

# Overall adequacy of antenatal care: Primary analysis of localized reproductive health survey data, in Basrah 2015.

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## Abstract

**Background:** Antenatal care is care that is given to a pregnant woman in order to attain best possible health outcome for her and her baby antenatal health services help to detect and treat pregnancy related complications which if untreated result in maternal morbidity and mortality.

**Objectives:** The general objective of the study was to establish factors that are associated to ANC attendance drop-out among pregnant women in Basrah district.

**Methods:** An epidemiological study cross-sectional study, of the current situation of antenatal care in Basrah governorate in form of record-banded amid to explore the adequacy of Antenatal Care (ANC) utilization of ever-married women. Cluster sampling was often clustered by geography carried out; the surveyed women over the period extending for three weeks in January 2015 record the information according to inquiry form design by Expand Immunization Program (EPI) unit in public health department in Basra governorate.

**Results:** Over two-thirds of pregnant women 76% have at least one ANC contact. Three-quarters of women in this survey made ANC visits in the 2nd trimester 746 of the surveyed women which represent about 49%, while 26% in 1st and 3rd trimester. The study revealed that the causation in variation of drop-out, out of 205 registration form prepared with predicted reasons for drop-out of the surveyed women found that about 64 (31%) due to busy family, 31 far away from the health facilities, 21 over crowded ANC while 26 for other reasons.

**Conclusion:** The goal of the ANC is to prepare for birth and parenthood as well as prevent, detect, alleviate, or manage the three types of health problems during pregnancy that affect mothers and babies preventing.

**Keyword:** Visits, Dropout, Cluster sampling, Basrah.

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## Introduction

ANC improves the survival and health of babies directly by reducing still births and neonatal deaths and indirectly by providing an entry point for health contacts with the woman at a key point in the continuum of care. A new analysis done for this publication using previously published methodology suggests that if 90% of women received ANC, up to 14% or 160,000 more newborn lives, could be saved. Compared with other components of maternal, newborn, and child health such as childbirth and postnatal care, the additional lives saved is fewer, partly because ANC already has relatively high coverage and saves many lives already, so the gap between current coverage and full coverage is smaller. However, the benefits of ANC are greater than mortality reduction alone, and given the relatively low cost of ANC, this package is among the most cost effective of any public health package [1,2].

ANC also provides women and their families with appropriate information and advice for a healthy pregnancy, safe childbirth, and postnatal recovery, including care of the newborn, promotion of early, exclusive breastfeeding, and assistance with deciding on future pregnancies in order to improve pregnancy outcomes. An effective ANC package depends on

competent health care providers in a functioning health system with referral services and adequate supplies and laboratory support [3].

Antenatal Care (ANC) achieve the full life-saving potential that ANC promises for women and babies, four visits providing essential evidence based interventions. Essential interventions in ANC include identification and management of obstetric complications such as preeclampsia, tetanus toxoid immunization, and identification and management of infections of Sexually Transmitted Infections (STIs). ANC is also an opportunity to promote the use of skilled attendance at birth and healthy behaviors such as breastfeeding, early postnatal care, and planning for optimal pregnancy spacing. Many of these opportunities continue to be missed, even though over two-thirds of pregnant women receive at least one antenatal visit [4].

## Problem

Good care during pregnancy is important for the health of the mother and the development of the unborn baby. Pregnancy is a crucial time to promote healthy behaviors and parenting skills. Good ANC links the woman and her family with the formal health system, increases the chance of using a skilled attendant

at birth and contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies. While research has demonstrated the benefits of ANC through improved health of mothers and babies, the exact components of ANC and what to do at what time have been matters of debate. In recent years, there has been a shift in thinking from the high risk approach to focused ANC. The high risk approach intended to classify pregnant women as “low risk” or “high risk” based on predetermined criteria and involved many ANC visits. This approach was hard to implement effectively since many women had at least one risk factor [5,6].

### ***Visit to ANC: How many?***

A recent multi-country randomized control trial led by the WHO and a systematic review showed that essential interventions can be provided over four visits at specified intervals, at least for healthy women with no underlying medical problems. The result of this review has prompted WHO to define a new model of ANC based on four goal-oriented visits. This model has been further defined by what is done in each visit, and is often called focused antenatal care.

The optimum number of ANC visits for limited resource settings depends not only on effectiveness, but also on costs and other barriers to ANC access and supply. A recent study from southern Tanzania found that health workers spent an average of 46 minutes providing focused ANC to a first time client, and 36 minutes for a revisiting client. This was thirty minutes more on average than the current practice and poses challenges for service delivery [7].

### ***When?***

The first ANC visit should be as early as possible in pregnancy, preferably in the first trimester. The last visit should be at around 37 weeks or near the expected date of birth to ensure that appropriate advice and care have been provided to prevent and manage problems such as multiple births (e.g. twins), post maturity (e.g. birth after 42 weeks of pregnancy, which carries an increased risk of fetal death), and abnormal positions of the baby (e.g. breech, where the baby’s head is not the presenting part at birth) [8].

### ***What!***

The first assessment in ANC is to distinguish pregnant women who require standard care, such as the four-visit model, from those requiring special attention and more visits.

### ***Immunization***

Vaccinations can help protect the pregnant and her baby from certain infections during pregnancy. Vaccinations during pregnancy help keep the baby safe from infection during the first few months of life until he gets his own vaccinations.

## ***The study objectives***

**This study was carried out to:**

- Study of the efficiency of ANC service for pregnant women in all districts of Basrha governorate.
- Study the average of pregnancy visit to ANC.
- Evaluation of immunity status.

## ***Methodology***

### ***Data collection***

The data for the present study, were derived from inquiry form design by were obtained (expand immunization program) EPI the study setting.

The study was conducted in Basrah governorate supervision by manager of Basrha health authority and the manager of public health department. It included all antenatal care in Basrah city centre (first and second sectors) and all districts in which achieve the full life-saving potential that ANC promises for women and babies [9].

### ***The study design***

A record-based cross-sectional study cluster sampling was often clustered by geography carried out; the surveyed women over the period extending for three weeks in January 2015 record the information according to inquiry form design by EPI (Expand Immunization Program) unit in public health department in Basrha governorate [10].

### ***The study period***

Data were collected over three weeks period unit in public health department in Basrha governorate which are were collected using a special questionnaire form prepared for the purpose of the study, training was done to the doctors the and managers of the districts who did the survey in PHD for 3 days.

Information derived for each surveyed women included the following: name, age, no. of pregnancy, no. of birth (life, dad), abortion, if she pregnant (which trimester) and no. of visit to ANC. In addition information about the immunization status and ask about the causes of non-visited to ANC according to special questionnaire form prepared for this purpose [11].

### ***Definition of variables***

**1. Age:** Age in years was grouped into six groups as follows:

Pregnant women: <20 years, 20-30, 30-40; More than 40 year  
2-mothers, 20-30, 30-40, More than 40 year

**2. Antenatal visit:** Four visits providing essential evidence based interventions.

**3. Place of residence:** This was divided into the following:

- Basrah city centre
- Abul-Alkhasib district

- Al-Qurna district
- Al-Mudaina district
- Al-Zubair district
- Shat-Al-Arab district
- Al-Hartha district

Causes of non-visited women according form which contains all reasons of non-visited pregnancy.

**4. Existence visit:**

- Yes
- No

**5. Tetanus toxoid immunization:**

- Mother had 3 dose and more
- Protective mother
- Less than 3 dose

**Analysis of data**

Data were entered into excel spreadsheet using Microsoft office 2007. The result of this study was presented in simple tables and graphs.

No.	Title
563	Pregnant
117	Mothers
680	Total

**Table 1.** The numbers of forms of pregnant women and mothers who visit the Antenatal Care (ANC) in Basrah governorate for the period in 2015.

No.	Age
102	<20 year
329	30-20
119	40-30
13	More than 40

**Table 2.** Age distribution of pregnant women.

No.	Age
11	<20 year
71	30-20
29	40-30
6	More than 40

**Table 3.** Age distribution of mothers.

A total of 680 form of surveyed women (pregnant and mothers) were reported to the health authorities in Basrah governorate during 2015, More than half about 517 of

**Results**

Table 1 shows the reported numbers of forms of pregnant women and mothers who visit the Antenatal Care (ANC) in Basrah governorate in 2015.

And Table 2 and Table 3 show the distribution of age to pregnant and mothers.

As can be seen from the tables, there was age variation and the reproductive age between 20-30 years and 30-40 years, and about 102 pregnant in age less than 20 year that critical age in which exposed too many risk factor during the period of pregnancy.

76% were using public health facilities and were satisfied with the provided services.

While 163 of the surveyed women had no use the heath care facilities in ANC which 23% of total surveyed women as in Table 4.

women had an antenatal care visit; the majority of surveyed women

Percentage	No.	Visit to ANC
76%	517	Visit
23%	163	Not visit
100%	680	Total

**Table 4.** Number of ANC visits.

Three-quarters of women in this survey made ANC visits in the 2nd trimester 746 of the surveyed women which represent

about 49%, while 26% in 1st and 3rd trimester. Table 5 show visit to ANC according to pregnancy stage.

Percentage	No. of visit	Trimester
26%	394	1st Trimester
49%	746	2nd Trimester
26%	393	3rd Trimester

**Table 5.** Number of ANC visits according to pregnancy stage.

### ***Exploring factors influencing ANC visit dropout***

Out of 205 registration form prepared with predicted reasons for drop-out of the surveyed women found that about 64 (31%)

due to busy family, 31 far away from the health facilities, 21 over crowded ANC while 26 for other reasons. Tables 6 and 7 shows the causation in variation of drop-out during survey.

No.	Reasons
31	Far away from ANC
21	Crowded
17	Limitation of visit days
2	Communication skills of health providers
2	Migrant
36	Careless of ANC
64	Busy family
4	Poverty
2	No marriage contract
26	Others
205	Total

**Table 6.** Factors influencing ANC visit dropout.

No.	Reasons
2	In adequate vaccination supply
3	Privet doctors
18	Thinking visit in 2nd trimester
1	Old age
3	Insufficient family doctors

**Table 7.** Other factors influencing ANC visit dropout.

### ***Immunization status***

Preventive measures, including tetanus toxoid immunization,

about 372 of surveyed mothers had 3 doses of tetanus toxoid vaccination out of 680 mothers, and 170 for productive

mothers who had a completed dose of vaccination which 5 does taken during pregnancy and motherhood. ANC services provide misses certain populations mass immunization of

women of childbearing age who presented about 138, Table 8 show the variation in immunity status.

No.	Doses
372	More than 3 doses
170	Protective mothers
138	Less than 3 doses

**Table 8.** Doses of tetanus toxoid vaccination of surveyed mothers.

The high coverage of ANC and repeated contacts between the woman and the health services offer many opportunities for providing evidence based interventions likely to affect maternal, fetal, and neonatal health and survival [12]. There is a large gap between a single antenatal visit and optimum ANC, which would require an opportunity to vaccinate pregnant women with the recommended two doses of tetanus toxoid vaccination. Where ANC coverage is low or follows up visits and several preventive interventions. If not effectively visit, and not get the vaccination or suppliants most of the conditions during pregnancy and may worsen pregnancy outcomes.

## Discussion

Good care during pregnancy is important for the health of the mother and the development of the unborn baby. Pregnancy is a crucial time to promote healthy behaviors and parenting skills. Good ANC links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth and contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies [5].

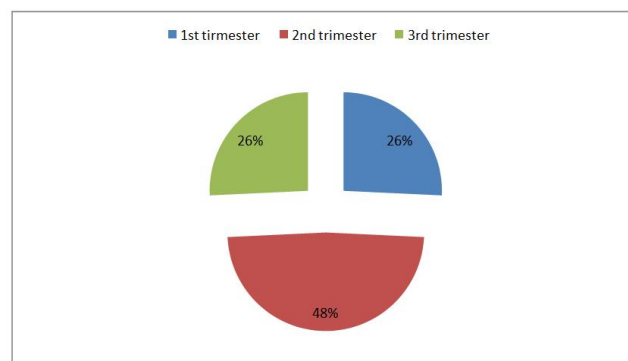
While research has demonstrated the benefits of ANC through improved health of mothers and babies, the exact components of ANC and what to do at what time have been matters of debate. In recent years, there has been a shift in thinking from the high risk approach to focused ANC. The high risk approach intended to classify pregnant women as “low risk” or “high risk” based on predetermined criteria [2]. In this survey there was age variation and the reproductive age between 20-30 years and 30-40 years, and about 102 pregnant in age less than 20 year, that critical age in which exposed to many risk factor during the period of pregnancy and involved many ANC visits [12].

This approach was hard to implement effectively since many women had at least one risk factor and not all developed complications; at the same time, some low risk women did develop complications, particularly during childbirth. Focused or goal oriented ANC services provide specific evidence-based interventions for all women, carried out at certain critical times in the pregnancy [7]. Throughout the studied period, surveyed women (pregnant and mothers) were reported to the health authorities in Basrah governorate districts during 2015, More

than half about 517 of women had an antenatal care visit; the majority of surveyed women 76% were using public health facilities and were satisfied with the provided services. While 163 of the surveyed women had no use the heath care facilities in ANC which 23% of total surveyed women?

A number of studies have shown the benefits of home-based ANC records, including the plan for birth and emergency preparedness [13]. Women who hold their own records are more likely to keep follow up appointments, ask questions about their health, and feel in control of their pregnancy [8]. In designing their own ANC records, countries should ensure that all essential information is, readily available to the caregiver. A prototype form is included in the new WHO model of ANC, together with the relevant information for implementing quality ANC services. The ANC record is part of a complete pregnancy record that covers childbirth and postnatal care as well as family planning [9].

Coverage of four or more ANC visits as well as the number of visits disaggregated by trimester is important to assess, because the effectiveness of certain ANC interventions such as tetanus vaccination, depend on repeated visits and the trimester in which they occur. In Africa, the proportion of pregnant women who attended the recommended four or more visits increased by six percent over 10 years. Similarly, the proportion of women who received ANC in the first six months of pregnancy increased by 10 percent over 10 years, faster than the increase of overall ANC coverage [14]. Whereas in the survey observe three-quarters of women made ANC visits in the 2nd trimester 746 of the surveyed women which represent about 49%, while 26% in 1st and 3rd trimester, as in Figure 1.



**Figure 1.** Percentage of trimester of surveyed women.

The role of the community, family and community involvement is crucial for healthy home behaviors during

pregnancy and has been shown to be a major determinant of use of ANC services. Establishing links between the community and the facility can increase utilization of services, including ANC, and impact maternal and neonatal mortality as well as stillbirths [15,16].

The male partner or the mother or mother in law should be welcome to attend an ANC session with the woman. Their support can help the woman follow the ANC recommendations, encourage shared decision making, and improve the health for both mother and newborn. Unsupported pregnant women, especially adolescents, need services that are specifically targeted to their needs. Service providers should do all they can to seek out women unable or unwilling to attend a clinic and take the services to them [17].

The survey manifest that Out of 205, 64 (31%) of surveyed women drop-out due to busy family, 31 far away from the health facilities, 21 over crowded ANC while 26 for other reasons, Figures 2 and 3 show the reasons of drop-out.

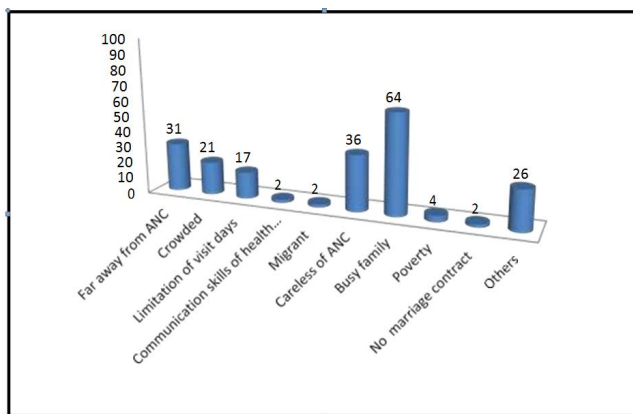


Figure 2. Show the reasons of drop-out.

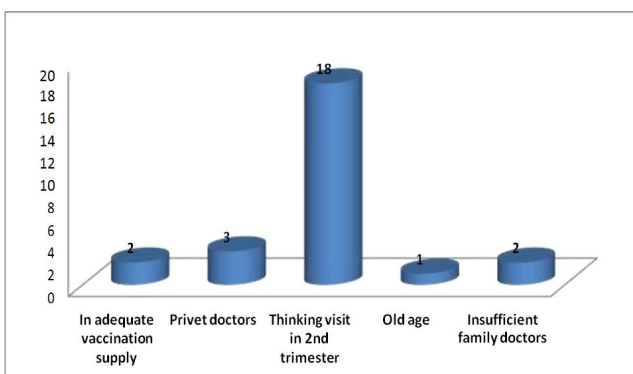


Figure 3. Show the other reasons of drop-out.

Health workers can play a key role by identifying all pregnant women in the community and provide counseling on healthy lifestyles, birth planning, complication readiness, and the need for ANC and skilled care at birth. This helps create links between the community and the healthcare system, and reinforcing these health messages can take some of the burden off service providers in ANC clinics [18].

### Prevention of maternal and neonatal tetanus

Tetanus kills an estimated 70,000 newborns in Africa every year (about six percent of all neonatal deaths) [18] and is the cause of an unknown number of maternal deaths each year. In Africa, neonatal tetanus deaths have been halved during the 1990's, partly due to increased tetanus toxoid immunization. Seven countries in sub-Saharan African have eliminated neonatal tetanus. ANC services provide an opportunity to vaccinate pregnant women with the recommended two doses of tetanus toxoid vaccination. Where ANC coverage is low [19], or misses certain populations mass immunization of women of childbearing age is an alternative option. The surveyed women in the study were had 3 doses of tetanus toxoid vaccination out of 680 mothers, Figure 4 show the doses of vaccination.

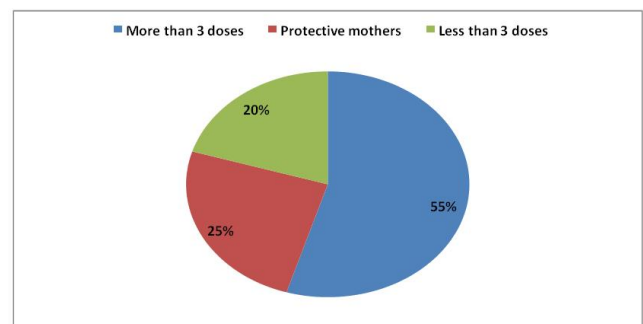


Figure 4. Show the doses of vaccination.

This survey showed that almost all of the studied women had 4 or more ANC visits and the percentages of women who had adequate use of ANC (including adequate number of ANC visits, early use of ANC and ANC provided by skilled provider) and sufficiency of ANC (including performing all ANC contents) were 76%. The effect of mother's age on adequacy of number of ANC visits is inconsistent across the literature. A study in Bangladesh found that lower age was a determinant for adequate number of ANC visits [16], while in another study, in India, higher age of mothers was associated with adequate number of ANC visits [17]. In our study, as in other studies from certain parts of India and Egypt [18,19], the mother's age was not a determining factor for adequate number of ANC visit Lower age of the mother was a determining factor for early ANC use. Similarly, in the Syrian Arab Republic found that mothers being years old correlated 20 less young with early attendance at ANC [6]. In contrast, age was not a significant factor for early ANC attendance analysis revealed that the percentage of women having an adequate number of ANC visits in Oman was comparable to or higher than some other countries of the gulf co-operation council and higher than other countries in the eastern Mediterranean region [9]. Being pregnant with the 1st baby was the only significant predictor for adequate use of ANC, sufficiency of ANC and overall adequacy of ANC visit (including both adequate use of ANC and sufficiency of ANC [20,21].

### Conclusion

There were some limitations to this study. Some data were not covered in detail in survey, such as health education provided,

supplementation, and socio demographic factors of surveyed women. Recall bias could be another limitation; however, we tried to reduce this bias by including records of women having only children less than 5 years old in this analysis.

## References

1. [http://www.unicef.org/about/execboard/files/Oman\\_final\\_approved\\_2012-2015\\_20\\_Oct\\_2011](http://www.unicef.org/about/execboard/files/Oman_final_approved_2012-2015_20_Oct_2011)
2. Adhra Hilal N, Ahmed Mohamed AQ, Sultana Mohamed SA, et al. Oman vision 2050 for health research: A strategic plan for the future based on the past and present experience. *Oman Med J* 2010; 32(2): 86–96.
3. Simkhada B, Teijlingen ER, Porter M, et al. Factors affecting the utilization of antenatal care in developing countries: Systematic review of the literature. *J Adv Nurs* 2008 Feb; 61(3): 244–60.
4. Gupta A, Chhabra P, Kannan AT, et al. Determinants of utilization pattern of antenatal and delivery services in an urbanized village of East Delhi. *Indian J Prev Soc Med* 2010; 41(4): 35–240.
5. Farahat T, Esam M, Alkot M, et al. Determinants of antenatal care utilization in Menofia governorate, Egypt. *Egypt J Community Med* 2012; 30(1): 1–10.
6. Sein KK. Maternal health care utilization among ever married youths in Kyimyindaing town ship, Myanmar. *Matern Child Health J* 2012; 16(5): 1021–30.
7. Fotso JC, Ezech A, Oronje R. Provision and use of maternal health services among urban poor women in Kenya: What do we know and what can we do? *J Urban Health* 2008; 85(3): 428–42.
8. Singh PK, Rai RK, Alagarajan M, et al. Determinants of maternity care services utilization among married adolescents in rural India. *PLoS One*. 2012; 7(2): e31666.
9. Alshishtawy MM. Four decades of progress: Evolution of the health system in Oman. *Sultan Qaboos Univ Med J* 2010; 10(1): 12– 22.
10. Andrea BP, Anders C, David PU, et al. Antenatal care in rural Tanzania: Counseling on pregnancy danger signs. *BMC Pregnancy Childbirth* 2010; 1(10): 35–41.
11. Islam MR, Odland JO. Determinants of antenatal and postnatal care visits among Indigenous people in Bangladesh: A study of the Mru community. *Rural Remote Health* 2011;11(2):1672–83.
12. Roy MP, Mohan U, Singh SK, et al. Determinants of utilization of antenatal care services in rural Lucknow, India. *J Family Med Prim Care* 2013; 2(1): 55–9.
13. Gupta A, Chhabra P, Kannan AT, et al. Determinants of utilization pattern of antenatal and delivery services in an urbanized village of East Delhi. *Indian J Prev Soc Med* 2010; 41(3.5): 4-15.
14. Farahat T, Esam M, Alkot M, et al. Determinants of antenatal care utilization in Menofia Governorate, Egypt. *Egypt J Community Med* 2012; 30(1): 1–10.
15. Sein KK. Maternal health care utilization among ever married youths in Kyimyindain township, Myanmar. *Matern Child Health J* 2012; 16(5): 1021–30.
16. Fotso JC, Ezech A, Oronje R. Provision and use of maternal health services among urban poor women in Kenya: What do we know and what can we do? *J Urban Health* 2008; 85(3): 428–42.
17. Singh PK, Rai RK, Alagarajan M, et al. Determinants of maternity care services utilization among married adolescents in rural India. *PLoS One* 2012; 7(2): e31666.
18. Alshishtawy MM. Four decades of progress: Evolution of the health system in Oman. *Sultan Qaboos Univ Med J* 2010; 10(1): 12–22.
19. Bassani DG, Surkan PJ, Olinto MT. Inadequate use of prenatal services among Brazilian women: The role of maternal characteristics. *Int Perspect Sex Reprod Health* 2009; 35(1): 15–20.
20. Kim HG, Mandell M, Crandall C, et al. Antenatal psychiatric illness and adequacy of prenatal care in an ethnically diverse inner-city obstetric population. *Arch Womens Ment Health* 2006; 9(2): 103– 7.
21. [http://www.who.int/gho/publications/world\\_health\\_statistics/EN\\_WHS20\\_13\\_Full.pdf](http://www.who.int/gho/publications/world_health_statistics/EN_WHS20_13_Full.pdf)

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