

## **A description of abortion care provided in Ethiopia, 2008 & 2014**

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## Introduction

The Millennium Development Goals, in particular MDG 5, to reduce the maternal mortality ratio by three-quarters has achieved great progress, the number of maternal deaths worldwide has dropped by 45% in the past 15 years (<http://www.who.int/mediacentre/factsheets/fs348/en/>). Yet, each year in the developing world, an estimated 5,000,000 women are still hospitalized with complications of an unsafe abortion. The World Health Organization estimates that one in eight pregnancy-related deaths is a result of an unsafe abortion, making this one of the top five causes of preventable maternal mortality.

Despite enormous improvements in contraceptive use over the past two decades, one in four married Ethiopian women have an unmet need for contraception resulting in more than one in three births being unintended or mistimed<sup>1-5</sup>. In a previous national study on abortion conducted in 2008, we estimated that many of these unintended pregnancies result in abortions and contribute to an abortion ratio of 13 abortions per 100 live births<sup>6</sup>. Of the 382,000 induced abortion procedures performed in that year, as many as 73% were likely performed outside of health facilities in situations deemed to be unsanitary, unsafe methods or performed by people lacking the skills or knowledge to ensure these procedures were performed without complications<sup>6</sup>. In spite of an abortion law revised in 2005 and liberally interpreted in Ethiopia, abortion-related complications were high in 2008, and estimated to impact more than 58,000 women who sought treatment in a health facility, and tens of thousands more who did not seek care, in that year alone<sup>7</sup>.

Since reform of the Ethiopian abortion law took effect in 2006, abortion can be performed legally in cases of rape or incest, if the woman has physical or mental disabilities, if it is needed to preserve the woman's life or her physical health, or if she is a minor who is physically or mentally unprepared for childbirth<sup>8</sup>. Yet research increasingly indicates that changing generations of behaviors resulting in unsafe abortions and piercing centuries of stigma and silence may not happen quickly<sup>9-11</sup>.

Descriptive results presented here compare 2008 and 2014 national results to assess the degree to which the introduction of legal abortion services have impacted and changed the national landscape for abortion care and unsafe abortion-related morbidity and mortality in the intervening six years<sup>7</sup>. This research will help to determine whether more abortions are being performed safely and in health facilities; abortion morbidity is decreasing; and, abortion case-fatality rates are decreasing since 2008.

The goal of this research was to provide a comprehensive description of abortion care and complications from unsafe abortion in Ethiopia relative to the similar study for which data were previously gathered. This research has implications in Ethiopia and beyond, being one of the few studies to explore the incidence unsafe abortion morbidity over time, and one of even fewer national-level studies to assess the impact of the reform of abortion policy and practice over time in a low-resource setting.

## Methodology

The cross-sectional descriptive study employed in Ethiopia draws on a methodology, now called the Prospective Morbidity Methodology (PMM)<sup>12</sup>, developed by the WHO<sup>13</sup> and then tested and adapted in South Africa<sup>14-16</sup> to collect prospective, descriptive data on abortions, abortion clinical management and abortion-related morbidity. The results described are a component of a larger project to assess the incidence, severity and consequences of safe and unsafe abortion in Ethiopia. Only the methods and procedures relevant to the examination of facility-based legal abortion procedures or the care for

women with abortion complications, either from an unsafe abortion or a complicated miscarriage, are described.

The 2014 study findings are compared to the 2008 baseline measures in order to assess the impact of maternal health interventions, including changes in contraceptive use, on abortion-related morbidity and mortality during the 5-year period.

#### *Identifying and selecting the facility sample*

The sampling frame was constructed from compiled government lists to include representation from public, private and non-governmental (NGO) sector providers of abortion care without prior knowledge of their range of services. Although the government has been the primary provider of health care until recently, Government development partners and private sector providers have been increasing rapidly, particularly in abortion care<sup>1,17</sup>. In both study years, eligible facilities were those that were allowed to provide treatment for abortion complications or postabortion care (PAC) or induced abortion services, according to the Technical and Procedural Guidelines for Abortion Care published by the Ministry of Health<sup>8</sup>. Health posts and health stations, medium and lower-level private clinics were excluded by design because they were expected to provide limited or no abortion services. A complete description of the methodology and analytic procedures for the 2008 study is published in Gebreselassie et al. 2010<sup>7</sup>.

In 2014, stratified multi-stage sampling was used to randomly select a pre-determined proportion of each of five types of health facilities – public hospitals, public health centers, private hospitals, and private higher clinics – from the nine regions and two city administrations in the country, as described in **Table 1**. Ethiopian higher private clinics offer daily medical outpatient services, sexually transmitted infection (STI) treatment, HIV counseling and testing and inpatient services, they are allowed to provide abortion if they have a properly trained medical practitioner. Facilities were systematically selected to ensure adequate representation for each type of facility and region in the country and to allow comparison with the 2008 sample and results.

In 2008 there was no attempt to exclude non-providing facilities that met the larger inclusion criteria; data for that year include 36 sites that returned no data over a one-month period. Due to the increased size of the health facility universe in 2014, another stage was added and efforts were made to identify facilities that did not provide abortion care and exclude them from participation in the one month data collection process. In 2014, 520 health facilities (80%) responded and were considered for inclusion in the study; 155 (24% of all selected facilities) health facilities reported providing no abortion services, 365 (56% of all selected facilities) were included in the study, although five of these sites submitted no records from the data collection period, and the remaining 135 facilities (20%) could not be located, were deemed too dangerous to access, refused or did not respond to numerous attempts to contact them.

All sites allowed to provide abortion care were initially included, however, some sites were eliminated or added prior to data collection because they were found to be duplicates, new facilities, closed facilities, without human resources to provide care or sites that only provided specialized non-abortion-related care. In addition to removing these sites, considered sampling frame errors, from the drawn sample, an equivalent proportion of sampling frame errors was assumed to have existed in non-selected sites and used in the calculation of the region and facility type-specific weighting for analysis.

**Table 1** provides details, by stratum, on the national number of facilities sampled, the sampling fraction, inclusion of a sampled facility by type, and the response rate in both study waves. The final national sampling frame of NGO, private and public health facilities included 898 facilities in 2008 and, due to a substantial expansion in the health sector in the previous five years, 3,186 facilities in 2014. Based on an overall sampling fraction of 44% in 2008 and 21% in 2014, 393 facilities were selected in 2008 and 655 in 2014. Ultimately, 344 facilities participated in 2008 and 365 in 2014 for 88% and 80% response rates, respectively.

### *Data collection*

For the purposes of this research, data collection instruments from Ethiopia (2008), Kenya, Malawi and Cambodia were reviewed and input received from a panel of local experts and investigators. The instruments were pilot tested and further revisions made before provider training was conducted. In preparation for the prospective morbidity study, one provider from each participating facility was selected to participate in a residential group training session to learn to extract information on each woman seeking abortion care during the 30-day data collection period. Study team members and regional supervisors monitored data collection with in-person visits and phone calls. Survey data were collected simultaneously from key informants in the same and additional facilities in a companion health facilities survey.

Data collection began in November 2013 and continued until May 2014. Prospective abortion-related morbidity data were collected on the care of 5,604 women who sought legal abortions, care for abortion complications, or those of a complicated miscarriage, in the sample of 365 health facilities over 30 days in each facility. Using the standardized form developed for this study, data collectors did not differentiate between complications resulting from unsafe abortions and spontaneous miscarriages. Each healthcare provider recorded information on each woman with a request for a legal abortion, or, an incomplete, missed, inevitable, complete, or septic abortion. Data capture forms completed by the caregivers collected data on patient demographics, self-reported induction attempts, reproductive history, vital signs, symptoms found on physical exam, and clinical management. Data were recorded from the details of each woman's care by her provider, patients were not interviewed directly. The flow of the form approximated the continuum of the woman's care to improve data quality and minimize provider effort.

During both years data were collected in NGO-affiliated health clinics, 24 in 2008 and 74 in 2014. However, these data were collected differently in each year. For 2014, annual retrospective service statistics on the number of women served were collected from the head offices early in 2015; in 2008 providers in the 24 NGO health facilities collected data prospectively on abbreviated but similar forms also used in the public and private sector facilities. Additionally, in 2014, two different health facility surveys were conducted and used, in the case of one of the NGOs, to estimate the proportion of all uterine evacuation procedures that were for the treatment of abortion complications because the NGO service statistics did not distinguish these from induced abortions. In total, in 2014 these 74 facilities reported providing abortion care to 102,397 women. After examination of the survey data, it was estimated that 3.3% of all procedures from the 28 NGO facilities that did not distinguish by the presenting condition, were likely postabortion care for abortion complications, while the remaining 96.7% were legal induced abortions.

### *Analysis*

Weighted adjustments were calculated for each stratum, based on the number facility respondents, sampling frame errors, the sampling fraction and the level of non-response. This resulted in the possibility for 46 strata, ultimately reduced to 39 because 7 strata had no facilities of that type in the selected region. Sampled facilities that reported at or before PMM training that they did not provide any abortion care did not meet eligibility requirements and were subsequently dropped from the universe of eligible facilities but appropriately accounted for in the weights; 5 facilities that reported providing care but did not provide care for any women during the study period are also accounted for in the strata weights.

Data were entered using Epidata version 4.0 in Addis Ababa, Ethiopia, and then transferred to Stata version 11.0 for analysis. Ethical approval was obtained from the Guttmacher Institute's Institutional Review Board in the United States and the National Ethics Review Committee of the Ministry of Science and Technology in Addis Ababa.

Descriptive data are presented as unweighted frequencies and weighted proportions of those non-missing responses. Data have been adjusted to account for variance estimation appropriate for survey data and the multi-stage stratified sampling design. Adjusted chi-square statistics and their corresponding p-values were used to test for bivariate associations between the two study waves. Analyses of change over time was calculated using McNemar's tests for paired nominal data.

## Results

As shown in **Table 2**, in 2008, more than 6 of 10 women who sought any type of abortion care in Ethiopia did so in private or nongovernmental health facilities. The proportion of this care provided in that sector, seems to be declining, with just over 45% of women receiving abortion care - either for the treatment of complications due to an unsafe abortion, a miscarriage or a legal abortion procedure - in those facilities in 2014. The largest shift in the provision of abortion care is occurring in public health centers, who have increased their share of the burden of care from 22 to 40% of all abortion care between 2008 and 2014. The share of all care provided declined at all levels in the private sector, while abortion care provision in the public sector increased from 36 to 56% overall ( $p < 0.02$ ).

In addition, in the five years between the two study waves, the overall amount of abortion care provided in health facilities increased substantially. As expected in a country with a recently liberalized abortion law, the absolute number of women seeking a legal abortion in a health facility more than doubled, increasing from almost 105,000 safe and legal procedures to almost 212,000 procedures. The number of women seeking care for complications of an unsafe abortion or a complicated miscarriage also increased by 151%, from more than 38,315 women to more than 96,000 women seeking assistance for their morbidity.

Socio-demographic characteristics of women seeking abortion care (**Table 3**) also changed in the second wave of the study with more single, 28% versus 14% in 2008, and fewer married women, a decrease from 81% to 61%, as well as younger women ( $p = 0.04$ ) presenting with complications of abortions. Women in 2014 were also more educated, with fewer women having never gone to school and a larger proportion having attended some secondary school.

In both years, around one in four women reported that their pregnancies were the result of a contraceptive failure. In 2014, much smaller proportions of women in the study sample reported either

a previous miscarriage (23%) or a previous abortion (11%). Women in the second wave of the study, being younger overall, had also been pregnant fewer times. Almost the inverse of the 2008 parity distribution occurred in 2014 with more than 40% of women reporting this pregnancy as their first and only one quarter stating that they had been pregnant four or more times. A slightly smaller proportion, 11%, than in 2008 told their health care provider that they had tried to interrupt their pregnancies that resulted in their complications.

While far more women are seeking abortion care in 2014 than did in 2008, they are also seeking assistance of different types. A higher proportion of all women are now seeking safe and legal abortion procedures in health facilities; the proportion of all care that is now safe and legal increased from almost 48% to 53% of all abortion care provided. However, many more women continue to seek assistance for postabortion morbidity as a result of an unsafe abortion; while the proportion of all women seeking abortion care who are seeking care for abortion complications has decreased, the numbers are still daunting. The proportion of these women with severe life-threatening complications has remained relatively constant at 14 and 15% in 2008 and 2014, respectively. The proportion of all abortion care that is provided for non-life threatening morbidity has decreased from almost 38% to 32% of all of the abortion care provided.

A picture of the presentation and treatment of Ethiopian women seeking PAC on a national level is described in **Table 4**. In both years a similar proportion, 79% and 82%, respectively, of all women seeking PAC required a uterine evacuation procedure. In 2014, more women overall received a procedure with vacuum aspiration (75% compared to 56% in 2008) and a smaller proportion of all women received a procedure using sharp curettage (decreasing from 38 to 8% of all procedures in the country), a method no longer recommended by the World Health Organization as the gold standard of care. Some women in 2014 also benefitted from the introduction of medical methods or misoprostol for PAC, with 13% of women in 2014 having a uterine evacuation procedure with medication. Across the nation, a large shift can be seen in the type of health care worker providing PAC; physician-administered care decreased from over half to only 29% of all care as the proportion of midlevel providers treating women increased from 45 to 71% of all postabortion care. Additionally, although the question was not asked in 2008, almost two-thirds of women receiving PAC left with a method of contraception in 2014.

As shown in **Table 4**, women presented from care earlier with only 19% of all women seeking care after their first trimester. In both years, a small proportion of all women required blood transfusions or other blood products. Over half of women in 2014 received intravenous fluids (up from a third in 2008) and they more often received antibiotics and some kind of pain medication to supplement their treatment. Although the response had a significant amount of missing data, women do seem to be seeking care earlier; three-quarters (74%) of women in the sample sought care for their abortion complications in the first trimester of their pregnancies, this is up from 62% in 2008. Although most women presented for care in the first trimester, over 40% of all women in the 2014 sample had been referred to the caregiving facility by another provider or facility, quite possibly delaying appropriate care and increasing the severity of their complications and risk of subsequent morbidity.

As shown in **Table 5**, although a smaller proportion of all women required hospitalization, from 23% to 18%, to treat serious complications, changes in the proportions of women with symptoms very specific to unsafe abortion, signs of a foreign body or mechanical injury to the vaginal area or foul smelling or offensive products of conception were similar in both years. Although the morbidity pattern was similarly high in both years, overall, the proportion of women who died from complications of an unsafe

abortion was less than 1% of all women seeking care in both years. In absolute numbers, seven women died during the study period in 2008 and two women in 2014.

## **Discussion and conclusions**

Since reform of the Ethiopian abortion law took effect in 2006, abortion can be performed legally in cases of rape or incest, if the woman has physical or mental disabilities, if it is needed to preserve the woman's life or her physical health, or if she is a minor who is physically or mentally unprepared for childbirth<sup>8</sup>. The revised law is liberally interpreted in Ethiopia and the landscape for abortion care, of all types is changing rapidly. Yet despite enormous progress, research increasingly indicates that changing generations of behaviors resulting in unsafe abortions and piercing centuries of stigma and silence may not happen quickly<sup>9-11</sup>.

The number of women seeking abortion care in health facilities of any type has increased by more than 100%, and by more than 150% in the case of care for complications of unsafe abortions. These increases in facility-based care correspond with more than a 250% increase in the number of health facilities in the country that are eligible to provide legal abortion care, as well as a national effort to scale up and expand comprehensive abortion care and the introduction of medical abortion for induction. Increases are compatible with improved health care utilization in other areas and, according to a national survey conducted on health care utilization, family planning and reproductive health services are among the most common causes for seeking outpatient care, second only to malaria and childhood immunization<sup>18</sup>. Although it is still low by international standards, the proportion of women delivering with a skilled birth attendant increased from 5 to 16% of all deliveries since 2000.

While it was estimated in 2008 that almost three-quarters of women who had abortions had them outside of health facilities in situations that were likely considered to be unsafe, and many of these women who had complications did not seek care, it is encouraging on every level that more women are seeking care from trained and skilled health care workers. Additionally, the shift to safe and legal procedures is beginning to occur on a national level as women learn about the law and gain confidence in the health system. More than half of all abortion care provided in facilities in Ethiopia in 2014, was for a safe and legal abortion. In a country that is 80% rural and where 30% of the population lives below the poverty line it is not surprising that much of this burden has begun to transition from the private for-profit sector to the public sector where training and quality improvement has been extensive and most abortion care is now provided at low to no cost.

The eradication of unsafe abortion in Ethiopia remains a challenge. While the proportion of all abortion care provided in health facilities for treating complications of an unsafe abortion or complicated miscarriage has declined, the decline has primarily been among women with non-life threatening morbidity, such as a moderately elevated temperature, bleeding, or early signs of infection, perhaps indicating overall less invasive methods being used in the country or earlier care-seeking. It is discouraging that the proportion of women seeking assistance for life-threatening unsafe abortion morbidity such as the symptoms of sepsis, shock, or organ failure, has changed very little.

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**Table 2. Number and location of all women seeking abortion care in Ethiopian health facilities in 2008 & 2014**

	2008 <sup>1</sup>		2014		p value
	Women per month		Women per month		
Women sought abortion care at:	No.	% <sup>2</sup>	No.	% <sup>2</sup>	0.02
Public hospital	1,582	13.64	3,610	16.18	
Public health center	690	22.31	1,248	39.46	
Private hospital	525	4.51	478	2.69	
Private higher clinic	295	9.55	268	5.52	
NGO health facilities <sup>3</sup>	5,816	50.00	8,730	36.12	
	No. (CI)*	%*	No. (CI)*	%*	% change
Annual number of women presenting for legal pregnancy terminations (weighted)	104,919 (63,966-145,872)		211,879 (174,449-249,308)		+102%
Annual number of women presenting with abortion complications (weighted)	38,315 (33,741-42,889)		96,050 (87,702-104,398)		+151%

<sup>1</sup>Results differ from those published in Gebreselassie et al. because of a re-analysis for a comparison of the results with 2014 and the addition of legal abortion data not included in the presentation of 2008 results.

<sup>2</sup>Facility type frequencies are unweighted; all percentages, monthly and annual numbers of cases are weighted and presented as a proportion of non-missing responses.

<sup>3</sup>2014 data include all client-level data collected during the 30 day data collection period and 1/12.16<sup>th</sup> of the annual monitoring data for the NGOs. Due to a difference in the methods of collecting data in the NGOs, PAC data for one of the NGOs has been estimated to be 3.3% of all abortion care provided and disaggregated from total abortion monitoring data based on a secondary analysis of health facility results, key informant interviews and a secondary survey on the likelihood of caring for women with abortion complications in a subset of the NGO's facilities.

**Table 3. Socio-demographic characteristics of women seeking abortion care in Government and private sector health facilities in Ethiopia in 2008<sup>1</sup> & 2014**

	No.	% <sup>2</sup>	No.	% <sup>2</sup>	p value
Marital status					0.38
Single	883	31.73	1,581	31.60	
Married	1,966	58.96	3,295	56.61	
Cohabiting	107	4.40	272	5.13	
Separated/widowed/divorced	133	4.92	358	6.66	
Age, in years					<b>0.04</b>
< 18	182	6.78	344	6.60	
18-24	1,350	46.59	2,394	45.55	
25-29	734	22.41	1,413	25.03	
30-34	400	12.08	718	13.64	
35+	426	12.14	556	9.19	
Rural residence	1,150	39.47	Not asked	-	-
Education					<b>0.04</b>
No schooling	1,002	33.70	1,558	30.87	
Some primary school	855	27.26	1,763	32.22	
Some secondary school	968	31.81	1,853	32.19	
Some post-secondary school	257	7.22	347	4.72	
Reported a previous abortion	245	13.14	602	11.56	0.47
Number of pregnancies					0.44
1	1200	41.14	2,377	43.55	
2	530	16.99	1,045	16.87	
3	389	12.59	752	12.91	
4+	972	29.27	1,418	26.67	
Reported trying to interrupt this pregnancy <sup>3</sup>	337	10.50	765	14.88	<b>0.01</b>
Woman reported pregnancy was a result of contraceptive failure	714	23.18	1570	30.36	<b>0.01</b>

<sup>1</sup>Results differ from those published in Gebreselassie et al. because NGO facilities were excluded from the sample in 2014 and have subsequently been removed from this analysis to improve comparability between the two waves.

<sup>2</sup>Sizes of subgroups (counts) are unweighted while percentages have been calculated with weights for national representation. Percentages are presented as proportion of non-missing responses.

<sup>3</sup>Reported trying to interrupt this pregnancy: In 2014 only 1,521 (52%) responses were recorded for this question.

**Table 4. Clinical management and treatment of women seeking abortion care in Government and private sector health facilities in Ethiopia in 2008 and 2014**

	2008 <sup>1</sup>		2014		p value
	No.	% <sup>2</sup>	No.	% <sup>2</sup>	
Method of evacuation					<b>0.001</b>
MVA/EVA	1,643	72.89	2,774	43.51	
Medical methods for induced abortion	1	0.02	1,712	31.11	
Medical methods to treat complications	18	0.35	228	4.31	
Sharp curettage	870	23.19	262	3.29	
Other methods <sup>3</sup>	130	3.45	36	1.33	
Who performed evacuation					<b>0.001</b>
Physician	1,645	51.61	1,386	17.54	
Midlevel provider <sup>4</sup>	1,010	48.39	3,540	82.46	
Woman accepted a contraceptive method	Not asked		4,123	76.65	-
Woman received something for pain	2,010	70.94	4,231	70.48	<b>0.04</b>
Best estimate of gestational age of the pregnancy for women with complications <sup>5</sup>					0.09
First	1,144	65.9	1,843	70.45	
Second	719	34.1	932	29.55	
Best estimate of gestational age of the pregnancy for women seeking legal terminations					0.27
First	1,049	89.26	2,244	91.58	
Second	173	10.74	404	8.43	

<sup>1</sup>Results differ from those published in Gebreselassie et al. because NGO facilities were excluded from the sample in 2014 and have subsequently been removed from this analysis to improve comparability between the two waves.

<sup>2</sup>Sizes of subgroups (counts) are unweighted while percentages have been calculated with weights for national representation. Percentages are presented as proportion of non-missing responses.

<sup>3</sup>In both years the "other" category was comprised primarily of manual removal of products and uterotonics.

<sup>4</sup>Physicians include specialists, general practitioners, residents, and interns. Midlevel providers include nurses, midwives, health officers and IESOs.

<sup>5</sup>Includes 15 cases with missing values imputed to the first trimester in 2008. 2008 data were a continuous variable based on woman's reported LMP followed with a categorical variable based on clinical exam. 2014 data were based on a continuous variable based on woman's reported LMP followed by a continuous variable based on clinical exam. In both years responses from these two years were combined using clinical assessment first, followed by women's reports if clinical estimation was missing.

<sup>2</sup>Gestational age: Includes 15 cases with missing values imputed to the first trimester in 2008; 2014 sample includes a large number of questionnaires (n=1214; 42%) with no indication of gestational age given.

**Table 5. Number and percentage of women presenting for abortion care and symptoms of those with near miss abortion complications<sup>†</sup> at Government and private sector health facilities<sup>1</sup> in 2008 and 2014**

	2008 (N=3,092)		2014 (N=5,604)		p value
	No. (CI)**	(%)	No. (CI)**	(%)	
					p=0.08
Women seeking legal abortions in health facilities	1,229	47.68	2,706	53.16	
Women with low to moderate morbidity	1,356	38.15	2,160	31.92	
Women with severe near miss abortion complications	507	14.17	738	14.92	
<b>Symptoms among women seeking care for severe near miss complications:</b>					
	No.**	(%)	No.**	(%)	p value
Woman required hospitalization over 24 hours	608	23.1	786	19.85	p=0.08
Death	7	0.13	4	0.15	p=0.55
Sepsis	313	8.84	159	7.94	<b>p&lt;0.001</b>
Temp > 37.9 degrees Celsius	171	10.41	280	11.76	p=0.09
Evidence of mechanical injury or foreign body in uterus, vaginal area or cervix or uterine perforation	145	4.16	200	3.16	p=0.99
Shock	88	2.26	153	7.57	<b>p=0.006</b>
Pulse > 119 beats/minute	64	2.56	134	2.48	<b>p=0.01</b>
Organ or system failure	47	1.35	126	8.94	<b>p&lt;0.001</b>
Generalized peritonitis	5	0.94	16	1.02	<b>p=0.002</b>
Tetanus	3	1.26	2	0.03	<b>p=0.02</b>

<sup>†</sup>Morbidity classifications of low, moderate and severe are comprised of women with one or more morbid symptoms; frequencies are unweighted counts of all individuals and percentages are weighted to account for the complex sampling and study design.

<sup>‡</sup>Severe morbidity sequelae are overlapping categories so numbers and percentages do not total 100%. Numbers are unweighted frequencies and weighted percentages to account for the complex sampling and study design.

<sup>1</sup>Morbidity data exclude NGOs in both years because no morbidity data were collected from NGOs in 2015.