Additional File 1

The 10 indicators of ANC were constructed based on a selection of questions considering as criteria the interventions advocated by the Ministry of Health in the norms and legislation that regulate the ANC, using mainly the manuals "Basic Care Notebook-Low Risk Prenatal Care" and "Manual of Physical Structure of Primary Health Care Facility".

The Diagnostic Test indicator was made up of seven questions about the tests performed for antenatal care by the PHC team: Syphilis serology (VDRL), Fasting glucose, HIV serology, Hemoglobin and hematocrit, Urine culture, Serology test for hepatitis B and Serological examination for toxoplasmosis. The health profissional interviewed should have answered "yes" to each of the test, and aditionally, to get the results of pregnant women examinations in time for the necessary interventions to be considered adequate.

The maternal mortality is possible to decrease through the PHC interventions. For the High Risk indicator, the PHC team needed to answer "yes" to the three questions about pregnant women with some risk or vulnerability. These questions were referred to organize the service offers and referrals based on the classification of risk; have a record of the number of high-risk pregnant women in the territory; and attend to the complications or emergencies of them. In addition to these, the PHC team always had to have a document to prove each of these activities, and only then it was considered as adequate the indicator.

The pregnant women needs a set of medicines in order to treat or prevent some risk for the pregnancy. The medicines indicators was composed for eight groups of essential medicines: analgesic, antidiabetics, antibacterials, antihypertensive or cardiovascular action, antiparasitic, antiasthmatics, antacids and antiemetics, multivitamins. In each of these groups, the health facility had to have at least one medicine to be considered adequate, and also the PHC team had to to have answered "yes" for the question about the application of benzathine penicillin G in the facility.

The implementation of rapid tests represent an important intervention to improve antenatal care and reduce perinatal mortality. For the Rapid diagnostic tests, the PHC facility always should have had all the three rapid tests for syphilis, HIV and pregnancy to be considered as adequate. The welcoming spontaneous demand indicator was based on one question about the PHC team to consider the early enrollment of pregnant women in the protocol for accepting spontaneous demand. It was considered adequate when the health professional answered "yes" to this question.

In the case of procotols and patient flows indicator, the PHC team needs to have documents containing referral protocols and patient flows for the pregnant women for these situations: delivery (maternity ward), serological examination for syphilis (VDRL) and HIV, glicose exam, uroculture, ultrasound. When the health profissional responded positively to these six activities and had defined the maternity for delivery, the indicator was considered as adequate.

The follow-up activity is essential during the pregnancy, that is why for the Record keeping practices indicator, it was asked about the records of professional responsible for monitoring the pergnant women, dental consultation and collection of

cytopathological examination. To be considered adequate, the health professional should have answered "yes" to these three questions, and also to have a record of the pregnant women´s booklet, and to prove using this last document to monitor her.

The Program offer indicator was based on one question about the PHC team offers program directed to antenatal care. In the same way, for the therapeutic guidelines indicator was made one question about the team defines protocols and therapeutic guidelines for antenatal care. And finally, the Community outreach indicator refers to the community health worker identifies, during home visits, pregnant women that have missed appointments. Each of these indicators were considered adequate when the health profissional answered positively to each of them.

Table 1 Description of the variables used to constitute the indicators for antenatal care quality. PMAQ, 2011.

Indicator	Observed variables/questions	% Yes
Diagnostic tests	Syphilis serology (VDRL) tests are performed for antenatal care	98,0
	Fasting glucose tests are performed for antenatal care	97,7
	HIV serology are performed for antenatal care	97,7
	Hemoglobin and hematocrit test are performed for antenatal care	97,0
	Urine culture or urinaly-sis tests are performed for antenatal care	95,4
	Serology test for hepatitis B are performed for antenatal care	94,4
	Serological examination for toxoplasmosis are performed for antenatal care	92,8
	The PHC team gets the results of pregnant women examinations in time for the necessary interventions	73,3
High risk	The PHC team organizes the service offers and eferrals (consultations and tests) of pregnant women based on the assessment and classification of risk and vulnerability. There is a document to prove it	67,5
	The PHC team has a record of the number of high-risk pregnant women in the territory. There is a document to prove it	52,3
	The PHC team attends to the complications or emergencies of the high-risk pregnant woman. There is a document to prove it	47,8
Medicines	Analgesic	75,5
	Antidiabetics	47,7
	Antibacterials	75,4
	Antihypertensive or cardiovascular action	78,8
	Antiparasitic	71,2
	Antiasthmatics	73,3
	Antacids and Antiemetics	64,7
	Vitamins, multivitamins, minerals	75,6
	The application of benzathine penicillin G is performed at the facility	50,2
Rapid diagnostic tests	Rapid syphilis test	3,1
	Rapid HIV test	19,3
	Rapid pregnancy test	6,4
Welcoming spontaneous demand	The protocol for accepting spontaneous demand considers early enrollment of pregnant women	29,3
Protocols and patient flows	Defined referral protocols and patient flows: Delivery (maternity ward)	48,3
	Defined referral protocols and patient flows: Serological examination for syphilis (VDRL) in pregnant women	50,4
	Defined referral protocols and patient flows: Serological examination for HIV in pregnant women	50,7
	Defined referral protocols and patient flows: Glicose exam	49,4
	Defined referral protocols and patient flows: Uroculture or urine summary (type I urine)	48,7
	Defined referral protocols and patient flows: Ultrasound exam for pregnant women	50,9
	Pregnant women accompanied by the team has a defined maternity for delivery	82,8
Record keeping practices	In the monitoring of pregnant women, there is a record of: the professional responsible for monitoring the pregnancy	91,9
	In the monitoring of pregnant women, there is a record of: dental consultation	55,9
	In the monitoring of pregnant women, there is a record of: collection of cytopathological examination	73,9
	There is a copy / record of the pregnant women 's booklet, or another form with equivalent information, in the PHC facility	77,4
	The PHC team uses the pregnant women 's booklet to monitor pregnant women. There is a document to prove it	92,0
Program offer	Antenatal care is among the services provided to special interest groups	84,3
Therapeutic guidelines	The PHC team has defined protocols and therapeutic guidelines for antenatal care	74,9
Community outreach	During home visits, the CHW carries out community outreach to identify pregnant women that have missed appointments	93,6