categories of the dependent variable to allow for analysis. They had different levels of institutional births. They also had sufficient numbers and proportions of births not receiving postpartum care to allow for analysis. Haiti is considered a unique country in Latin America and represents the Caribbean, while Peru was selected to represent the Spanish-speaking countries of Central and South America, where large contrasts were found in the bivariate analyses. Finally, given their programmatic efforts in maternal health and community outreach, the South/Southeast Asian region was overrepresented with three countries. See Appendix Table A.6 for more details on the countries selected.

Table 6.1 Independent variables included in the multivariate analysis model

Dimension	Variable	Values
Sociodemographic factors	1 Residence	Urban, rural
	2 Woman's employment	Not working, working
	3 Birth order (representing parity)	1, 2-4, 5+
	4 Woman's education	None, primary, secondary+
	5 Wealth (quintiles)	Lowest, second, middle, fourth, highest
Exposure to health care	6 Number of antenatal care visits	0 (no antenatal care), 1-3, 4+, don't know/missing
Media contact	7 Newspapers	Yes, no
	8 Television	Yes, no
Status—health care decisionmaking	9 Woman's health care decisionmaking	Self, jointly, others

6.3 Results of Multivariate Analysis

Table 6.2 presents the results of the multinomial logistic regression applied to the nine selected countries. It shows the effects of the nine independent variables that were most consistently associated with postpartum care in the bivariate analysis, on the various modalities of postpartum care described above. For each of the countries, effects are calculated for the “full” model, the one in which all nine explanatory variables have been added to the equation.

Effects are estimated through relative risk ratios (RRRs). Relative risks are predicted probabilities based on the fitted multinomial model, and can be represented as $P1/P4$, $P2/P4$, and $P3/P4$, where:

- P1 is the probability of postpartum care by TBA/others among noninstitutional births,
- P2 is the probability of postpartum care by a health professional among noninstitutional births,
- P3 is the probability of postpartum care through institutional births, and
- P4 is the probability of receiving no postpartum care.

P4 has been arbitrarily designated as the reference category in this analysis. In Table 6.2, $P1/P4$ is column 1, $P2/P4$ is column 2, and $P3/P4$ is column 3. The RRRs in each column are, in turn, estimated for each of the categories of the nine explanatory variables, choosing one value as the reference category. For example, in Table 6.2 for Burkina Faso, the RRR 2.88 in column 3 for the residence variable is the ratio of $P3/P4$ —the probability of having postpartum care in an institutional birth over not receiving postpartum care—for urban residence compared with the $P3/P4$ probability for rural residence (RRR of 1.00). Because the dependent variable has more than two categories, relative risks are not complementary, that is, they do not add up to one as in the case of a binary dependent variable, where $P + (1 - P) = 1$. Results need to be interpreted with caution because RRRs can be affected by dissimilar increases or reductions in individual p-values. However, in our examples, RRRs for each explanatory variable provide an idea of the likelihood of receiving postpartum care services by background characteristics of women.

Table 6.2 Effects (relative risk ratios) of women's background characteristics on postpartum care: multinomial logistic regression for nine developing countries, noninstitutional births (NIB) and institutional births, DHS surveys 2000-2004

Background characteristic	Burkina Faso 2003			Ethiopia 2000			Rwanda 2000		
	Post-partum care by TBA/others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)	Post-partum care by TBA/others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)	Post-partum care by TBA/others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)
Residence									
Urban (1)	0.22**	2.06***	2.88***	0.60	1.34	4.05***	0.81	(2.66*)	2.74***
Rural (2)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Woman's employment									
Yes (0)	1.83	1.38	1.01	1.34	0.96	0.94	1.05	(0.58)	0.98
No (1)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Birth order									
5+ (1)	1.10	0.99	0.68***	1.38	0.97	0.49***	0.42**	(0.59)	0.31***
2-4 (2)	0.70*	0.84	0.62***	1.02	0.76	0.49***	0.64	(1.00)	0.33***
1 (3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Woman's education									
Secondary+ (0)	1.22	1.70	3.81**	1.32	1.14	3.34***	1.54	(1.12)	4.50***
Primary (1)	1.29	1.14	2.07***	1.04	0.81	1.80***	1.45	(1.00)	1.49***
None (2)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Wealth (quintiles)									
Highest (1)	2.26**	1.72*	6.28***	0.97	2.42***	5.98***	0.85	(1.56)	2.48***
Fourth (2)	1.65**	1.58**	2.68***	1.37	1.48	2.13*	0.98	(0.92)	1.20
Middle (3)	1.31	1.64***	1.88***	0.78	0.96	1.72	0.85	(0.55)	0.97
Second (4)	1.15	1.15	1.51***	1.11	0.70	1.20	0.75	(1.13)	0.99
Lowest (5)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Antenatal care visits									
4+ (1)	2.80***	11.59***	50.61***	1.32	4.62***	7.32***	3.04*	(7.34*)	9.16***
1-3 visits (2)	1.89***	7.24***	30.16***	1.24	3.15***	2.77***	1.96	(2.17)	4.03***
0 (3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Read newspaper									
Yes (0)	4.55**	2.36	3.40**	0.83	1.88*	1.00	0.97	(1.16)	1.24*
No (1)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Watch television									
Yes (0)	3.72***	1.37*	1.91***	1.80	1.12	2.07***	1.09	(1.35)	1.69***
No (1)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00
Health care decisionmaking									
Self (1)	0.71	1.52**	1.16	na	na	na	0.98	(0.98)	0.88
Jointly (2)	0.85	1.57**	1.43**	na	na	na	0.83	(0.40)	0.79*
Others (3)	1.00	1.00	1.00	na	na	na	1.00	(1.00)	1.00
Number of cases	415	415	738	158	317	799	108	49	1,465

Continued...

Table 6.2—Continued

Background characteristic	Cambodia 2000			Indonesia 2002-2003			Nepal 2001		
	Post-partum care by TBA/others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)	Post-partum care by TBA/others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)	Post-partum care by TBA/others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)
Residence									
Urban (1)	1.00	1.46**	2.72***	0.82*	1.00	2.43***	0.21***	0.98	2.72***
Rural (2)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Woman's employment									
Yes (0)	1.11	0.94	1.03	0.99	1.02	1.03	0.25***	0.40***	0.62***
No (1)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Birth order									
5+ (1)	1.11	0.95	0.47***	0.88	0.74**	0.53***	1.18	1.00	0.46**
2-4 (2)	1.06	1.00	0.58***	0.99	0.94	0.75***	1.07	0.99	0.51**
1 (3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Woman's education									
Secondary+ (0)	0.76	2.15***	2.48***	0.68**	2.26***	3.10***	0.25***	1.56**	2.09***
Primary (1)	1.00	1.38**	1.35*	0.95	1.34*	1.44*	0.45***	1.05	1.28
None (2)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Wealth (quintiles)									
Highest (1)	0.88	5.66***	4.80***	0.75	1.53*	15.74***	1.01	2.86***	4.02***
Fourth (2)	1.13	3.01***	3.80***	0.84	1.68***	6.95***	1.36	2.10**	1.95**
Middle (3)	1.02	1.50**	2.22**	1.10	1.52***	4.10***	2.24***	1.92*	1.53
Second (4)	1.17	1.34	2.02**	1.08	1.54***	2.60***	1.43*	1.64	1.39
Lowest (5)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Antenatal care visits									
4+ (1)	1.23	4.14***	7.03***	2.80***	10.75***	13.88***	1.09	6.01***	11.96***
1-3 visits (2)	1.10	2.28***	2.89***	2.20***	4.61***	2.89***	2.18***	3.85***	3.43***
0 (3)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Read newspaper									
Yes (0)	0.98	1.15	1.55**	0.98	1.32***	1.19***	na	na	na
No (1)	1.00	1.00	1.00	1.00	1.00	1.00	na	na	na
Watch television									
Yes (0)	0.83	1.20	1.42**	1.13	1.46***	1.14***	na	na	na
No (1)	1.00	1.00	1.00	1.00	1.00	1.00	na	na	na
Health care decisionmaking									
Self (1)	na	na	na	0.81*	0.85	0.97	0.57**	1.13	1.26
Jointly (2)	na	na	na	0.64***	0.77*	1.00	0.88	1.60*	1.47*
Others (3)	na	na	na	1.00	1.00	1.00	1.00	1.00	1.00
Number of cases	1,749	715	541	2,273	4,366	5,075	465	236	420

Continued...

Table 6.2—Continued

Background characteristic	Egypt 2000			Haiti 2000			Peru 2000		
	Post-partum care by TBA/ others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)	Post-partum care by TBA/ others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)	Post-partum care by TBA/ others for NIB (1)	Post-partum care by health professional for NIB (2)	Institutional births (3)
Residence									
Urban (1)	(0.45)	0.77	1.69***	1.01*	1.48*	1.72***	(0.36)	1.14	2.91***
Rural (2)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Woman's employment									
Yes (0)	(0.31)	1.19	1.29**	1.25*	1.06	1.07	(1.26)	1.19**	0.90
No (1)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Birth order									
5+ (1)	(0.29*)	1.00	0.46***	1.03	0.73	0.49***	(0.29*)	0.85	0.44***
2-4 (2)	(0.44)	0.83	0.49***	1.01	1.08	0.56***	(0.82)	1.01	0.58***
1 (3)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Woman's education									
Secondary+ (0)	(3.34*)	1.09	1.28**	0.96	2.10**	2.70***	(0.36)	1.06	1.78***
Primary (1)	(1.52)	1.13	1.24*	0.99	1.20	1.22	(0.45)	1.07	0.84
None (2)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Wealth (quintiles)									
Highest (1)	(0.95)	1.01	4.39***	1.57	1.38	8.08***	-	2.28*	14.27***
Fourth (2)	(0.40)	1.11	2.19***	1.25	1.81*	4.63***	(4.80)	1.77**	5.33***
Middle (3)	(0.43)	1.03	1.87***	1.11	1.93**	2.26**	(1.11)	1.80***	3.10***
Second (4)	(0.60)	1.04	1.30**	1.18	1.58*	1.65*	(0.55)	1.36***	1.64***
Lowest (5)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Antenatal care visits									
4+ (1)	(0.68)	2.27***	4.14***	1.14	5.67***	3.79***	(3.72**)	4.34***	7.09***
1-3 visits (2)	(0.73)	1.30	1.69***	1.30*	3.58***	1.66*	(1.58)	2.67***	2.61***
0 (3)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Read newspaper									
Yes (0)	(0.69)	1.45*	1.13	1.36*	1.17	1.28*	(0.76)	1.16*	1.65***
No (1)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Watch television									
Yes (0)	(1.94)	0.98	0.91	0.65**	1.25	1.73***	(0.76)	1.03	1.37***
No (1)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Health care decisionmaking									
Self (1)	(1.01)	1.14	1.16*	1.27*	0.79	0.92	(1.18)	1.56***	1.71***
Jointly (2)	(0.56)	1.11	1.16*	1.15	1.30	1.19	(1.43)	1.38***	1.45***
Others (3)	(1.00)	1.00	1.00	1.00	1.00	1.00	(1.00)	1.00	1.00
Number of cases	31	325	4,103	588	293	739	39	1,579	5,496

Note: Figures in parentheses are based on small numbers. A hyphen indicates there were no cases.

* p<0.05; ** p<0.01; *** p<0.001

NIB = Noninstitutional birth

6.3.1 Sociodemographic Characteristics

Residence

As expected, living in urban areas is associated with increased likelihood of receiving postpartum care. This is particularly true for women delivering at an institution, and RRRs are typically high for all the countries. The likelihood of receiving postpartum care from a health professional when delivering at home is less clear; this association is seen in only four of the nine countries. In Ethiopia, where delivery by a health professional is uncommon, urban residence is not associated with higher levels of receipt of postpartum care from a health professional among women delivering at home. A similar situation is seen in Indonesia and Nepal, although the interpretation here is that the broad coverage of delivery care by professionals in rural areas may account for this lack of distinction. Finally, in Egypt and Peru, which have large proportions of noninstitutional births that do not receive postpartum care, the phenomenon appears to reflect a lack of pattern in postpartum care.

Receiving postpartum care from a TBA/others goes in the opposite direction. In seven of the nine countries (except Cambodia and Haiti), living in rural areas is associated with receiving postpartum care from a TBA/others if delivering at home. In countries with large proportions of women delivering at home who receive no professional postpartum care, the findings point to a lack of formal health coverage for these women.

Woman's Employment

Women's employment is generally not associated with receipt of postpartum care in these countries. Only in Peru is being employed related to an increased likelihood of receiving postpartum care from a health professional if the woman delivered at home. In Egypt, an employed woman is more likely to have delivered at an institution than not have received postpartum care. Curiously, in Nepal, women's employment is negatively associated with the probability of receiving any type of postpartum care. One interpretation of this is that women who work mostly in the agricultural sector represent a poorer segment of the population and therefore are less likely to receive postpartum care.

Birth Order

In all countries, birth order (starting at the second or higher birth order) is negatively associated (strongly and consistently) with women delivering at a health facility. In Egypt, Peru, and Rwanda, having five or more births is associated with receiving less postpartum care from a TBA/others, compared with having fewer births. Women having their first birth (parity 1) may be more concerned and less confident about the pregnancy outcome, and thus more likely to seek professional assistance at delivery than their more experienced multiparous counterparts.

Woman's Education

Education is strongly and positively associated with postpartum care, particularly for women with secondary or higher levels of education. However, most of this effect is seen only for institutional births. In Burkina Faso, Ethiopia, Peru and Rwanda, education is not associated with any postpartum care among women delivering at home. In Indonesia and Nepal, having secondary or more education is negatively associated with receiving postpartum care by a TBA/others.

Household Wealth Status

Household wealth status is strongly and positively associated with postpartum care in all nine countries. However, the effect is more definite for institutional births than for noninstitutional births. In Rwanda, only the highest wealth quintile is associated with increased likelihood of postpartum care for institutional births, and no pattern is seen for noninstitutional births. In Ethiopia, only at the highest wealth quintile is a positive association found with professional postpartum care for noninstitutional births. There is no effect of wealth on postpartum care by TBA/others in Cambodia, Egypt, Haiti, Indonesia, and Peru. Only in Burkina Faso are the two highest wealth quintiles associated with increased postpartum care by TBA/others among noninstitutional births.

6.3.2 Health and Media Exposure

Number of Antenatal Care Visits

In every country, the probability of having an institutional birth and/or receiving postpartum care increases significantly and consistently with receipt of any antenatal care, and with increased number of antenatal care visits. When four or more visits are compared with no visits, the ratio is 51 in Burkina Faso and 14 in Indonesia for having an institutional birth versus no postpartum care. Only in Ethiopia is the number of antenatal care visits for noninstitutional births not associated with a significant increase in postpartum care by TBA/others. (In Egypt, although numbers are small, the trend shows a negative association).

Reading Newspapers and Watching Television

Reading newspapers and watching television have small, positive associations with receiving some form of postpartum care, although there are no definite patterns. For example, reading newspapers has no bearing on any form of postpartum care in Ethiopia (probably reflecting the scarcity of this media format), while in Indonesia it is positively associated with receiving postpartum care from professionals, both for institutional and noninstitutional deliveries.

Watching television is positively associated with all forms of postpartum care in Burkina Faso, but only with institutional deliveries in most other countries. In Egypt, watching television is not associated with any increase in postpartum care over receiving no postpartum care. This may be related to universal television access or to nonuse of television for health promotion.

6.3.3 Woman's Status—Health Care Decisionmaking Capacity

The final variable used in the multivariate models is women's participation in decisionmaking regarding matters of their own health. In the seven countries where data were available, the results are mixed. On the one hand, in countries such as Burkina Faso and Peru, women making decisions on their own or jointly with others is positively associated with increased postpartum care by professionals, either for institutional or noninstitutional deliveries. This occurs to a lesser extent in Egypt and Nepal. However, the effect is not seen in Haiti, Indonesia, and Rwanda. In fact, in Indonesia and Nepal, for noninstitutional births, women making decisions for themselves is associated with increased likelihood of not receiving postpartum care compared with receiving it from a TBA/others.

7 Summary and Discussion

7.1 Extent and Timing of Postpartum Care

The present study has identified attributes of postpartum care in a number of developing countries, based on data from DHS surveys 1999 to 2004. The general scarcity of postpartum care in these countries is a matter of major public health concern. In the 30 countries covered, four in ten women with a live birth in the five years preceding the survey did not receive postpartum care.

If timing of care is examined, on average, the first postpartum care for all births (in the 29 countries for which there is information) is received two days after delivery. When the analysis is restricted to noninstitutional births, the situation is even less favorable. Only 13 percent of these women received postpartum care in the 24 hours after delivery, and the average was three days postpartum. These women are clearly in a life-threatening situation should they suffer complications such as postpartum hemorrhage, the number one maternal killer. This is because the window of opportunity between the onset of hemorrhage and death is extremely short (two hours) (Starrs, 1998).

7.2 Place and Providers of Postpartum Care for Noninstitutional Births

The majority of women in Cambodia, Indonesia, and Nepal receive their first postpartum care at home, an indication of effective community outreach and/or the accessibility of postpartum care services in South/Southeast Asia. Additionally, in Cambodia and Nepal, seven in ten providers of postpartum care for noninstitutional births are TBAs. Interestingly, this is not the case with Indonesia, where the majority of postpartum care, even at the community level, is provided by trained health personnel. In a few African countries and in Haiti, around one-fourth to one-third of postpartum care is provided at home, often by TBAs. In Haiti, nearly 40 percent of postpartum care for home deliveries is provided by TBAs, and an additional one-fourth is provided by other people, mostly unskilled workers, relatives, or friends. These countries need to increase the delivery of professional postpartum care for noninstitutional births, either through facility or community-based approaches.

7.3 Characteristics Associated with Receiving Postpartum Care

For this analysis, postpartum care was divided into three categories. Women who delivered at a health facility were assumed to have received postpartum care from a health professional. Women who delivered at home (noninstitutional birth) were subdivided into groups depending on whether they received postpartum care from a health professional or from a TBA/other person. The three categories were used to analyze the correlation of selected background characteristics of women with receipt of postpartum care (according to the conceptual framework).

Most characteristics were correlated with having received postpartum care, particularly area of residence (urban-rural), birth order, level of education, household wealth quintile, number of antenatal care visits, reading newspapers, watching television, and participation in health care decisionmaking. Age at birth, sex of head of household, and listening to the radio did not produce consistent or definite patterns, and they were excluded from further analysis.

To show which of the explanatory variables were most influential on whether postpartum care was received and what type of care was received, a multivariate analysis was carried out on nine countries from different regions. The following are the results of this analysis:

First, a few explanatory variables emerged as being most powerful in their association with postpartum care. Women who lived in households in the higher wealth quintiles and who received antenatal care for their last pregnancy were consistently more likely to have received postpartum care,

particularly from a health professional. Education (especially beyond the primary level), first births, urban residence, and exposure to mass media (newspaper and television) were also significantly associated with having an institutional delivery and/or receiving postpartum care. Two further variables—whether the woman was employed and whether she participates in her own health care decisions—were weakly or inconsistently related to postpartum care, after interacting with the other variables.

Second, differentiation of the type of postpartum care produced an interesting phenomenon. Women who received postpartum care from a TBA/others often had different characteristics from women who received postpartum care from a health professional. For instance, if they lived in rural areas, they were more likely to receive postpartum care from a TBA/others. However, increased education and wealth did not affect whether women received postpartum care from a TBA/others in Cambodia and Haiti; and in Indonesia and Nepal, increased education was associated with receiving less postpartum care from a TBA/others.

A few countries included in the further analysis should be mentioned. In Egypt, media exposure hardly had any influence with respect to postpartum care. This lack of differentials may be because of wide exposure to media in Egypt or because mass media is not used to promote access to services.

In Nepal, women's employment—which is mostly in the agricultural sector—may be an indicator of poverty rather than relative affluence, which could account for the negative association with postpartum care. It is also interesting to note that in Indonesia and Nepal, living in rural areas is not necessarily detrimental to receiving professional postpartum care for noninstitutional births, and may reflect an active outreach program of health services in these countries.

7.4 Limitations of Study

There are a number of limitations to this study. First, postpartum care is seen through women's recollection of events, which can be affected by perception and time. Because DHS does not ask for the content and elements of postpartum care, it may be that some women incorrectly viewed any contact with an attendant after birth as postpartum care. This would overestimate the real occurrence of postpartum care. On the other hand, the longer the event occurred in the past, the less likely the woman is to remember whether or not postpartum care took place.

The recall limitation extends to the timing of postpartum care. Women may not remember the precise time when the first checkup occurred after delivery, with the result that there may be problems of heaping (i.e., concentration of responses at rounded times, such as one day or one week).

Another limitation is the assumption that all women who delivered at a health institution received postpartum care. This may not necessarily be true, especially at lower levels of care (e.g., women delivering at health centers or small posts), where this capacity may be nonexistent and women may or may not have been referred to higher levels of care.

For calculating the timing of postpartum care, it is assumed that all postpartum care at institutions takes place an average of 12 hours after delivery. (For this calculation all noninstitutional births coded as 0—less than one day postpartum—were recoded as receiving postpartum care 12 hours postpartum, on average.) We do not know if these assumptions will overestimate or underestimate the average timing of first postpartum care; however, it is possible that both assumptions combined will overestimate the level of postpartum care received by women. Thus, the percentages obtained for all countries should be viewed as best-case scenarios for postpartum care.

We were not able to place any value on the quality of postpartum care (because the data do not permit it), either for institutional or noninstitutional births. The assumption was made that any reported postpartum care provided the intended benefits.

7.5 Conclusions

Skilled postpartum care should be offered following all births—institutional and noninstitutional. Because the most serious mortality risks occur soon after birth, deliveries should be attended by a skilled person. If this is not possible, the skilled attendant should be present within the first few hours after delivery. This will allow the provider to identify whether the woman has any symptoms or signs of a life-threatening complication, such as retention of placenta or products, excessive bleeding, high blood pressure, nausea/dizziness, foul vaginal discharge, etc.

A first checkup six hours after delivery—promoted by the World Health Organization—might be too late for women who develop postpartum hemorrhage immediately after delivery. This poses a particular challenge for countries with a high proportion of noninstitutional births, or home deliveries. In Indonesia, however, nearly 40 percent of all noninstitutional births receive postpartum care within the first 24 hours after delivery, a laudable effort worth promoting in countries with high proportions of noninstitutional births. This information is captured in the Maternal and Neonatal Program Effort Index, a rating by experts on 81 items assessing status of services and policies for 49 developing countries. Indonesia received a score of 44 for postpartum checkup within 48 hours, three points higher than the average (POLICY Project, 2005).

Such effort and commitment—either by training and providing skilled staff to reach out to all delivering women, or by ensuring that all women delivering at home have access to a nearby facility or skilled provider immediately after birth—likely contributes to important reductions in maternal and neonatal mortality and morbidity. In addition, because there is a period of fatigue following delivery that prevents women from making journeys in the immediate postpartum period, it is the skilled attendant who should be present at the time of delivery or shortly thereafter. This attendant can perform crucial life-saving procedures such as removal of placenta or retained products, administer parenteral oxytocics, magnesium sulphate, antibiotics, or plasma expanders as needed; or stabilize and refer the woman in acceptable conditions, if so required.

As with other health indicators, the occurrence of postpartum care is highly and consistently related to improved education and economic capacity. Countries should increase investment in girls' education, free or subsidized maternal care, and improved means of transportation to emergency obstetric centers. While such plans are implemented, special funds should be allocated to ensure universal access to focused, pragmatic antenatal care, where every woman is instructed on pregnancy-related complications and a birth-readiness plan (that includes transportation and funds for medical care) is developed in conjunction with the provider and the community. Moreover, there is a need to develop a pregnancy tracking system whereby all pregnant women are assured of skilled attendance at their delivery or within a few hours, either through an outreach mechanism or through institutional delivery, regardless of whether they are likely to develop any complications.

Other measures to promote postpartum care include repeated health education campaigns and training of community volunteers to make members of the community aware of the potential dangers associated with each pregnancy and the need to follow one of the two steps described above, as well as ensuring respect of cultural values (e.g., providing for the presence of relatives or TBAs, accepting the inclusion of harmless traditional practices). The Ministry of Health in each country needs to take a leadership role in training and deploying health professionals (or skilled birth attendants) within reach of all populations, and creating a new performance expectation: every woman will give birth with the presence of a skilled attendant and receive immediate postpartum care (i.e., within 2 hours). Further research is needed to determine the critical components of postpartum care and how long providers should remain with the woman to ensure her safety. Finally, countries need to upgrade their health facilities to ensure that the six UN Process Indicators¹⁶ are met nationally and that facilities are able to perform the six to eight Signal Functions, depending on their type (Paxton et al., 2003).¹⁷

¹⁶ The UN Process Indicators are intermediate-level indicators measuring the readiness of facilities to provide emergency obstetric care. Indicators are rates of available emergency obstetric services and their distribution, proportion of births and obstetric complications attended, the rate of caesarean sections, and fatalities in facilities offering these services.

¹⁷ Signal Functions are activities that facilities should be able to perform to qualify as able to provide basic or comprehensive emergency obstetric care. For basic emergency obstetric care, six functions should be performed: administer parenteral antibiotics, oxytocics, and anticonvulsants; perform manual removal of placenta and retained products; and perform assisted vaginal delivery (e.g., with vacuum extraction). For comprehensive emergency obstetric care, two extra functions are added: capacity to perform surgery (e.g., caesarean section) and blood transfusion.

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Appendix A

Table A.1 Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey) by provider of postpartum care and birth order, DHS surveys 1999-2004

Region and country	Provider	Birth order (noninstitutional births)			Total
		1	2-4	5+	
Sub-Saharan Africa					
Benin 2001	Health professional	(3.0)	5.6	6.8	
	TBA/others	(97.0)	94.4	93.2	
	Total	(3.7)	6.3	8.1	6.4
	Number	26	96	103	225
Burkina Faso 2003	Health professional	8.4	9.4	10.6	
	TBA/others	91.6	90.6	89.4	
	Total	13.2	14.1	17.9	15.4
	Number	175	452	518	1,145
Cameroon 2004	Health professional	4.8	6.4	7.3	
	TBA/others	95.2	93.6	92.7	
	Total	9.3	13.6	15.9	13.4
	Number	113	319	275	707
Eritrea 2002	Health professional	(5.9)	6.5	6.9	
	TBA/others	(94.1)	93.5	93.1	
	Total	(6.3)	7.1	7.7	7.2
	Number	48	137	113	298
Ethiopia 2000	Health professional	3.8	3.1	3.7	
	TBA/others	96.2	96.9	96.3	
	Total	4.8	4.7	5.5	5.1
	Number	66	154	183	403
Ghana 2003	Health professional	5.5	9.0	8.8	
	TBA/others	94.5	91.0	91.2	
	Total	20.7	25.5	27.5	25.1
	Number	116	319	224	659
Kenya 2003	Health professional	4.1	6.1	8.4	
	TBA/others	95.9	93.9	91.6	
	Total	7.9	10.6	15.1	11.3
	Number	74	201	181	456
Madagascar 2003	Health professional	13.0	12.3	8.8	
	TBA/others	87.0	87.7	91.2	
	Total	26.8	29.6	30.8	29.3
	Number	249	568	398	1,215
Malawi 2000	Health professional	(1.8)	1.6	1.9	
	TBA/others	(98.2)	98.4	98.1	
	Total	(2.5)	2.9	4.1	3.2
	Number	42	109	107	258
Mali 2001	Health professional	2.5	3.0	3.2	
	TBA/others	97.5	97.0	96.8	
	Total	9.9	11.4	12.9	11.8
	Number	130	368	477	975
Mozambique 2003	Health professional	16.0	20.5	22.1	
	TBA/others	84.0	79.5	77.9	
	Total	16.2	21.0	22.5	20.5
	Number	235	688	543	1,466
Namibia 2000	Health professional	5.9	6.7	8.1	
	TBA/others	94.1	93.3	91.9	
	Total	6.1	7.7	10.6	7.8
	Number	53	115	66	234
Nigeria 2003	Health professional	8.1	7.1	8.7	
	TBA/others	91.9	92.9	91.3	
	Total	17.1	19.3	19.9	19.1
	Number	136	305	302	743

Continued...

Table A.1—Continued

Region and country	Provider	Birth order (noninstitutional births)			
		1	2-4	5+	Total
Rwanda 2000	Health professional	(0.8)	1.1	(0.5)	
	TBA/others	(99.2)	98.9	(99.5)	
	Total	(3.7)	3.7	(2.5)	3.2
	Number	33	85	48	166
Uganda 2000	Health professional	1.4	2.7	2.9	
	TBA/others	98.6	97.3	97.1	
	Total	3.8	4.7	5.2	4.8
	Number	27	93	92	212
Zambia 2001	Health professional	6.1	7.1	7.1	
	TBA/others	93.9	92.9	92.9	
	Total	11.5	12.5	13.1	12.5
	Number	109	250	191	550
Zimbabwe 1999	Health professional	6.3	12.8	14.1	
	TBA/others	93.7	87.2	85.9	
	Total	6.6	13.2	15.1	11.5
	Number	58	175	84	317
North Africa/West Asia/Europe					
Armenia 2000	Health professional	u	(5.1)	u	
	TBA/others	u	(94.9)	u	
	Total	u	(5.5)	u	5.1
	Number	11	45	8	64
Egypt 2000	Health professional	3.0	4.2	5.1	
	TBA/others	97.0	95.8	94.9	
	Total	3.7	4.6	5.5	4.6
	Number	63	202	100	365
Jordan 2002	Health professional	u	u	u	u
	TBA/others	u	u	u	u
	Total	u	u	u	u
	Number	1	24	11	36
Central Asia					
Turkmenistan 2000	Health professional	u	(3.0)	(8.8)	
	TBA/others	u	(97.0)	(91.2)	
	Total	u	(3.2)	(8.8)	3.5
	Number	8	49	28	85
South/Southeast Asia					
Bangladesh 2004	Health professional	9.9	8.0	4.8	
	TBA/others	90.1	92.0	95.2	
	Total	19.7	16.1	14.9	16.9
	Number	291	482	137	910
Cambodia 2000	Health professional	13.5	14.8	11.2	
	TBA/others	86.5	85.2	88.8	
	Total	40.3	43.4	45.7	43.6
	Number	389	1,218	870	2,477
Indonesia 2002-2003	Health professional	28.9	30.3	27.8	
	TBA/others	71.1	69.7	72.2	
	Total	45.8	49.8	56.7	49.3
	Number	1,959	3,448	868	6,275
Nepal 2001	Health professional	6.6	5.6	3.4	
	TBA/others	93.4	94.4	96.6	
	Total	18.5	18.8	18.9	18.8
	Number	183	479	228	890

Continued...

Table A.1—Continued

Region and country	Provider	Birth order (noninstitutional births)			
		1	2-4	5+	Total
Latin America/Caribbean					
Colombia 2000	Health professional	u	(2.1)	u	
	TBA/others	u	(97.9)	u	
	Total	u	(2.1)	u	2.1
	Number	15	41	19	75
Dominican Republic 2002	Health professional	u	(0.7)	u	
	TBA/others	u	(99.3)	u	
	Total	u	(0.7)	u	0.9
	Number	13	33	21	67
Haiti 2000	Health professional	6.3	8.3	5.8	
	TBA/others	93.7	91.7	94.2	
	Total	17.9	19.4	19.5	19.1
	Number	171	349	290	810
Nicaragua 2001	Health professional	5.4	8.9	12.7	
	TBA/others	94.6	91.1	87.3	
	Total	5.4	8.9	12.7	8.7
	Number	79	203	137	419
Peru 2000	Health professional	9.1	13.7	19.2	
	TBA/others	90.9	86.3	80.8	
	Total	9.5	14.1	19.7	13.9
	Number	270	665	394	1,329

Note: Figures in parentheses are based on 25-49 unweighted cases.
u = Unknown (information not available)

Table A.2 Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and residence, DHS surveys 1999-2004

Region and country	Provider	Residence (noninstitutional births)		
		Urban	Rural	Total
Sub-Saharan Africa				
Benin 2001	Health professional	4.4	6.1	
	TBA/others	0.5	1.1	
	Total	4.9	7.2	6.4
	Number	57	168	225
Burkina Faso 2003	Health professional	4.8	10.6	
	TBA/others	0.4	6.5	
	Total	5.2	17.1	15.4
	Number	55	1,090	1,145
Cameroon 2004	Health professional	5.9	6.6	
	TBA/others	1.6	11.8	
	Total	7.5	18.4	13.4
	Number	184	523	707
Eritrea 2002	Health professional	4	7.9	
	TBA/others	0.5	0.7	
	Total	4.5	8.6	7.2
	Number	65	233	298
Ethiopia 2000	Health professional	8.7	2.8	
	TBA/others	1.2	1.6	
	Total	9.9	4.4	5.1
	Number	89	314	403
Ghana 2003	Health professional	7.1	8.9	
	TBA/others	6.1	22.8	
	Total	13.2	31.7	25.1
	Number	124	535	659
Kenya 2003	Health professional	(3.8)	6.9	
	TBA/others	(2)	5.8	
	Total	(5.8)	12.7	11.3
	Number	48	407	455
Madagascar 2003	Health professional	19	9.6	
	TBA/others	11.6	19.4	
	Total	30.6	29	29.3
	Number	249	966	1,215
Malawi 2000	Health professional	u	1.9	
	TBA/others	u	1.7	
	Total	u	3.6	3.2
	Number	9	248	257
Mali 2001	Health professional	5	2.5	
	TBA/others	3.3	10.5	
	Total	8.3	13	11.8
	Number	167	808	975
Mozambique 2003	Health professional	9.9	24.8	
	TBA/others	0.2	0.5	
	Total	10.1	25.3	20.5
	Number	226	1,240	1,466
Namibia 2000	Health professional	(2.7)	9.2	
	TBA/others	(0.8)	1.2	
	Total	(3.5)	10.4	7.8
	Number	38	195	233
Nigeria 2003	Health professional	9.7	7.2	
	TBA/others	7.6	12.7	
	Total	17.3	19.9	19.1
	Number	198	547	745

Continued...

Table A.2—Continued

Region and country	Provider	Residence (noninstitutional births)		
		Urban	Rural	Total
Rwanda 2000	Health professional	u	0.7	
	TBA/others	u	2.6	
	Total	u	3.3	3.2
	Number	22	144	166
Uganda 2000	Health professional	u	2.7	
	TBA/others	u	2.3	
	Total	u	5	4.8
	Number	19	193	212
Zambia 2001	Health professional	7.9	6.3	
	TBA/others	2.1	7.5	
	Total	10.0	13.8	12.5
	Number	149	401	550
Zimbabwe 1999	Health professional	(5.3)	14.1	
	TBA/others	(0.0)	0.7	
	Total	(5.3)	14.8	11.5
	Number	50	267	317
North Africa/West Asia/Europe				
Armenia 2000	Health professional	u	9.6	
	TBA/others	u	0.5	
	Total	u	10.1	5.1
	Number	5	59	64
Egypt 2000	Health professional	2.4	5.3	
	TBA/others	0.1	0.7	
	Total	2.5	6	4.6
	Number	81	285	366
Jordan 2002	Health professional	u	u	
	TBA/others	u	u	
	Total	u	u	0.9
	Number	29	6	35
Central Asia				
Turkmenistan 2000	Health professional	u	4.7	
	TBA/others	u	0.1	
	Total	u	4.8	3.5
	Number	17	68	85
South/Southeast Asia				
Bangladesh 2004	Health professional	10.2	7.4	
	TBA/others	5.2	9.9	
	Total	15.4	17.3	16.9
	Number	171	738	909
Cambodia 2000	Health professional	17.2	12.6	
	TBA/others	17.9	32.4	
	Total	35.1	45	43.6
	Number	273	2,204	2,477
Indonesia 2002-2003	Health professional	22.0	36.0	
	TBA/others	11.3	27.3	
	Total	33.3	63.3	49.3
	Number	1,986	4,288	6,274
Nepal 2001	Health professional	(9.3)	5.0	
	TBA/others	(1.1)	14.4	
	Total	(10.4)	19.4	18.8
	Number	34	856	890

Continued...

Table A.2—Continued

Region and country	Provider	Residence (noninstitutional births)		
		Urban	Rural	Total
Latin America/Caribbean				
Colombia 2000	Health professional	(1.2)	(4.5)	
	TBA/others	(0.0)	(0.0)	
	Total	(1.2)	(4.5)	2.1
	Number	29	46	75
Dominican Republic 2002	Health professional	(0.6)	(1.2)	
	TBA/others	(0.0)	(0.2)	
	Total	(0.6)	(1.4)	0.9
	Number	32	37	69
Haiti 2000	Health professional	7.9	6.4	
	TBA/others	8.3	14.3	
	Total	16.2	20.7	19.1
	Number	242	568	810
Nicaragua 2001	Health professional	4.9	13.1	
	TBA/others	0.0	0.0	
	Total	4.9	13.1	8.7
	Number	129	291	420
Peru 2000	Health professional	8.0	21.2	
	TBA/others	0.2	0.8	
	Total	8.2	22.0	13.9
	Number			

Note: Figures in parentheses are based on 25-49 unweighted cases.
u = Unknown (information not available)

Table A.3 Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and women's level of education, DHS surveys 1999-2004

Region and country	Provider	Woman's level of education (noninstitutional births)			Total
		No education	Primary	Secondary or higher	
Sub-Saharan Africa					
Benin 2001	Health professional	6.3	(4.4)	u	
	TBA/others	1.1	(9.4)	u	
	Total	7.4	(5.0)	u	6.4
	Number	188	34	3	225
Burkina Faso 2003	Health professional	10.4	(6.2)	u	
	TBA/others	6.0	(17.2)	u	
	Total	16.4	(11.0)	u	15.4
	Number	1,062	70	13	1,145
Cameroon 2004	Health professional	8.1	6.9	3.9	
	TBA/others	16.5	5.4	0.6	
	Total	24.6	12.3	4.5	13.4
	Number	365	270	72	707
Eritrea 2002	Health professional	7.2	6.6	u	
	TBA/others	0.9	0.4	u	
	Total	8.1	7.0	u	7.2
	Number	209	74	15	
Ethiopia 2000	Health professional	2.9	5.0	(8.5)	
	TBA/others	1.5	2.6	(17.7)	
	Total	4.4	7.6	(9.2)	5.1
	Number	288	76	39	403
Ghana 2003	Health professional	11.0	7.2	6.1	
	TBA/others	17.8	22.8	12.4	
	Total	28.8	30	18.5	25.1
	Number	294	176	190	660
Kenya 2003	Health professional	7.5	6.6	5.1	
	TBA/others	3.9	5.8	3.3	
	Total	11.4	12.4	8.4	11.3
	Number	66	312	78	456
Madagascar 2003	Health professional	4.1	10.2	21.7	
	TBA/others	22.0	20.3	8.6	
	Total	26.1	30.5	30.3	29.3
	Number	280	641	294	1,215
Malawi 2000	Health professional	1.4	2.0	u	
	TBA/others	1.1	1.8	u	
	Total	2.5	3.8	u	3.2
	Number	63	190	4	257
Mali 2001	Health professional	2.8	4.6	u	
	TBA/others	9.6	6.3	u	
	Total	12.4	10.9	u	11.8
	Number	856	99	19	974
Mozambique 2003	Health professional	24.3	17.9	u	
	TBA/others	0.5	0.5	u	
	Total	24.8	18.4	u	20.5
	Number	780	672	14	1,466
Namibia 2000	Health professional	(10.2)	9.0	4.3	
	TBA/others	(1.7)	1.3	0.8	
	Total	(11.9)	10.3	5.1	7.8
	Number	44	110	80	234
Nigeria 2003	Health professional	8.1	8.3	7.3	
	TBA/others	14.5	11.0	4.8	
	Total	22.6	19.3	12.1	19.1
	Number	447	176	122	745

Continued...

Table A.3—Continued

Region and country	Provider	Woman's level of education (noninstitutional births)			Total
		No education	Primary	Secondary or higher	
Rwanda 2000	Health professional	(0.5)	1.0	u	
	TBA/others	(2.1)	2.9	u	
	Total	(2.6)	3.9	u	3.2
	Number	47	111	9	167
Uganda 2000	Health professional	2.8	2.5	u	
	TBA/others	2.3	2.3	u	
	Total	5.1	4.8	u	4.8
	Number	55	134	22	
Zambia 2001	Health professional	6.7	7.9	4.4	
	TBA/others	4.9	6.7	3.3	
	Total	11.6	14.6	7.7	12.5
	Number	71	397	82	550
Zimbabwe 1999	Health professional	(21.7)	13.4	7.5	
	TBA/others	(1.7)	0.9	0	
	Total	(23.4)	14.3	7.5	11.5
	Number	42	172	103	317
North Africa/West Asia/Europe					
Armenia 2000	Health professional	u	u	4.9	
	TBA/others	u	u	0.2	
	Total	u	u	5.1	5.1
	Number	0	0	64	64
Egypt 2000	Health professional	4.5	4.6	3.7	
	TBA/others	0.5	0.4	0.4	
	Total	5	5	4.1	4.6
	Number	155	63	147	365
Jordan 2002	Health professional	u	u	(1.0)	
	TBA/others	u	u	(0.0)	
	Total	u	u	(1.0)	0.9
	Number	1	3	32	36
Central Asia					
Turkmenistan 2000	Health professional	u	u	3.3	
	TBA/others	u	u	0.1	
	Total	u	u	3.4	3.5
	Number	2	1	82	85
South/Southeast Asia					
Bangladesh 2004	Health professional	4.5	7.6	12.4	
	TBA/others	8.1	9.9	8.8	
	Total	12.6	17.5	21.2	16.9
	Number	252	285	373	910
Cambodia 2000	Health professional	8.5	13.5	24.1	
	TBA/others	36.1	31.1	13.9	
	Total	44.6	44.6	38	43.6
	Number	812	1,357	309	2,478
Indonesia 2002-2003	Health professional	22.7	32.0	27.7	
	TBA/others	45.0	29.4	7.3	
	Total	67.7	61.4	35.0	49.3
	Number	392	3,799	2,083	6,274
Nepal 2001	Health professional	4.1	6.1	10.7	
	TBA/others	16.7	7.4	2.8	
	Total	20.8	13.5	13.5	18.8
	Number	714	92	84	890

Continued...

Table A.3—Continued

Region and country	Provider	Woman's level of education (noninstitutional births)			Total
		No education	Primary	Secondary or higher	
Latin America/Caribbean					
Colombia 2000	Health professional	u	3.7	u	
	TBA/others	u	0.0	u	
	Total	u	3.7	u	2.1
	Number	9	50	16	75
Dominican Republic 2002	Health professional	u	(0.8)	(0.7)	
	TBA/others	u	(0.1)	(0.0)	
	Total	u	(0.9)	(0.7)	0.9
	Number	10	33	25	68
Haiti 2000	Health professional	6.3	5.7	11.6	
	TBA/others	13.2	13.7	6.1	
	Total	19.5	19.4	17.7	19.1
	Number	306	373	131	810
Nicaragua 2001	Health professional	13.9	10.8	3.5	
	TBA/others	0.1	0.0	0.0	
	Total	14.0	10.8	3.5	8.7
	Number	128	228	64	420
Peru 2000	Health professional	17.3	21.0	8.1	
	TBA/others	1.4	0.6	0.2	
	Total	18.7	21.6	8.3	13.9
	Number	129	756	444	1,329

Note: Figures in parentheses are based on 25-49 unweighted cases.
u = Unknown (information not available)

Table A.4 Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and wealth index quintile, DHS surveys 1999-2004

Region and country	Provider	Wealth index quintile (noninstitutional births)					Total
		Lowest	Second	Middle	Fourth	Highest	
Sub-Saharan Africa							
Benin 2001	Health professional	10.9	7.2	(4.9)	u	u	
	TBA/others	1.9	0.9	(0.9)	u	u	
	Total	12.8	8.1	(5.8)	u	u	6.4
	Number	99	60	42	20	5	226
Burkina Faso 2003	Health professional	9.5	9.5	12.5	10.4	4.9	
	TBA/others	6.0	6.0	6.4	7.2	2.2	
	Total	15.5	15.5	18.9	17.6	7.1	15.4
	Number	214	236	373	235	87	1,145
Cameroon 2004	Health professional	6.4	7.8	7.9	5.2	(3.8)	
	TBA/others	15.1	12.4	3.5	1.4	(0.3)	
	Total	21.5	20.2	11.4	6.6	(4.1)	13.4
	Number	270	209	124	67	37	707
Eritrea 2002	Health professional	8.1	7.6	7.4	7.3	u	
	TBA/others	0.8	0.6	1.1	0.4	u	
	Total	8.9	8.2	8.5	7.7	u	7.2
	Number	74	71	75	66	12	298
Ethiopia 2000	Health professional	2.4	1.9	2.0	4.2	7.9	
	TBA/others	1.2	1.9	1.3	2.1	1.2	
	Total	3.6	3.8	3.3	6.3	9.1	5.1
	Number	59	64	55	101	124	403
Ghana 2003	Health professional	9.8	11.1	8.0	5.6	(5.1)	
	TBA/others	20.8	23.4	23.6	10.1	(1.7)	
	Total	30.6	34.5	31.6	15.7	(6.8)	25.1
	Number	197	191	167	74	29	658
Kenya 2003	Health professional	6.7	7.4	6.4	7.4	3.8	
	TBA/others	9.1	4.5	5.5	2.7	2.8	
	Total	15.8	11.9	11.9	10.1	6.6	11.3
	Number	137	98	92	73	56	456
Madagascar 2003	Health professional	6.0	5.6	7.8	14.8	25.9	
	TBA/others	25.1	24.8	21.9	10.4	3.3	
	Total	31.1	30.4	29.7	25.2	29.2	29.3
	Number	344	227	253	176	216	1,216
Malawi 2000	Health professional	1.4	2.1	2.1	(1.8)	u	
	TBA/others	2.0	1.7	2.0	(1.2)	u	
	Total	3.4	3.8	4.1	(3.0)	u	3.2
	Number	58	59	73	44	23	257
Mali 2001	Health professional	0.9	2.2	3.0	4.7	4.4	
	TBA/others	13.0	10.2	9.4	8.6	2.0	
	Total	13.9	12.4	12.4	13.3	6.4	11.8
	Number	236	208	212	220	95	971
Mozambique 2003	Health professional	23.5	26.3	22.2	18.7	7.6	
	TBA/others	0.8	0.4	0.5	0.2	0.2	
	Total	24.3	26.7	22.7	18.9	7.8	20.5
	Number	442	360	333	232	99	1,466
Namibia 2000	Health professional	9.2	8.5	7.6	(5.9)	u	
	TBA/others	1.7	1.7	1.1	(1.0)	u	
	Total	10.9	10.2	8.7	(6.9)	u	7.8
	Number	61	57	54	45	16	233
Nigeria 2003	Health professional	4.4	7.3	10.1	10.2	8.1	
	TBA/others	95.6	92.7	89.9	89.8	91.9	
	Total	19.4	19.7	22.8	20.9	11.5	19.1
	Number	164	166	184	153	77	744

Continued...

Table A.4—Continued

Region and country	Provider	Wealth index quintile (noninstitutional births)					Total
		Lowest	Second	Middle	Fourth	Highest	
Rwanda 2000	Health professional	(0.8)	(0.8)	(0.3)	(0.9)	1.3	
	TBA/others	(99.2)	(99.2)	(99.7)	(99.1)	98.7	
	Total	(3.9)	(3.2)	(2.6)	(3.8)	2.5	3.2
	Number	27	39	26	48	25	165
Uganda 2000	Health professional	2.2	(1.9)	(2.3)	(3.8)	(3.0)	
	TBA/others	97.8	(98.1)	(97.7)	(96.2)	(97.0)	
	Total	5.4	(4.4)	(4.1)	(5.9)	(4.0)	4.8
	Number	53	41	37	49	32	212
Zambia 2001	Health professional	6.8	6.6	7.4	9.3	(3.9)	
	TBA/others	93.2	93.4	92.6	90.7	(96.1)	
	Total	12.6	15.9	15.1	12.0	(5.0)	12.5
	Number	99	165	144	105	37	550
Zimbabwe 1999	Health professional	18.0	15.8	10.6	7.6	u	
	TBA/others	82.0	84.2	89.4	92.4	u	
	Total	19.1	16.2	11.5	7.9	u	11.5
	Number	97	88	59	56	18	318
North Africa/West Asia/Europe							
Armenia 2000	Health professional	(11.4)	(8.4)	u	u	u	
	TBA/others	(88.6)	(91.6)	u	u	u	
	Total	(12.2)	(8.8)	u	u	u	5.1
	Number	33	24	3	4	1	65
Egypt 2000	Health professional	5.1	5.1	5.2	3.5	(2.0)	
	TBA/others	94.9	94.9	94.8	96.5	(98.0)	
	Total	6.1	5.7	5.5	3.7	(2.1)	4.6
	Number	95	86	89	64	32	366
Jordan 2002	Health professional	u	u	(1.1)	(0.4)	u	
	TBA/others	u	u	(98.9)	(99.6)	u	
	Total	u	u	1.1	0.4	u	0.9
	Number	1	3	32	29	6	71
Central Asia							
Turkmenistan	Health professional	u	u	u	u	u	
	TBA/others	u	u	u	u	u	
	Total	u	u	u	u	u	
	Number	u	u	u	u	u	85
South/Southeast Asia							
Bangladesh 2004	Health professional	3.4	5.8	7.6	10.6	14.7	
	TBA/others	96.6	94.2	92.4	89.4	85.3	
	Total	12.7	16.2	15.6	21.3	20.3	16.9
	Number	165	182	163	211	188	909
Cambodia 2000	Health professional	6.4	9.5	11.7	20.3	24.9	
	TBA/others	93.6	90.5	88.3	79.7	75.1	
	Total	42.4	45.8	44.1	49.1	34.6	43.6
	Number	607	577	503	512	279	2,478
Indonesia 2002-2003	Health professional	33.1	36.0	32.2	31.5	13.4	
	TBA/others	66.9	64.0	67.8	68.5	86.6	
	Total	68.6	63.2	52.3	40.9	16.8	49.3
	Number	1,946	1,566	1,351	1,020	392	6,275
Nepal 2001	Health professional	2.0	4.0	5.4	7.0	10.1	
	TBA/others	98.0	96.0	94.6	93.0	89.9	
	Total	12.0	19.3	29.6	19.0	14.9	18.8
	Number	142	195	272	175	106	890

Continued...

Table A.4—Continued

Region and country	Provider	Wealth index quintile (noninstitutional births)					Total
		Lowest	Second	Middle	Fourth	Highest	
Latin America/Caribbean							
Colombia 2000	Health professional	(5.6)	(3.1)	u	u	u	
	TBA/others	(94.4)	(96.9)	u	u	u	
	Total	(5.6)	(3.1)	u	u	u	2.1
	Number	42	25	7	1	1	76
Dominican Republic 2002	Health professional	u	u	u	u	u	
	TBA/others	u	u	u	u	u	
	Total	u	u	u	u	u	0.9
	Number	0	0	0	0	0	68
Haiti 2000	Health professional	3.7	6.5	10.0	8.8	5.7	
	TBA/others	96.3	93.5	90.0	91.2	94.3	
	Total	19.7	19.7	23.3	21.3	10.1	19.1
	Number	171	171	191	203	75	811
Nicaragua 2001	Health professional	14.3	12.0	7.2	(5.3)	u	
	TBA/others	85.7	88.0	92.8	(94.7)	u	
	Total	14.4	12.0	7.2	(5.3)	u	8.7
	Number	163	123	68	48	17	419
Peru 2000	Health professional	19.4	20.4	13.2	5.7	(2.0)	
	TBA/others	80.6	79.6	86.8	94.3	(98.0)	
	Total	20.4	20.8	13.4	6.0	(2.0)	13.9
	Number	477	457	267	101	27	

Note: Figures in parentheses are based on 25-49 unweighted cases.
u = Unknown (information not available)

Table A.5 Proportion of women who received postpartum care for their most recent noninstitutional birth (in the five years preceding the survey), by provider of postpartum care and antenatal care, DHS surveys 1999-2004

Region and country	Provider	Antenatal care (noninstitutional births)						Total
		No	Yes	No visits	1-3 visits	4+ visits	Don't know/missing	
Sub-Saharan Africa								
Benin 2001	Health professional	8.7	5.1	(9.8)	7.7	3.9	u	
	TBA/others	3.7	0.5	(2.8)	1.5	0.4	u	
	Total	12.4	5.6	(12.6)	9.2	4.3	u	6.4
	Number	53	172	41	86	94	4	225
Burkina Faso 2003	Health professional	4.3	11.7	4.1	11.7	11.8	u	
	TBA/others	6.8	5.3	6.8	5.4	4.8	u	
	Total	11.1	17	10.9	17.1	16.6	u	15.4
	Number	218	927	211	697	217	19	1,144
Cameroon 2004	Health professional	4.5	6.7	4.5	9.0	5.7	u	
	TBA/others	21.0	4.3	21.2	7.8	3.0	u	
	Total	25.5	11	25.7	16.8	8.7	u	13.4
	Number	221	486	219	199	278	10	706
Eritrea 2002	Health professional	4.8	7.2	4.8	8.4	6.1	u	
	TBA/others	0.8	0.6	0.8	0.6	0.5	u	
	Total	5.6	7.8	5.6	9	6.6	u	7.2
	Number	68	231	67	110	113	8	298
Ethiopia 2000	Health professional	2.1	7.4	2.0	6.4	9.0	u	
	TBA/others	1.4	1.9	1.4	1.7	1.9	u	
	Total	3.5	9.3	3.4	8.1	10.9	u	5.1
	Number	200	203	198	105	91	9	403
Ghana 2003	Health professional	3.7	(8.5)	(3.4)	7.3	8.3	(20.9)	
	TBA/others	14.3	(17.1)	(14.5)	29.0	14.0	(5.8)	
	Total	18	(25.6)	(17.9)	36.3	22.3	(26.7)	25.1
	Number	31	628	30	198	406	25	659
Kenya 2003	Health professional	5.4	(6.4)	(5.0)	7.1	5.9	u	
	TBA/others	4.2	(5.1)	(3.3)	5.9	4.3	u	
	Total	9.6	(11.5)	(8.3)	13	10.2	u	11.3
	Number	39	416	32	186	215	21	454
Madagascar 2003	Health professional	2.4	13.1	2.4	8.9	17.2	(15.2)	
	TBA/others	21.6	17.3	21.4	19.6	15.0	(17.9)	
	Total	24	30.4	23.8	28.5	32.2	(33.1)	29.3
	Number	164	1,051	162	482	531	40	1,215
Malawi 2000	Health professional	u	1.7	u	2.1	1.5	u	
	TBA/others	u	1.5	u	1.4	1.5	u	
	Total	u	3.2	u	3.5	3	u	3.2
	Number	12	245	11	107	137	2	257
Mali 2001	Health professional	1.9	3.8	1.9	3.7	4.1	(3.0)	
	TBA/others	11.4	6.9	11.5	10.2	4.6	(5.8)	
	Total	13.3	10.7	13.4	13.9	8.7	(8.8)	11.8
	Number	468	507	467	254	215	39	975
Mozambique 2003	Health professional	10.5	21.8	10.6	23.9	20.5	u	
	TBA/others	0.8	0.4	0.8	0.6	0.3	u	
	Total	11.3	22.2	11.4	24.5	20.8	u	20.5
	Number	121	1,345	119	540	791	17	1,467
Namibia 2000	Health professional	u	6.6	u	(8.1)	6.4	6.1	
	TBA/others	u	1.0	u	(2.0)	0.8	2.5	
	Total	u	7.6	u	(10.1)	7.2	8.6	7.8
	Number	22	211	15	48	149	22	234
Nigeria 2003	Health professional	4.9	9.8	4.9	9.8	10.1	u	
	TBA/others	14.6	9.1	14.5	11.2	9.3	u	
	Total	19.5	18.9	19.4	21	19.4	u	19.1
	Number	461	283	279	112	334	19	744

Continued...

Table A.5—Continued

Region and country	Provider	Antenatal care (noninstitutional births)						Total
		No	Yes	No visits	1-3 visits	4+ visits	Don't know/missing	
Rwanda 2000	Health professional	u	0.8	u	0.7	u	0.0	
	TBA/others	u	2.5	u	2.6	u	0.0	
	Total	u	3.3	u	3.3	u	0	3.2
	Number	8	158	8	137	21	0	166
Uganda 2000	Health professional	u	2.7	u	2.5	3.0	u	
	TBA/others	u	2.2	u	2.3	2.2	u	
	Total	2.2	4.9	u	4.8	5.2	u	4.8
	Number	6	206	6	106	98	2	212
Zambia 2001	Health professional	u	7.1	u	6.7	7.2	u	
	TBA/others	u	5.5	u	4.9	5.9	u	
	Total	u	12.6	u	11.6	13.1	u	12.5
	Number	24	526	21	111	412	5	549
Zimbabwe 1999	Health professional	u	11.4	u	12.4	11.5	u	
	TBA/others	u	0.4	u	1.1	0.5	u	
	Total	u	11.8	u	13.5	12	u	11.5
	Number	13	305	8	61	214	34	317
North Africa/West Asia/Europe								
Armenia 2000	Health professional	u	3.9	u	9.9	u	u	
	TBA/others	u		u		u	u	
	Total	u	4.1	u	10.2	u	u	5.1
	Number	17	47	17	31	14	2	64
Egypt 2000	Health professional	4.5	4.0	4.5	4.7	3.6	u	
	TBA/others	0.7	0.2	0.7	0.5	0.2	u	
	Total	5.2	4.2	5.2	5.2	3.8	u	4.6
	Number	181	184	181	53	112	19	365
Jordan 2002	Health professional	u	(0.9)	u	u	(0.9)	u	
	TBA/others	u	(0.0)	u	u	(0.0)	u	
	Total	u	(0.9)	u	u	(0.9)	u	0.9
	Number	1	35	0	5	30	0	35
Central Asia								
Turkmenistan 2000	Health professional	u	3.3	u	u	3.0	u	
	TBA/others	u	0.1	u	u	0.0	u	
	Total	u	3.4	u	u	3.0	u	3.5
	Number	3	82	3	12	59	11	85
South/Southeast Asia								
Bangladesh 2004	Health professional	3.9	12.4	3.6	9.4	16.8	0.0	
	TBA/others	9.7	8.0	8.5	10.3	6.6	0.0	
	Total	13.6	20.4	12.1	19.7	23.4	0	16.9
	Number	376	534	288	422	198	0	908
Cambodia 2000	Health professional	8.6	19.4	8.5	18.0	26.2	u	
	TBA/others	34.7	24.7	34.8	27.2	16.6	u	
	Total	43.3	44.1	43.3	45.2	42.8	u	43.6
	Number	1,362	1,116	1,360	885	215	17	2,477
Indonesia 2002-2003	Health professional	15.4	30.3	13.0	27.7	30.8	24.7	
	TBA/others	38.2	18.8	39.6	39.0	15.2	32.9	
	Total	53.6	49.1	52.6	66.7	46	57.6	49.3
	Number	342	5,933	294	1,178	4,733	69	6,274
Nepal 2001	Health professional	2.0	8.7	2.0	7.8	10.9	u	
	TBA/others	11.8	15.3	11.7	19.1	5.8	u	
	Total	13.8	24	13.7	26.9	16.7	u	18.8
	Number	334	556	332	441	113	4	890

Continued...

Table A.5—Continued

Region and country	Provider	Antenatal care (Noninstitutional births)						Total
		No	Yes	No visits	1-3 visits	4+ visits	Don't know/missing	
Latin America/Caribbean								
Colombia 2000	Health professional	u	2.0	u	u	1.8	u	
	TBA/others	u	0.0	u	u	0.0	u	
	Total	u	2.0	u	u	1.8	u	2.1
	Number	11	64	11	11	51	2	75
Dominican Republic 2002	Health professional	u	0.7	u	u	0.8	u	
	TBA/others	u	0.1	u	u	0.0	u	
	Total	u	0.8	u	u	0.8	u	0.9
	Number	4	64	2	8	55	3	68
Haiti 2000	Health professional	1.2	8.4	1.3	5.7	10.2	u	
	TBA/others	12.7	12.0	12.3	16.4	8.8	u	
	Total	13.9	20.4	13.6	22.1	19	u	19.1
	Number	114	696	109	334	355	11	809
Nicaragua 2001	Health professional	11.3	8.2	11.3	12.4	7.5	u	
	TBA/others	0.1	0.0	0.1	0.0	0.0	u	
	Total	11.4	8.2	11.4	12.4	7.5	u	8.7
	Number	76	344	76	82	259	4	421
Peru 2000	Health professional	12.9	13.7	11.4	19.3	12.6	u	
	TBA/others	0.5	0.4	0.5	0.5	0.4	u	
	Total	13.4	14.1	11.9	19.8	13	u	13.9
	Number	216	1,113	176	296	851	6	1,329

Note: Figures in parentheses are based on 25-49 unweighted cases.
u = Unknown (information not available)

Table A.6 Background indicators of selected countries

Indicator	Burkina Faso	Cambodia	Egypt	Ethiopia	Haiti	Indonesia	Nepal	Peru	Rwanda
GDP/capita ¹	\$1,200 (2005)	\$2,200 (2005)	\$4,400 (2005)	\$800 (2005)	\$1,600 (2005)	\$865 (2005)	\$1,500 (2005)	\$6,100 (2005)	\$1,300 (2005)
Percent population living below US\$2/day ²	81	78	44	78	u	73	81	38	84
Unemployment rate ¹	na	2.5 (2000)	10.9 (2004)	u	66.0 (2002)	11.8 (2005)	47.0 (2001)	9.6 (2004)	u
Percent rural ²	93	85	57	85	64	81	86	27	83
Population density (per sq mile) ²	132	191	191	182	774	65.0	446	56	858
Percent illiterate women ³	83.9 (2003)	32.4 (2000)	49.8 (2000)	87.5 (2000)	41.3 (2000)	13.0 (2003)	64.5 (2001)	7.4 (2004)	33.8 (2001)
Number of television broadcasting stations ¹	1	7	98	1	2	54	1	13	2
Total fertility rate (children/woman) ³	5.9 (2003)	4.0 (2000)	3.5 (2000)	5.9 (2000)	4.7 (2000)	2.6 (2004)	4.1 (2001)	2.8 (2000)	5.8 (2001)
Maternal mortality ratio (per 100,000 live births) ⁴	484 (1994-1998)	437 (1994-2000)	84 (1993-2000)	871 (1994-2000)	523 (1995-2000)	307 (1998-2003)	539 (1990-1996)	185 (1994-2000)	1,071 (1996-2000)
Infant mortality rate (per 1,000 births) ³	81.4 (2003)	95 (2000)	43.5 (2000)	112.9 (2000)	80.3 (2000)	35.0 (2003)	64.4 (2001)	33.3 (2000)	107.4 (2001)
Safe Motherhood Program ⁵	Maternal and Neonatal Health (MNH) Program to increase the use of skilled providers at birth	Home Birth Kits (HBK) distributed to the birth attendants	Safe Motherhood Committees (SMC) formulated at government levels	Ethiopia has various organizations like UNFPA supporting the Safe Motherhood Initiative	Global Health Action (GHA) work towards training community health workers and TBAs	MotherCare, DELIVERY, and Indonesia Health Services Program (HSP) funded by USAID	MNH Program	MNH Program	Mother-Baby Survival Project and prevention of mother-to-child transmission of HIV project

na = Not applicable

u = Unknown (information not available)

¹ The World Fact Book: <http://www.cia.gov/cia/publications/factbook/geos/uv.html>² 2005 World Population Data Sheet of the Population Reference Bureau: http://www.prb.org/pdf05/05WorldDataSheet_Eng.pdf³ Demographic and Health Surveys⁴ WHO et al., 2004⁵ Other web search