NICASALUD

BASELINE SURVEY REPORT FOR 12 PARTNER
NON-GOVERNMENTAL ORGANIZATIONS

ADP, ALISTAR, AMNLAE, CEPS, COMPANEROS, FUMEDNIC, FUNDEMUNI, FUNIC, FUNISDECI, HABLEMOS, INPRHU, and IXCHEN

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ACRONYMS

DPT	-	Diphtheria, Pertussis, and Tetanus
EPI	-	Expanded Program on Immunization
HIV/AIDS	-	Human Immunodeficiency Virus/Acquired Immune Deficiency
IMCI	-	Integrated Management of Childhood Illness
LQAS	-	Lot Quality Assurance Sampling
MINSA	-	Ministry of Health
MMR	-	Measles, Mumps, and Rubella
NGO	-	Non-Governmental Organization
ORS	-	Oral Rehydration Salts
PVO	-	Private Voluntary Organization
SA	-	Supervision Area

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BACKGROUND

This report supplements the NICASALUD private voluntary organization (PVO) baseline report (Valadez et al. 2001) by documenting the results of baseline surveys carried out by 12 subgrantees of NICASALUD: ADP, ALISTAR de Nicaragua, AMNLAE Esteli, CEPS, Companeros de las Americas, FUMEDNIC, FUNDEMUNI, FUNIC Mujer, FUNISDECI, Hablemos de Nosotras, INPRHU Somoto, and IXCHEN. These twelve NGOs received their subgrant awards in June and July 2000 and conducted their baseline surveys during late August 2000 as the first stage of establishing a monitoring and evaluation system for their respective projects. Baseline survey activities included training, data collection and analysis.

Catchment Areas for the 12 NGO Partners

NICASALUD's 12 NGO partners work in areas affected by Hurricane Mitch located in the north and northwestern departments and along the Rio Coco. The departments and project areas in Nicaragua in which they work are reported in Table 1 and displayed in Figure 1.

Table 1: Mitch-Affected Departments and Municipalities in which the 12 NGO Partners of NICASALUD Work

NGO	Departments	Project Area
ADP	Chinandega	Villa Nueva
ALISTAR	Jinotega	Río Coco and Río Bocay
AMNLAE	Estelí	Estelí, Limay, Condega, Trinidad, San Nicolás, and Pueblo Nuevo
CEPS	Nueva Segovia	Ocotal
COMPANEROS	Jinotega	Jinotega/RAAN
FUMEDNIC	Chinandega León	Puerto Morázan Villanueva La Paz Centro and Telica
FUNDEMUNI	Madriz	Quilalí
FUNIC Mujer	Carazo	Santa Teresa
FUNISDECI	Jinotega	El Cuá Bocay
HABLEMOS	Chinandega	El Viejo
INPRHU	Madriz	San José de Cusmapa
IXCHEN	León Chinandega Matagalpa Estelí	Malpaisillo Chichigalpa San Isidro Estelí

Figure 1. Map of Nicaragua Showing Project Locations for 12 NGO Partners

Selected Interventions

The 12 NGO partners of NICASALUD developed proposals independently of each other. Table 2 lists the organizations according to interventions they proposed to implement.

Table 2. Summary of NICASALUD NGO's Proposed Projects

NGO	HIV/AIDS	Nutrition[1]	Sexual and Reproductive Health (SRH)[2]	IMCI	EPI
ADP	X		X	X	X
ALISTAR	X		X		
AMNLAE Estelí	X	X	X		
CEPS	X		X		
Companeros de las Americas			X	X	X
FUMEDNIC	X		X		
FUNDEMUNI			X	X	
FUNIC Mujer		X	X	X	X
FUNISDECI			X	X	X
HABLEMOS			X	X	X
INPRHU			X	X	X
IXCHEN	X		X		

METHODS

Questionnaire Development

NICASALUD recommended that the NGOs use four short questionnaires for the baseline survey. Each one corresponded to a particular sampling universe related to their selected interventions:

- Women of reproductive age, 15-49, not pregnant.
- Men of reproductive age, 15-49.
- Mothers with children ages 0-11 months.
- Mothers with children ages 12-23 months.

Indicators from the *NGO Networks for Health* Monitoring and Evaluation and the NICASALUD PVO baseline questionnaires were adapted to meet the needs of the NICASALUD NGOs (Valadez 2000). Using the PVO questionnaires as a template saved time, as many of the questions had been pre-tested and used in Mitch-affected areas. Additional questions were added that the 12 NGO partners identified

[1] These projects refer to developing home gardens and provision of healthy foods, breastfeeding, or Vitamin A for infants.

[2] These projects refer to safe motherhood and/or family violence.

as essential for program planning and were specific to their projects. All questions were in Spanish and pre-tested in local communities. In one case, ALISTAR translated its questionnaire into a local indigenous language because this organization works with the Mizquitos, an indigenous group of people in the Jinotega department.

Training Workshops in Survey Methodology

Similar to the NICASALUD PVO baseline activities, a training workshop was organized for the NGOs of NICASALUD. The workshops were facilitated by the Monitoring and Evaluation Advisor of NGO Networks, a PLAN consultant, and the Monitoring Evaluation Officer of NICASALUD, and attended by NGO health managers and supervisory health promoters. The training focused on developing an effective and sustainable monitoring and evaluation system for using data to set priorities, make decisions, and plan programs.

The data collection at each site began immediately following the training and was supported and supervised by a workshop trainer or NICASALUD supervisor. While each site varied slightly in the amount of time needed to collect data, no team took more than approximately three weeks.

Together, the NGOs collected data from thirty-eight supervision areas (SAs). Nineteen sets of questionnaires were collected in each SA.[3] The day following the data collection, a tabulation workshop was held for the NGOs. Managers and supervisors tabulated data by hand for key variables, thereby providing information almost immediately after the survey was completed for use in setting priorities in SAs. Lot quality assurance sampling (LQAS) was used by SA community health workers and NGO health managers to make decisions about each SA vis-a-vis other SAs within the catchment area of each NGO, as well as to calculate overall coverage of the catchment area. These results were used to establish program priorities. Thereafter, NICASALUD worked individually with each NGO through November 2000 to support their priority setting and to aid their preparation of individual reports. These NGO-specific reports can be found in a separate publication (Campos et al. 2001).

Challenges to Data Analysis

The questionnaire data were analyzed locally by managers and supervisors using a paper and pencil system that summarizes all *correct* responses for a given indicator in each supervision area. These summaries display the data in a convenient manner so that local managers can make LQAS judgments about SAs and then add the summary data together to calculate unweighted coverage proportions. For local decision-making, this level of analysis is all that is needed.

Once the hand tabulations were completed, the data were then used to calculate coverage proportions for NICASALUD as whole or for specific regions. In our experience, hand tabulations of data are completed within a few days of the data collection. The tabulations were then used for priority setting and other program decision-making (Campos et al. 2001).

[3] A set is equivalent to one interview for each of the four types of respondents: women ages 15-49 (not pregnant), men ages 15-49, mothers of children ages 0-11 months, and mothers of children ages 12-23 months. One set is completed per sampling point.

RESULTS AND DISCUSSION

The results in this section are analyses of hand-tabulated responses to questions asked of four different categories (or universes) of respondents: non-pregnant women ages 15-49, men ages 15-49, mothers of children ages 0-11 months, and mothers of children ages 12-23 months. For the purpose of brevity, we refer to these four universes as: women, men, mothers 0-11, and mothers 12-23. *Networks'* staff developed a computer program to reconstitute the hand-tabulated data and calculate weighted coverage proportions and confidence intervals, which are used in this report (Appendix 2).

The results presented are for the NICASALUD NGOs. It is important to note that not all NGOs collected the same information. The survey tools were customized to meet the needs of each organization. For example, each NGO did not propose to implement an HIV/AIDS prevention intervention, and therefore did not ask women and men about HIV/AIDS-related knowledge and behavior. Similarly, some organizations are working on projects beyond the scope of what is reported here (e.g., violence against women), but are discussed in the individual reports that each organization produced shortly after the data were collected (Campos et al. 2001). This report focuses on indicators that can be used to monitor the progress of the NICASALUD NGOs.

This report presents the NGO baseline results and does not make systematic comparisons with the PVO baseline, as the NGOs work in different communities from the PVOs (Figure 1), and the two baselines were completed at different times (8 months apart).

Demographics and Family Planning

Hurricane Mitch funds are not used to support *family planning activities* of the NICASALUD members. As a result, family planning indicators are not measured for the purpose of program planning. However, family planning questions were asked to provide information on the reproductive health behavior and knowledge of women and men in the catchment area. These results are reported in this section and summarized in Table 3.

Family Planning Method Use

The contraceptive prevalence rate (CPR) was calculated using responses of the non-pregnant women ages 15-49. Men were also asked if they used a family planning method to prevent pregnancy at the time of the survey. Sixty-two percent of the women compared with 57 percent of the men reported they currently used a family planning method. As we do not have access to the method-specific information in the hand tabulation, we cannot break this information down further.

Family Planning Method Knowledge

Women were asked which family planning methods they knew. For the NGO NICASALUD project area, 78 percent of the women interviewed mentioned two or more methods.

In addition, women were asked if they knew where to obtain family planning methods. Eighty-nine percent knew where to go.

Table 3. Family Planning Method Use and Knowledge

Indicator	n	MEAN	95% c.i.		S.E.
Behaviors Associated with Family Planning					
Percentage of women who report using a family planning method (CPR)	598	0.62	0.5815	0.6595	0.0199
Percentage of men who report using a family planning method	364	0.57	0.5234	0.6254	0.0260
Knowledge Associated with Family Planning					
Percentage of women who know at least two methods of family planning	585	0.78	0.7419	0.8097	0.0173
Percentage of women who know where to obtain family planning methods	588	0.89	0.8687	0.9186	0.0127

Safe Motherhood and Newborn Care

This section presents responses to safe motherhood questions concerning pre-natal care, delivery, post-natal care, maternal nutrition, and newborn care. The following groupings are reported here as they pertain to relevant questions: Women, men, and mothers 0-11. The first two groups were asked *knowledge* questions, as the project's premise is that women and men should be knowledgeable about these topics. The mothers were asked *behavior* questions to assess recent safe motherhood behaviors. The following sections analyze behavior responses first, followed by knowledge responses. Results are summarized in Tables 4 through 7 and in Figures 2 and 3.

Pre-Natal Care

More than three-quarters of mothers 0-11 (77%) said they had received pre-natal care from a qualified health provider. A large proportion of these mothers (83%) reported that they received iron during their most recent pregnancy. However, we do not know the amount of iron they received. The tetanus toxoid immunization rate reported in the child survival section of this report displays an unacceptably low coverage of 22 percent.

As both men and women in the program area should be knowledgeable of danger signs during pregnancy, this question was asked of both women and men. Only 39 percent of women and 30 percent of men knew two or more pregnancy danger signs.

These findings suggest that although pre-natal care is taking place, few women and men have adequate knowledge related to safe motherhood.

Table 4. Safe Motherhood: Pre-Natal Care

Indicator	N	MEAN	95% c.i.		S.E.
Pre-Natal Care					
Percentage of mothers (0-11 months) who report receiving pre-natal care from a trained clinical provider	454	0.77	0.7300	0.8078	0.0198
Percentage of mothers (0-11 months) who report receiving iron during the most recent pregnancy	228	0.83	0.7841	0.8817	0.0248
Percentage of women who know at least two danger signs during pregnancy	646	0.39	0.3560	0.4316	0.0192
Percentage of men who know at least two danger signs during pregnancy	456	0.30	0.2592	0.3437	0.0215

Delivery

Only 29 percent of mothers 0-11 reported that their most recent birth was attended by trained clinical personnel. This contrasts with the 1998 Demographic and Health Survey (DHS) data (DHS 1998), which reported that 44 percent of rural women delivered with assistance from either a doctor or nurse.

With regard to knowledge of danger signs during delivery, 30 percent of women and 22 percent of men knew at least two of them. Despite these low levels of knowledge, 82 percent of women know where to take a woman with maternal complications for medical treatment. However, only 54 percent of men know where to take a woman during such an emergency.

Table 5. Safe Motherhood: Delivery

Indicator	N	MEAN	95% c.i.		S.E.
Delivery					
Percentage of mothers (0-11 months) who report that their delivery was attended by a trained clinical provider	342	0.29	0.2380	0.3343	0.0245
Percentage of women who know at least two danger signs during delivery	646	0.30	0.2688	0.3400	0.0181
Percentage of men who know at least two danger signs during delivery	456	0.22	0.1854	0.2622	0.0195
Percentage of women who know the closest place for a woman with maternal complications to go to receive medical care	552	0.82	0.7866	0.8511	0.0164
Percentage of men who know the closest place for a woman with maternal complications to go to receive medical care	456	0.54	0.4917	0.5835	0.0234

Post-Natal

Thirty-seven percent of mothers 0-11 reported that they received care from a clinically trained provider after delivery. In comparison, 43 percent of the mothers reported that their newborn received care from a qualified health provider after delivery. Interestingly, 29 percent of mothers report having received information about family planning during their post-natal visit. While the percentage of women receiving post-natal care may be low, family planning information is being shared during those visits; however, the extent to which this takes place could be greatly improved.

Forty-one percent of women knew two or more post-natal danger signs, while far fewer men were knew these danger signs (29%).

Although women are considerably more knowledgeable than men about where to bring women with

obstetric emergencies (84% vs. 54%, respectively) (Table 5), few women and men are able to identify correctly when a woman is experiencing a life threatening post-natal condition (41% and 29%, respectively) (Table 6). This lack of knowledge represents a health risk for women should complications develop during pregnancy, delivery, or after delivery. As large proportions of women in these catchment areas deliver at home, this deficiency in knowledge presents an additional health risk for women and fetuses. Programs should focus on increasing the knowledge and ability among men and women to recognize maternal danger signs as well as when to seek emergency health care. Additional attention should also be given to involving men in the care-seeking process, as emergency situations may incapacitate a woman from making decisions, causing life-threatening delays.

Table 6. Safe Motherhood: Post-Natal Care

Indicator	N	MEAN	95% c.i.		S.E.
Post-natal Care					
Percentage of mothers (0-11 months) who report receiving post-natal care from a qualified health provider	323	0.37	0.3149	0.4207	0.0269
Percentage of mothers (0-11 months) who report that the newborn received care from a qualified health provider	324	0.43	0.3777	0.4862	0.0276
Percentage of mothers (0-11 months) who report receiving information about family planning during the post-natal check	293	0.29	0.2345	0.3386	0.0265
Percentage of women who know at least two danger signs after delivery	551	0.41	0.3672	0.4496	0.0210
Percentage of men who know at least two danger signs after delivery	456	0.29	0.2438	0.3270	0.0212

Newborn Care

Sixty-five percent of women interviewed could identify at least two danger signs to determine if an infant less than one month of age was sick.

Table 7. Newborn Care

Indicator	N	MEAN	95% c.i.		S.E.
Newborn Care					
Percent women who know at least two danger signs to identify when a newborn (less than 1 month) is sick	433	0.65	0.6099	0.6999	0.0229

Figure 2. Percentage of women and men who know two or more maternal complications

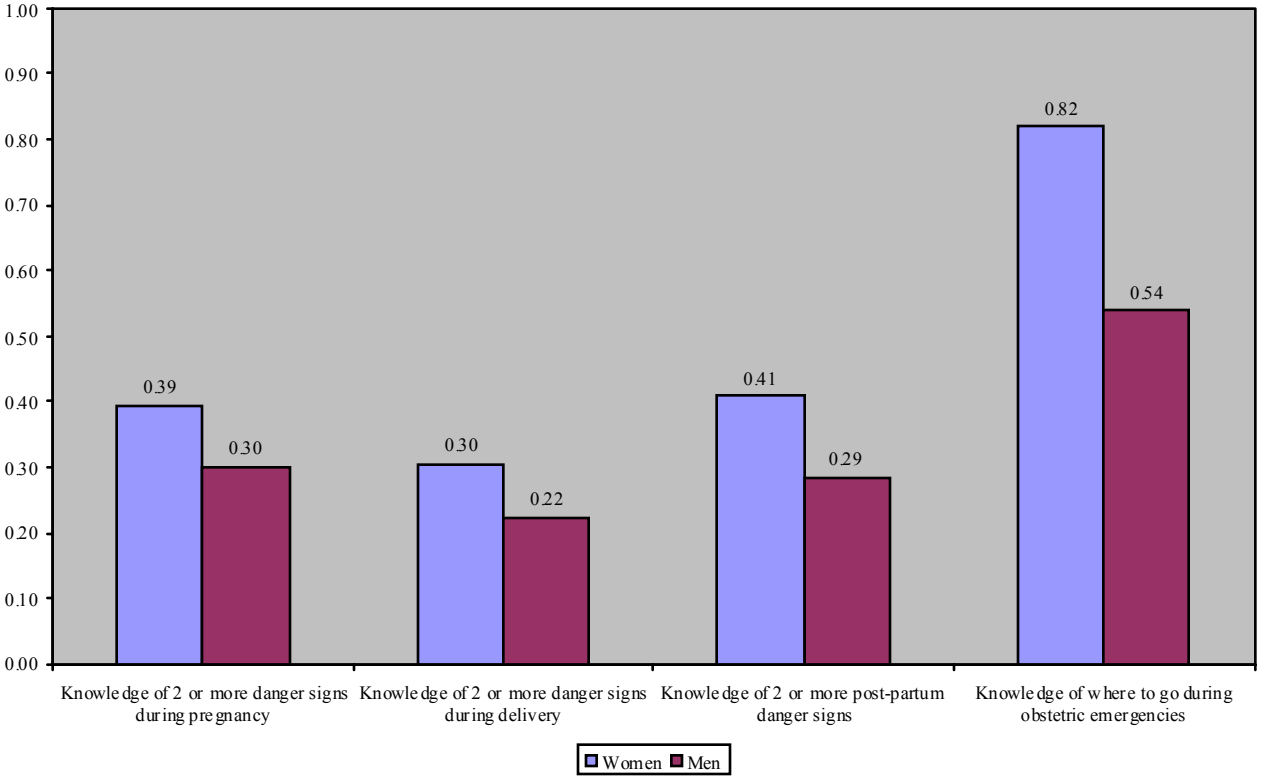
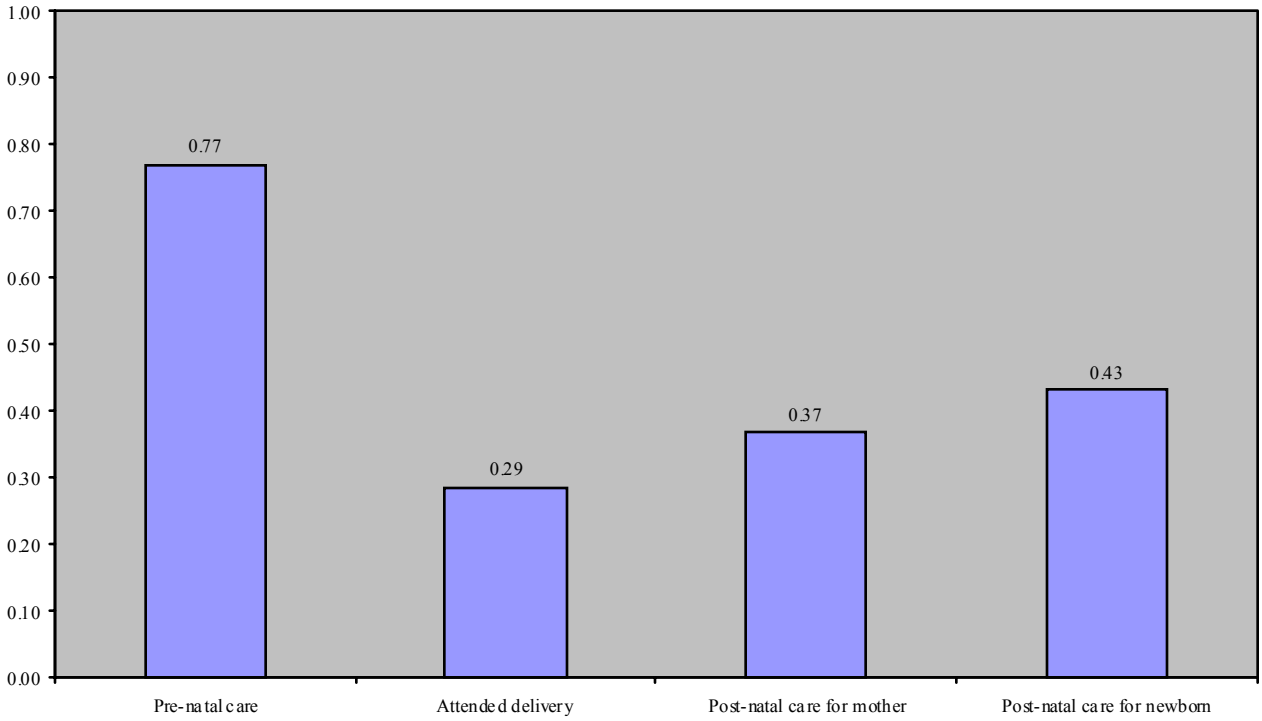


Figure 3. Percentage of mothers (0-11) or newborns receiving pre-natal care, delivery, and post-natal care from a qualified health provider



Child Survival

This section uses data from two cohorts of mothers, namely, those with children ages 0-11 months and those with children ages 12-23 months. In most cases, questions reflecting their most recent behavior or effect of the health system were asked. Questions concerning the treatment of sick children were placed in both instruments to increase the sample size, since the only children that were included in this analysis were those who had been ill during the two weeks before the survey interview.

Childhood Immunization

Children ages 12-23 months were included in this analysis as they should have completed their *first year of life* vaccination schedule. Using the standard of the World Health Organization, only vaccinations recorded on a vaccination card with a date were acceptable. The denominator consisted of all children ages 12-23 months.

The childhood vaccination schedule required by the Ministry of Health (MINSA) during the time of the baseline survey is displayed in Table 8. MINSA's overall goal is 90 percent coverage with all antigens. The analyses in this section are only for vaccinations in the first year of life. The measles vaccine is no longer given in Nicaragua during the first year. MINSA protocol now schedules the measles, mumps, and rubella (MMR) vaccination to be given at 12 months. MMR was introduced into the government immunization program only about two years ago, replacing the measles vaccine.

Table 8. Childhood Vaccination Schedule for Nicaragua by the Ministry of Health

Newborn	2 Months	4 Months	6 Months	1 Year	
BCG	DPT1[4]	DPT2	DPT3	MMR	DPT Booster
	Polio1	Polio2	Polio3	Polio	

Eighty-four percent of the mothers had and were able to show their child's vaccination card. This is nearly the same percentage that had been vaccinated with BCG (86%).[5] Similar values are seen with regard to polio (1-3) vaccinations and DPT1 (85% and 83%, respectively). As MMR is given during the second year, vaccination coverage should be assessed in a cohort of children 24-36 months, which was not included in this sample. However, for monitoring purposes, we note that MMR coverage in the 12-23 month cohort at the time of the survey was 76 percent.

NICASALUD measured full child immunization in the first year of life using MMR, DPT 1-3, and polio 1-3. Using these criteria, 76 percent of children were fully vaccinated in the 12-23 month cohort. Table 9 summarizes the child immunization data.

[4] The DPT has now been replaced with Pentavalent, a new vaccine that protects against five diseases: diptheria, pertussis, tetanus, hepatitis B, and influenza B.

[5] The estimated coverage levels for both BCG and polio (1-3) are greater than that for "percentage of mothers who have their child's vaccination card." This is a result of missing data, which affects the denominator, and consequently overestimates the coverage.

Table 9. Child Survival: Childhood Immunization

Indicator	n	MEAN	95% c.i.		S.E.
Childhood Immunization					
Percentage of mothers (12-23 months) who are able to show the baby's vaccination card	361	0.84	0.8005	0.8768	0.0194
Percentage of children (12-23 months) who are vaccinated for BCG (according to the vaccination card)	341	0.86	0.8216	0.8959	0.0189
Percentage of children (12-23 months) who are vaccinated for Polio (1-3) (according to the vaccination card)	343	0.85	0.8173	0.8922	0.0191
Percentage of children (12-23 months) who are vaccinated for DPT 1 (according to the vaccination card)	342	0.83	0.7915	0.8712	0.0203
Percentage of children (12-23 months) who are vaccinated for MMR (according to the vaccination card)	342	0.76	0.7092	0.8008	0.0233
Percentage of children (12-23 months) who are vaccinated for Polio (1-3), DPT(1-3), and MMR (according to the vaccination card)	73	0.76	0.6644	0.8639	0.0500

Tetanus Toxoid Immunization

Mothers of children ages 0-11 months were asked whether they had received tetanus toxoid vaccination and when they received them. Maternal vaccination cards were used to verify the reported information. Twenty-two percent of the mothers had received either two doses during the most recent pregnancy or five doses during a lifetime. These results are unacceptably low, given that 77 percent of these mothers report having received antenatal care from a qualified health provider. Results are shown in Table 10.

Table 10. Child Survival: Tetanus Toxoid

Indicator	n	MEAN	95% c.i.		S.E.
Tetanus Toxoid Immunization					
Percentage of mothers (0-11 months) who received 2 TT doses during pregnancy or 5 doses in a lifetime (according to the maternal health card)	324	0.22	0.1764	0.2673	0.0231

Breastfeeding and Complementary Feeding

Mothers with children 0-23 months were asked questions about whether they breastfeed, when breastfeeding was initiated, and when mothers should begin weaning their babies. With regard to mothers 0-11, 85 percent reported that they gave their newborn milk within the first hour after birth. To assess *continuing breastfeeding*, mothers 12-23 were asked if they were still breastfeeding at the time of the survey. Fifty-six percent reported they continued to breastfeed their children (see Table 11).

Table 11. Child Survival: Breastfeeding and Complementary Breastfeeding

Indicator	n	MEAN	95% c.i.		S.E.
Breastfeeding Behavior					
Percentage of mothers (0-11 months) who report giving the newborn breastmilk within the first hour after birth	357	0.85	0.8130	0.8874	0.0189
Percentage of mothers (12-23 months) who report that they are currently breastfeeding their baby	361	0.56	0.5037	0.6067	0.0262

Infections and Treatment of the Sick Child

This section reports the responses of mothers 0-11 and 12-23. Responses concerning children with diarrhea are aggregated from both universes and reported for children 0-23 months where appropriate.

Of the children ages 0-23 months in the sample, 36 percent were reported as having had diarrhea within two weeks of the survey. The prevalence of diarrhea in these NICASALUD NGO catchment areas was higher than the 21 percent prevalence reported in the 1998 DHS and higher than the 30 percent reported in the NICASALUD PVO catchment areas (Valadez et al. 2001).

Of the mothers who reported that their children had had diarrhea, 58 percent reported they had given their child the same or more liquids. About half (49%) reported giving oral rehydration salts (ORS) or another form of home ORS remedy during the episode. Fewer mothers (44%) reported giving the same or more food during the illness. However, 72 percent of the mothers reported that they gave equal or more food to the child after the diarrhea had subsided. These results suggest the importance of improving interventions enhancing treatment behavior during diarrhea episodes.

With respect to seeking treatment, 55 percent of the mothers took their ill child out of the home to seek treatment from a health worker during the diarrhea episode.

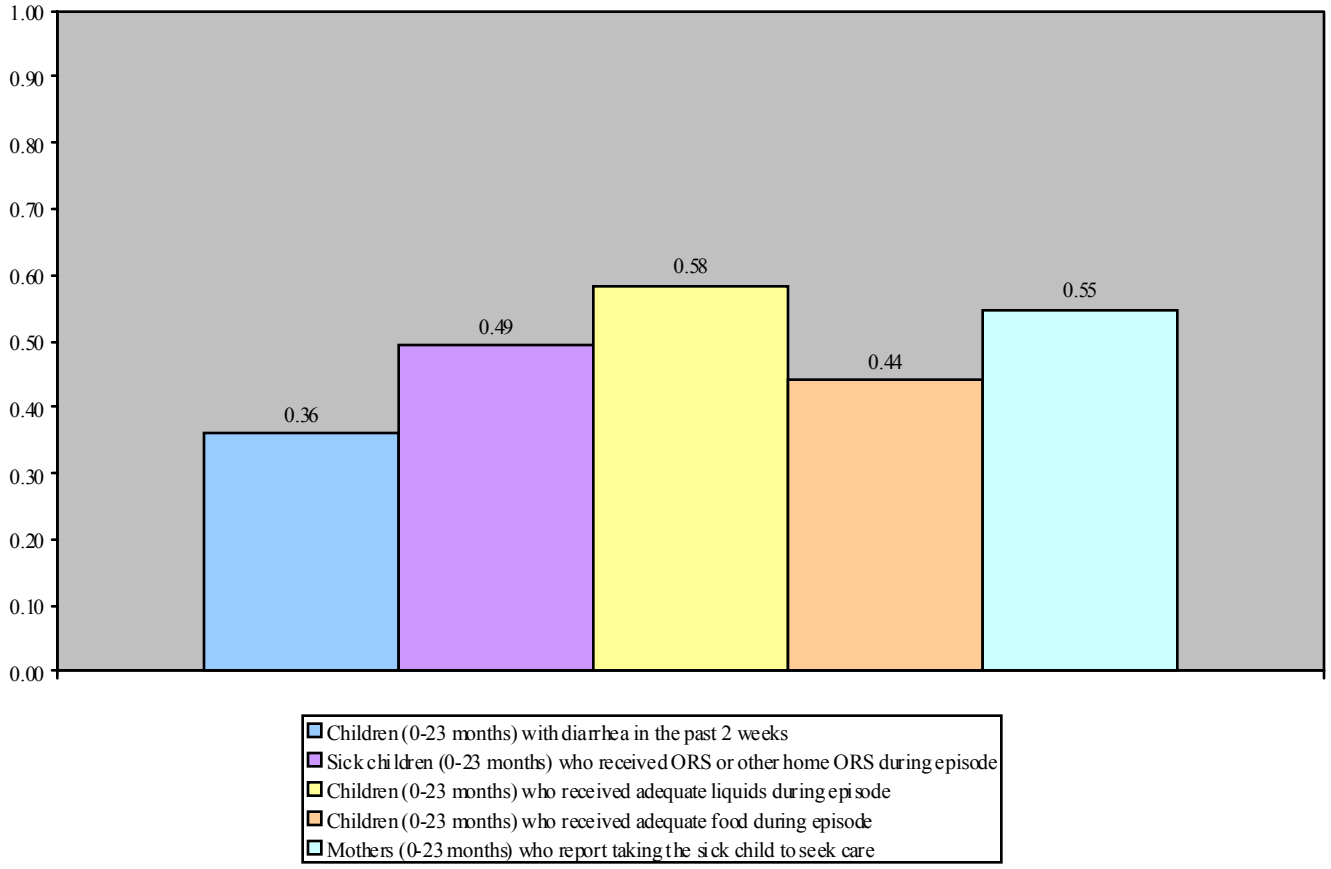
Among mothers 0-11, 56 percent were able to identify the danger signs associated with dehydration.

Additional questions were asked of all mothers to assess their knowledge regarding ORS preparation. Mothers were asked to both explain how to prepare the ORS mixture as well as to demonstrate the preparation. The abilities to both explain and demonstrate ORS preparation were low (8% and 11%, respectively) (see Table 12).

Table 12. Child Survival: Infections & Treatment of a Child with Diarrhea

Indicator	n	MEAN	95% c.i.		S.E.
Infections and Treatment of the Sick Child					
Diarrhea Prevalence					
Percentage of mothers (0-23 months) who report that their child had diarrhea in the past two weeks	721	0.36	0.3243	0.3945	0.0179
Behaviors Associated with Treatment of a Child with Diarrhea					
Percentage of mothers (0-23 months) who report that the child with diarrhea received the same or more liquids	183	0.58	0.5114	0.6556	0.0365
Percentage of mothers (0-23 months) who report that the child with diarrhea received ORS or another home ORS remedy	175	0.49	0.4186	0.5682	0.0379
Percentage of mothers (0-23 months) who report that the child with diarrhea received the same or more food during the episode	182	0.44	0.3688	0.5144	0.0369
Percentage mothers (0-23 months) who report that the child received the same or more food after the diarrhea episode	180	0.72	0.6540	0.7864	0.0336
Percentage of mothers (0-23 months) who report taking the child with diarrhea out of the home for treatment	182	0.55	0.4746	0.6206	0.0370
Knowledge Associated with Treatment of a Child with Diarrhea					
Percentage mothers (0-11 months) who know at least two danger signs during diarrhea	344	0.56	0.5087	0.6141	0.0268
Percentage mothers (0-23 months) who are able to correctly explain how to prepare ORS	689	0.08	0.0630	0.1045	0.0106
Percentage mothers (0-23 months) who are able to correctly demonstrate how to prepare ORS	689	0.11	0.0835	0.1297	0.0118

Figure 4. Diarrhea prevalence, treatment, and related feeding practices among mothers with children 0-23 months



HIV/AIDS and Other Sexually Transmitted Infections

This section reports responses of men and women to questions concerning HIV/AIDS and other sexually transmitted infections (STIs). Results are summarized in Table 13.

HIV/AIDS

Thirty percent of women and 41 percent of men were able to mention at least two ways to prevent HIV/AIDS transmission.

Other STIs

Thirty-two percent of women and 47 percent of men were able to mention at least two STIs other than HIV/AIDS. With this low level of knowledge about STIs, women and men were not able to correctly identify STI symptoms. Only 19 percent of women and 27 percent of men were able to list two or more STI symptoms in men.

Condom Use

Nine percent of women and 11 percent of men reported using a condom during their most recent sexual intercourse. However, an equally high proportion of women (75%) and men (78%) knew the closest location to obtain condoms.

Table 13. HIV/AIDS and STIs

Indicator	n	MEAN	95% c.i.		S.E.
HIV/AIDS					
Percentage of women who mention at least two ways to prevent HIV/AIDS transmission	525	0.30	0.2642	0.3432	0.0201
Percentage of men who mention at least two ways to prevent HIV/AIDS transmission	394	0.41	0.3623	0.4599	0.0248
Other STIs					
Percentage of women who mention at least two STIs (other than HIV/AIDS)	436	0.32	0.2739	0.3617	0.0223
Percentage of men who mention at least two STIs (other than HIV/AIDS)	447	0.47	0.4267	0.5197	0.0236
Percentage of women who know how to identify at least two STI symptoms in men	521	0.19	0.1544	0.2210	0.0170
Percentage of men who know how to identify at least two STI symptoms in men	448	0.27	0.2253	0.3075	0.0209
Condom Use					
Percentage of women who report using a condom during their most recent sexual relation	393	0.09	0.0604	0.1168	0.0144
Percentage of men who report using a condom during their most recent sexual relation	381	0.11	0.0809	0.1447	0.0162
Percentage of women who know where to obtain condoms	397	0.75	0.7059	0.7916	0.0218
Percentage of men who know where to obtain condoms	393	0.78	0.7372	0.8196	0.0210

APPENDIX 1: LOT QUALITY ASSURANCE SAMPLING

The Monitoring and Evaluation system for NICASALUD uses LQAS for data collection in baseline surveys (Dodge and Romig 1944; Wolfe and Black 1989; Valadez 1991; Robertson et al. 1997). The intention is that this method also be used for recurrent community monitoring by NICASALUD's partners. With LQAS, local NGO supervisors collect small samples in each SA, which they use to judge performance. These data, when aggregated for an NGO or for NICASALUD, are equivalent to a stratified random sample.

There are three major advantages to using LQAS. First, in addition to permitting calculation of a conventional average coverage for a program area, program managers can also determine the relative performance of the different SAs that comprise the catchment area. For example, a typical NGO program area could include several communities with a total population of several thousand people. To manage program implementation, the program area is divided into units, or SAs. Each SA is managed by a supervisor, such as a nurse, a midwife, or a community mobilizer, or some other individual. During monitoring, supervisors determine whether each SA reaches an annual performance benchmark. During baseline surveys, one assumes that SAs are homogeneous. In baseline surveys, LQAS determines whether any SA is below average and needs special assistance. In monitoring, LQAS is used to determine whether SAs reach performance benchmarks.

Second, LQAS uses a small sample size for making judgements. For most applications, a sample of 19 individuals is required in each SA to judge whether it is below average or has reached a performance benchmark. However, to calculate a coverage proportion for the catchment area, the individual samples of 19 are added together and an average is calculated. Assuming there are about five SAs, the total sample would be 95. With p=50%, this sample results in a NGO coverage measure with a *confidence interval* that is $\pm$10% of the true coverage. In addition to carrying out fewer interviews than other conventional sampling methods, the smaller sample size leads to a quicker analysis and interpretation.

Third, as LQAS uses a small sample to judge whether a health worker's performance reaches a predetermined standard, data collection does not seriously compete for the time health workers allocate to other health care activities. Health workers in developing countries are often overworked and need management tools that can easily be understood within their own cultural context.

Using LQAS for Baseline Surveys

The data presented in the following sections are coverage proportions. These results were also used by NGO health managers to identify priority SAs in their catchment areas, meaning SAs that fall below average.

To use LQAS to calculate coverage proportions, *correct* responses are counted for relevant indicators from all SAs. An average is then calculated for each NGO catchment area. This result is used to identify the corresponding average coverage at baseline (in the case of monitoring, the annual coverage target is substituted). Once calculated, a community health worker goes to Table 14 (the Composite LQAS Table) to locate the column header corresponding to the average coverage. In the next step, the community health worker locates the row for a sample of 19 (or the appropriate sample size if different from 19). At the intersection of this column and row, one finds the *Decision Rule*. If the total number of correct responses in an SA is less than the decision rule, then the SA is below average or did not reach the target and is in need of special attention. For example, if average coverage for an indicator was found to be 70 percent, then the decision rule would be 11. Any SA having less than 11 correct responses for that indicator would be judged to be below average. When using Table 14, the procedure is to always round upward, as this produces a more conservative decision rule. Therefore, if average coverage was 68 percent, then one would round upward to the nearest number divisible by 5 percent, which is 70 percent.

Parallel Sampling

The interventions selected by the NGOs suggest that at least four different categories of respondents (or universes) should be sampled to obtain meaningful baseline data. Table 2 includes the interventions for the baseline. Four distinct universes are represented including: mothers of children ages 0-11 months, mothers of children ages 12-23 months, non-pregnant women ages 15-49, and men ages 15-49. A separate short questionnaire was developed for each universe. We refer to four questionnaires taken together as a *set*. Interviewing a sample of these universes for assessing the various indicators is presented in a separate section on indicators. However, in this section we point out the implications on the sampling design arising from having the four sampling universes.

Each of the 19 randomly selected houses was the starting point used to sample one individual in each of the four universes. In other words, one set of questionnaires was completed for each sampling point. If a woman, man, or a mother resided in the first house, s/he was selected for the interview. If not, then the interviewer went to the next house to find the remaining interviewees. In theory, all of the universes could be sampled in a single house with one exception. Mothers of children ages 0-11 months and mothers of children ages 12-23 months had to live in separate residences because several indicators deal with treatment of the sick child and diarrhea case management. Questions related to these indicators were included in the two maternal questionnaires. Sub-samples of children ages 0-11 months and ages 12-23 months who were sick in the two weeks prior to interview were aggregated into a single group for analysis, namely, mothers of sick children 0-23 months. To avoid the possibility of a mother having both a sick child aged 0-11 months and 12-23 months represented in the sample, the rule was that these children had to reside in different households. We avoided this possibility as we presumed the responses to knowledge and behavior questions would be the same regardless of the child's age.

Table 14. LQAS Decision Rules for Sample Sizes of 12-30 and Coverage Targets/Average of 5%-95%*

Sample Size	Average Coverage (Baselines) / Annual Coverage Target (Monitoring and Evaluation)																		
	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
12	0	0	0	1	1	2	2	3	4	5	5	6	7	7	8	8	9	10	11
13	0	0	0	1	1	2	3	3	4	5	6	6	7	8	8	9	10	11	11
14	0	0	0	1	1	2	3	4	4	5	6	7	8	8	9	10	11	11	12
15	0	0	0	1	2	2	3	4	5	6	6	7	8	9	10	10	11	12	13
16	0	0	0	1	2	2	3	4	5	6	7	8	9	9	10	11	12	13	14
17	0	0	0	1	2	2	3	4	5	6	7	8	9	10	11	12	13	14	15
18	0	0	0	1	2	2	3	5	6	7	8	9	10	11	11	12	13	14	16
19	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
20	0	0	0	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17
21	0	0	0	1	2	3	4	5	6	8	9	10	11	12	13	14	16	17	18
22	0	0	0	1	2	3	4	5	7	8	9	10	13	13	14	16	16	18	19
23	0	0	0	1	2	3	4	6	7	8	10	11	12	13	14	16	17	18	20
24	0	0	0	1	2	3	4	6	7	9	10	11	13	14	15	16	18	19	21
25	0	0	1	2	2	4	5	6	8	9	10	12	13	14	16	17	18	20	21
26	0	0	1	2	3	4	5	6	8	9	11	12	14	15	16	18	19	21	22
27	0	0	1	2	3	4	5	7	8	10	11	13	14	15	17	18	20	21	23
28	0	0	1	2	3	4	5	7	8	10	12	13	15	16	18	19	21	22	24
29	0	0	1	2	3	4	5	7	9	10	12	13	15	17	18	20	21	23	25
30	0	0	1	2	3	4	5	7	9	11	12	14	16	17	19	20	22	24	26

**This composite table was developed by La Rue Seims

APPENDIX 2: STATA PROGRAMS FOR RECONSTITUTING NICASALUD NGO HAND TABULATED PROPORTIONS INTO DATA SETS

The Challenge

In earlier work, questionnaires were entered into a computerized database. This has taken as long as three months.

To reduce this delay, *Networks* has developed a process for analyzing and aggregating hand tabulations to produce NICASALUD-level results. This approach was already applied in Armenia (Valadez et al 2001). However, there were limitations.

The results for each indicator were presented as a proportion. Specifically, the data for each NGO consisted of a numerator (e.g., number of women reported using a family planning method) and a denominator (e.g., number of women asked if they used a family planning method). With this information, one can calculate an *unweighted* average coverage for NICASALUD by summing the individual proportions for each NGO. However, confidence intervals cannot be calculated. To aggregate the data and weight the values by the different NGO population sizes, one must "recreate" the entire data set to depict each individual record. The reason for this is that when proportions are summed, the sample size is misrepresented as the total number of proportions added together, in this case, the number of organizations. The correct value needed is the total number of women sampled. In the former case, the variance calculated merely measures the distribution of proportions, and not the variance of the actual data points. Without an accurate measure of variance, one cannot calculate confidence intervals around the estimated means, which is needed to assess change over time.

Recreating these data sets involved intricate programming using Stata 6, which was carried out by *Networks*' staff. Although the computer programs were written for each variable, only one is included in Appendix 2 of this report. These commands can be adapted for use by other PVOs and NGOs working on different interventions.

The Programs

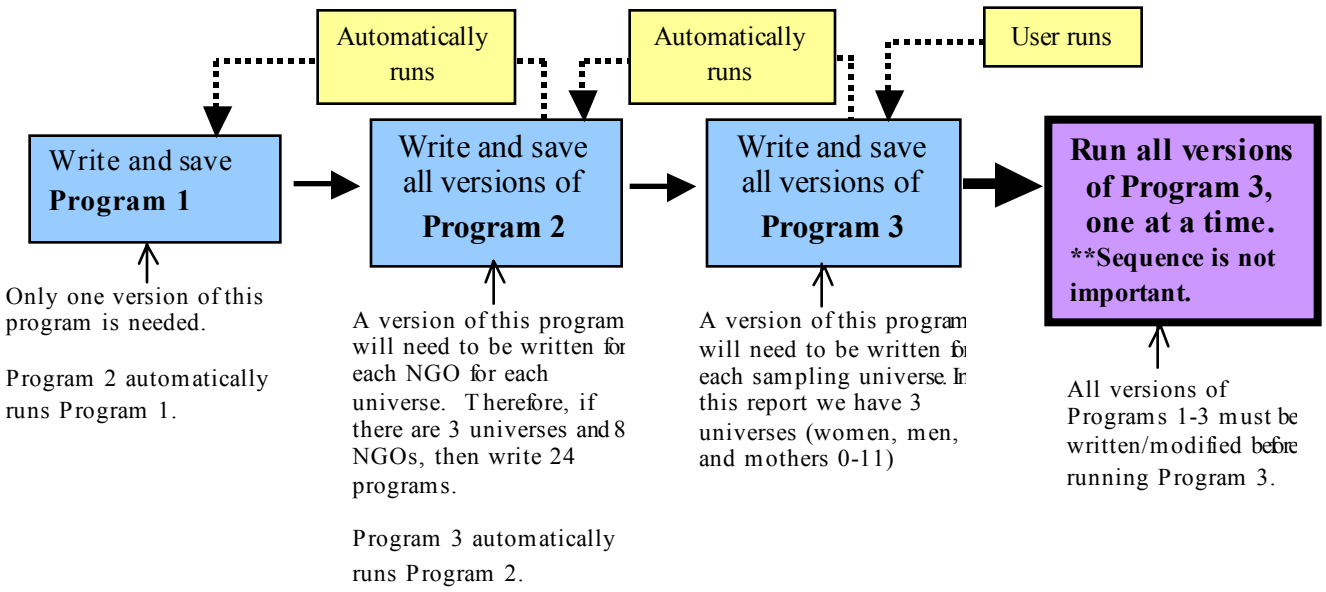
This section includes three Stata 6 programs that were used in this analysis. The program file names, data file names, variable names, NGO names, and population sizes are specific to this analysis and will need to be changed according to the user's specific needs. With each program there is a step by step procedure for adapting these programs. Figure 5 illustrates the order in which these programs should be used.

Note: The following description includes two symbols to distinguish instruction from exact programming.

[text] = these brackets specify the type of information used in a particular part of a command. For example, NGO name, population size, etc.

<<text>> = these brackets specify the exact Stata command used in these programs. The brackets are not part of the command, but used here to isolate and clearly mark the start and end of a command.

Figure 5. Flowchart for using these Stata programs



Program 1: nica_ngo.do

This program allows the user to:

- define and create a dichotomous variable ('*newvar*'). In this program the name *newvar* must be used, as this is language specific to Stata.
- specify how many observations are correct (Stata requires that these observations=1)
- specify how many observations are incorrect (Stata requires that these observations=0)

This program also does the following automatically:

- creates a data file (**.dta*) in which *newvar* is stored. The file is actually created in the line command that is described below (In Stata, *.dta* is the suffix used to identify data files).

The following program must be written and saved as a **.do* file (In Stata, *.do* is the suffix used to identify program files). After saving this file, the user is able to run the program by typing the following:
[program name] [newvar] [value (0 or 1)] [number of correct or incorrect observations] [data file name]

Let us assume you want to create a variable called "usingfp", and that the hand-tabulated results show 23 incorrect observations for this variable. Therefore, the command statement is: <<`nica_ngo usingfp 0 23 wom1a`>>. This command will run the "nica_ngo" program, create the variable "usingfp," set 23 incorrect observations equal to '0', and then save the data in a file named "wom1a.dta."

nica_ngo in the first line of the following program is the program's name and should be changed by the user.

```
program define nica_ngo
        clear
        qui set obs 1
      version 6.0
      gettoken newvar 0 : 0
      confirm new var `newvar'
        gettoken val 0 : 0
        confirm number `val'
        gettoken exp 0 : 0
        confirm number `exp'
        gettoken saving 0 : 0
        confirm existence `saving'
        gen `newvar'=`val'
        expand `exp'
        save `saving',replace
end
```

Although the user can run this program with the aforementioned command line, this is not necessary since Program 2 runs this command line as one of its functions.

Program 2: womenADP.do

This second program runs Program 1. Therefore, Program 1 should be written and saved as a **.do* file on the hard drive, from where it will be recalled by Program 2. Using this next program allows the user to:

- automatically run Program 1 to reconstitute all the variables that pertain to a specific universe (e.g., women ages 15 –49, not pregnant) for a given NGO (e.g., ADP). This program, womenADP.do is for the NGO ADP.
- create an appended **.dta* file that consists of both correct (wom1a.dta) and incorrect (wom1b.dta) observations for a single new variable (i.e., usingfp) for the given universe for a single NGO.
- define and create a variable to represent the NGO (i.e., NGO="ADP").
- create and save each new variable in an appended file for each NGO.

Similar programs should be written for every other NGO in the assessment.

The following program allows the user to create 13 new variables pertaining to women (with specified number of correct and incorrect observations) for the NGO, ADP. Type the following program and save it to the hard drive, let's assume we call it *prog2.do*. (By default, Stata looks for **.do* files in C:\"My Documents.")[6] To adapt this program to one's needs, the following steps must be followed:

1. line 1: [program name] [newvar] [value (1)] [# of correct observations from the hand tabulation] [data file name to be created and saved]
   <<`nica_ngo pregdang 1 26 wom1a`>>
   In this example, the variable is *pregdang* (knowledge of two or more danger signs during pregnancy), 26 women responded correctly. Data are saved in *wom1a.dta*. NOTE: Variable names can be up to 8 characters in Stata.
2. line 2: repeat for incorrect responses, also taken from the hand tabulation sheets.
   `<<nica_ngo pregdang 0 31 wom1b>>`
   31 women did **not** know 2 or more danger signs during pregnancy. File is saved as *wom1b.dta*.

[6] Quotation marks must be used around file names that include spaces (i.e., C:\Programs will not require quotes, but C:\"My Documents" will).

3. line 3: `append using` [file name]
   `<<append using wom1a>>`
   This appends *wom1a.dta* to *wom1b.dta* in order to consolidate the results in a single file.
4. line 4: `gen str10 ngo=`["NGO name"]
   `<<gen str10 ngo="ADP">>`
   This creates a variable named "NGO name" and allows you to specify to which NGO this data refers. The user must type the appropriate NGO name **between the quotation marks**.
5. line 5: `save` [appended file name], `replace`
   `<<save 1Awom, replace>>`
   This saves the appended file and overwrites any previously saved files with the same name. In this example, the file name *1Awom.dta* shows that these are data for the **first** variable (pregdang), for the A[th] NGO (ADP), for the universe "women."
6. lines 1-5 are repeated for each variable to be created for a given NGO.
7. SPECIAL NOTE: lines 56-58 illustrate how to write the program when 100 percent of the sample responds correctly or incorrectly.
   ```
   <<nica_ngo usecondo 0 51 wom12b>>
   <<gen str10 ngo= "ADP">>
   <<save 12Awom, replace>>
   ```
   There is no line to create "correct" values", or '1's. In this example, there were 51 women who responded incorrectly to whether or not they use condoms (*usecondo*), and zero women responded that they are using condoms. Therefore, there is no command line to create the correct response ('1') value for this variable.

```
**WOMEN 15-49 YEARS**[7]
**ADP**
1     nica_ngo pregdang 1 26 wom1a
      nica_ngo pregdang 0 31 wom1b
      append using wom1a
      gen str10 ngo= "ADP"
5     save 1Awom, replace

      nica_ngo delidang 1 22 wom2a
      nica_ngo delidang 0 35 wom2b
      append using wom2a
      gen str10 ngo= "ADP"
10    save 2Awom, replace


      nica_ngo postdang 1 25 wom3a
12    nica_ngo postdang 0 32 wom3b
      append using wom3a
      gen str10 ngo= "ADP"
15    save 3Awom, replace

      nica_ngo placdang 1 56 wom4a
      nica_ngo placdang 0 1 wom4b
      append using wom4a
      gen str10 ngo= "ADP"
20    save 4Awom, replace
```

[7] Lines preceded by asterisks (**) will not be read by Stata, but can be used to label programs or place notes throughout a program.

```
      nica_ngo sickchld 1 29 wom5a
      nica_ngo sickchld 0 28 wom5b
      append using wom5a
      gen str10 ngo= "ADP"
25    save 5Awom, replace

      nica_ngo usingfp 1 37 wom6a
      nica_ngo usingfp 0 20 wom6b
      append using wom6a
      gen str10 ngo= "ADP"
30    save 6Awom, replace

      nica_ngo knowfp 1 41 wom7a
      nica_ngo knowfp 0 16 wom7b
      append using wom7a
      gen str10 ngo= "ADP"
35    save 7Awom, replace

      nica_ngo obtainfp 1 51 wom8a
      nica_ngo obtainfp 0 6 wom8b
      append using wom8a
      gen str10 ngo= "ADP"
40    save 8Awom, replace

      nica_ngo prvnthiv 1 22 wom9a
      nica_ngo prvnthiv 0 35 wom9b
      append using wom9a
      gen str10 ngo= "ADP"
45    save 9Awom, replace

      nica_ngo othersti 1 5 wom10a
      nica_ngo othersti 0 37 wom10b
      append using wom10a
      gen str10 ngo= "ADP"
50    save 10Awom, replace

      nica_ngo stisypmn 1 3 wom11a
      nica_ngo stisypmn 0 38 wom11b
      append using wom11a
      gen str10 ngo= "ADP"
55    save 11Awom, replace

      nica_ngo usecondo 0 51 wom12b
      gen str10 ngo= "ADP"
      save 12Awom, replace

59    nica_ngo obtcond 1 51 wom13a
60    nica_ngo obtcond 0 6 wom13b
      append using wom13a
      gen str10 ngo= "ADP"
      save 13Awom, replace
```

Program 2 is actually run by Program 3, which follows.

Program 3: ALLwomen.do

After Program 2 has been adapted for each universe and each NGO, the user can write/adapt Program 3. This program is divided into two sections, Parts A and B ("Creating appended data files for all variables" and "Calculating 95% unweighted and weighted confidence intervals for each variable," respectively). This program will:

- automatically run every **.do* file for, as an example, women for each NGO (created with Program 2).
- for each variable, create an appended file (*allwomen1.dta*) that includes every observation for all relevant NGOs aggregated together. Specifically, this **.dta* file will contain all the observations for each relevant NGO (correct and incorrect) for women for a single variable (in this example, variable '1').
- create a variable that allows the user to weight the data according to the population of the NGO catchment area population.
- save this appended **.dta* file.
- calculate *unweighted* and *weighted* confidence intervals for each variable.
- record these results on a log (**.txt*).

To adapt this program, the following steps must be performed:

PART A

1. line 1: do [program name]
   <<do womenADP.do>>
   This will automatically run Program 2 (from above) specifically for the NGO, ADP.
2. line 2-12: do [program name]
   <<do womenALISTAR.do>>
   ⇩
   ⇩
   ⇩
   <<do womenIXCHEN.do >>
   This will automatically run Program 2 (from above) specifically for each of the other NGOs included in the analysis.
3. line 13: use [data file name]
   <<use 1Awom.dta>>
   This opens *1Awom.dta*, the data set where all observations for variable 1 for the A[th] NGO. This data set was created in Program 2 in line 5.
4. line 14-23: append using [data file name for NGO B-K]
   <<append using 1Bwom>>
   <<append using 1Cwom>>
   ⇩
   ⇩
   ⇩
   <<append using 1Kwom>>
   This will append each of the datasets for a single variable (variable '1') for each NGO (B-K) to the data set already opened in line 13.
5. line 24: gen [weighted variable]=[ngo catchment area population] if NGO= =["NGO name"]
   <<gen ngopop=8132 if ngo=="ADP">>
   This creates a variable (*ngopop*) for the population of each NGO catchment area. The user will need to create a similar command line for each NGO using the correct population size and NGO name. The quotation marks around the NGO name are necessary.
6. line 25-35: replace [weighted variable]=[ngo catchment area population] if NGO= =["NGO name"]

```
<<replace ngopop=16563 if ngo=="ALISTAR">>
⇩
⇩
⇩
<<replace ngopop=33273 if ngo=="IXCHEN">>
```
This will continue to create the population values for each NGO in the analysis, but a new line will have to be written for each NGO in the analysis.

7. line 36: save [file name], replace
   ```
   <<save allwomen1.dta, replace>>
   ```
   This saves the appended data file in a new data file called *allwomen1.dta*, and overwrites any previously saved files with the same name. In this example the file name *allwomen1.dta* shows that these are data for the first variable (*pregdang*), for the all NGOs, for the universe "women."
8. line 37-60: for these lines repeat lines 13-36, but increment the variable number to 2. It is important to include each NGO that has data on a given variable. If an NGO did not collect data for variable '2' then exclude it. If an NGO was not included in the previous variable, but collected data for variable '2,' include that NGO.
9. line 61-83: these 23 lines of commands are the same as in the previous section, but now include variable '3.'
10. lines 84-305: continue the above mentioned process for the rest of the variables to be analyzed.

PART B

11. line 1: capture log close
    ```
    <<capture log close>>
    ```
    This command will close any open logs and open a new log-file. Stata uses *logs* to record data output. All commands run after this line will be recorded and saved.
12. line 2: log using [directory and log file name.txt], replace
    ```
    <<log using C:\"My Documents"\output\women_log.txt, replace>>
    ```
    This command saves the log in the specified directory. All log-files should be saved as **.txt*, allowing them to be opened, edited, emailed as Microsoft Word files. All previously saved **.txt* files with the same name (*women_log*) will be erased and written over.
13. line 3: use [data file name], clear
    ```
    <<use allwomen1.dta, clear>>
    ```
    This will open the appended **.dta* file (created in PART A) for variable '1.' This command will also clear any other open **.dta* files without saving.
14. line 4: ci [variable name]
    ```
    <<ci pregdang>>
    ```
    This will calculate the *unweighted* mean, standard error, and 95% confidence interval (Stata's default is 95%, see manual for more detail) for the specified variable (*pregdang*).
15. line 5: ci [variable name] [w=weighted variable]
    ```
    <<ci pregdang [w=ngopop]>>
    ```
    This will calculate the *weighted* mean, standard error, and 95% confidence interval for the specified variable (*pregdang*). The data is being weighted by the population size for each NGO's catchment area. Only those NGOs with data for the given variable will be included in this calculation.
16. line 6-8: repeat lines 3-5, but change commands for second data set (*allwomen2.dta*) and for the second variable (*delidang*).
17. line 9-41: repeats these commands for all other variables being analyzed.
18. line 42: capture log close
    ```
    <<capture log close>>
    ```
    This will close the saved log-file.

```
   **PART A**     **PART A**  **PART A**  **PART A**  **PART A**  **PART A**
***CREATING APPENDED DATA FILES FOR ALL VARIABLES FOR WOMEN 15-49, NOT
PREGNANT***

1     do womenADP.do
      do womenALISTAR.do
      do womenAMNLAE.do
      do womenCEPS.do
5     do womenCOMPANEROS.do
      do womenFUMEDNIC.do
      do womenFUNDEMUNI.do
      do womenFUNIC.do
      do womenFUNISDECI.do
10    do womenHABLEMOS.do
      do womenINPRHU.do
      do womenIXCHEN.do

      use 1Awom.dta
      append using 1Bwom
15    append using 1Cwom
      append using 1Dwom
      append using 1Ewom
      append using 1Fwom
      append using 1Gwom
20    append using 1Hwom
      append using 1Iwom
      append using 1Jwom
      append using 1Kwom
      gen ngopop=8132 if ngo=="ADP"
25    replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
30    replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
33    replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
35    replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen1.dta, replace

      use 2Awom.dta
      append using 2Bwom
      append using 2Cwom
40    append using 2Dwom
      append using 2Ewom
      append using 2Fwom
      append using 2Gwom
      append using 2Hwom
45    append using 2Iwom
      append using 2Jwom
      append using 2Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
50    replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
```

```
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
55    replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
60    save allwomen2.dta, replace

      use 3Awom.dta
      append using 3Bwom
      append using 3Cwom
      append using 3Dwom
65    append using 3Ewom
      append using 3Fwom
      append using 3Gwom
      append using 3Iwom
      append using 3Jwom
70    append using 3Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
75    replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
80    replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen3.dta, replace

      use 4Awom.dta
85    append using 4Bwom
      append using 4Cwom
87    append using 4Dwom
      append using 4Ewom
      append using 4Fwom
90    append using 4Gwom
      append using 4Iwom
      append using 4Jwom
      append using 4Kwom
      gen ngopop=8132 if ngo=="ADP"
95    replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
100   replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
105   replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen4.dta, replace
```

```
      use 5Awom.dta
      append using 5Cwom
      append using 5Dwom
110   append using 5Ewom
      append using 5Fwom
      append using 5Gwom
      append using 5Iwom
      append using 5Kwom
115   gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
120   replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
125   replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen5.dta, replace

      use 6Awom.dta
      append using 6Awom
130   append using 6Bwom
      append using 6Dwom
      append using 6Ewom
      append using 6Fwom
      append using 6Gwom
135   append using 6Hwom
      append using 6Iwom
      append using 6Jwom
      append using 6Kwom
      gen ngopop=8132 if ngo=="ADP"
140   replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
142   replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
145   replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
150   replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen6.dta, replace

      use 7Awom.dta
      append using 7Bwom
      append using 7Dwom
155   append using 7Ewom
      append using 7Fwom
      append using 7Gwom
      append using 7Hwom
      append using 7Iwom
160   append using 7Jwom
```

```
      append using 7Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
165   replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
170   replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen7.dta, replace

175   use 8Awom.dta
      append using 8Bwom
      append using 8Dwom
      append using 8Ewom
      append using 8Fwom
180   append using 8Gwom
      append using 8Hwom
      append using 8Iwom
      append using 8Jwom
      append using 8Kwom
185   gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
190   replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
195   replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
197   save allwomen8.dta, replace

      use 9Awom.dta
      append using 9Bwom
200   append using 9Dwom
      append using 9Ewom
      append using 9Gwom
      append using 9Hwom
      append using 9Iwom
205   append using 9Jwom
      append using 9Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
210   replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
215   replace ngopop=9101 if ngo=="FUNISDECI"
```

```
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen9.dta, replace

220   use 10Awom.dta
      append using 10Awom
      append using 10Bwom
      append using 10Dwom
      append using 10Ewom
225   append using 10Gwom
      append using 10Iwom
      append using 10Jwom
      append using 10Kwom
      gen ngopop=8132 if ngo=="ADP"
230   replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
235   replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
240   replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen10.dta, replace

      use 11Awom.dta
      append using 11Awom
      append using 11Bwom
245   append using 11Dwom
      append using 11Ewom
      append using 11Gwom
      append using 11Hwom
      append using 11Iwom
250   append using 11Jwom
251   append using 11Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
255   replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
260   replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen11.dta, replace

265   use 12Awom.dta
      append using 12Bwom
      append using 12Dwom
      append using 12Ewom
      append using 12Gwom
```

```
      append using 12Iwom
      append using 12Jwom
      append using 12Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen12.dta, replace

      use 13Awom.dta, clear
      append using 13Dwom
      append using 13Ewom
      append using 13Gwom
      append using 13Iwom
      append using 13Jwom
      append using 13Kwom
      gen ngopop=8132 if ngo=="ADP"
      replace ngopop=16563 if ngo=="ALISTAR"
      replace ngopop=13340 if ngo=="AMNLAE"
      replace ngopop=30400 if ngo=="CEPS"
      replace ngopop=19628 if ngo=="COMPANEROS"
      replace ngopop=10626 if ngo=="FUMEDNIC"
      replace ngopop=10385 if ngo=="FUNDEMUNI"
      replace ngopop=3945 if ngo=="FUNIC"
      replace ngopop=9101 if ngo=="FUNISDECI"
      replace ngopop=8095 if ngo=="HABLEMOS"
      replace ngopop=3335 if ngo=="INPRHU"
      replace ngopop=33273 if ngo=="IXCHEN"
      save allwomen13.dta, replace
      **PART B**  **PART B**  **PART B**  **PART B**  **PART B**  **PART B**
*ANALYSIS and CONFIDENCE INTERVALS
*SAVE LOG FILE

1     capture log close
      log using C:\ado\personal\output\women_log.txt, replace

      ***NICASALUD NGO BASELINE: WOMEN 15-49 YEARS, NOT PREGNANT***
      ***CALCULATING CONFIDENCE INTERVALS FOR EACH VARIABLE**
      ***UNWEIGHTED FOLLOWED BY WEIGHTED (BY NGO POPULATION SIZE)***

3     use allwomen1.dta, clear
      ci pregdang
5     ci pregdang [w=ngopop]

6     use allwomen2.dta, clear
      ci delidang
      ci delidang [w=ngopop]

      use allwomen3.dta, clear
```

```
10    ci postdang
      ci postdang [w=ngopop]

      use allwomen4.dta, clear
      ci placdang
      ci placdang [w=ngopop]

15    use allwomen5.dta, clear
      ci sickchld
      ci sickchld [w=ngopop]

      use allwomen6.dta, clear
      ci usingfp
20    ci usingfp [w=ngopop]

      use allwomen7.dta, clear
      ci knowfp
      ci knowfp [w=ngopop]

      use allwomen8.dta, clear
25    ci obtainfp
      ci obtainfp [w=ngopop]

      use allwomen9.dta, clear
      ci prvnthiv
      ci prvnthiv [w=ngopop]

30    use allwomen10.dta, clear
      ci othersti
      ci othersti [w=ngopop]

      use allwomen11.dta, clear
      ci stisypmn
35    ci stisypmn [w=ngopop]

      use allwomen12.dta, clear
      ci usecondo
38    ci usecondo [w=ngopop]

      use allwomen13.dta, clear
40    ci obtcond
      ci obtcond [w=ngopop]

42    capture log close
```

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