ASSESSMENT OF POST-ABORTION CARE SERVICES IN PUBLIC HEALTH FACILITIES IN BAUCHI STATE

BY

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DECLARATION

I hereby declare that this research entitled "Assessment of Post-abortion care in Public Health facilities in Bauchi State" was conducted and written by me under the supervision of Dr A.U. Shehu and has not been previously presented by any person in any institution for application of any degree. The work of other investigators referred in the research was acknowledged appropriately according to the rules of academic research.

Hassan, Sani Bala **Date**

CERTIFICATION

This thesis entitled "ASSESSMENT OF POST-ABORTION CARE SERVICES IN PUBLIC HEALTH FACILITIES IN BAUCHI STATE" by HASSAN, Sani Bala meets the regulations governing the award of the degree of Master in Public Health of Ahmadu Bello University, Zaria and is approved for the contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to my late brother Engineer Ali Bala Hassan may his soul rest in peace.

ACKNOWLEDGEMENT

I will like to start by thanking Allah almighty for seeing me through this project. I appreciate tremendously the efforts of my parents in assisting and guiding me.

Special thanks go to my able supervisor Dr. A.U. Shehu for his scholarly guidance, openness and generosity. My appreciation also goes out to Dr. S.H. Idris and all my lecturers for imparting this life changing knowledge on me.

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SUMMARY

Worldwide, an estimated five million women are hospitalized each year for treatment of abortion-related complications, such as hemorrhage and sepsis. Almost all abortion-related deaths occur in developing countries.[2]These deaths are highest in Africa, where there were an estimated 650 deaths per 100,000 unsafe abortions in 2003, compared with 10 per 100,000 in developed regions. African women suffer the world's highest abortion related deaths estimated at 680 deaths per 100,000 abortions, compared to 330 deaths per 100,000 abortions in the rest of the developing world. Complications of abortion are one of the major causes of maternal mortality in Nigeria, causing the death of women in thousands annually.

Comprehensive Post-abortion care (PAC) services are obtainable only at tertiary health care centers and to some extent, at secondary care level in most States in Northern Nigeria. However, recently several Non-governmental organizations (NGOs), both local and international are involved in the provision of PAC services in rural and urban communities more especially in health facilities in such areas. The availability, accessibility and affordability of such services in such facilities especially in the rural areas is unclear to many concerned individuals and groups some of whom are calling for the expansion of PAC services especially in the primary and secondary levels of care.

For about a decade now the Bauchi state government, several NGOs both international and local are involved in provision of post-abortion care services in Bauchi state but the maternal mortality (presently at 1549 deaths/100,000 livebirths[5]) and morbidity in the state remain high. It is a well-known fact the post-abortion complications are one of the major causes of maternal death especially in the rural areas, therefore its availability, accessibility and affordability in all health facilities in Bauchi state cannot be overemphasized.

The study is a facility based descriptive cross sectional survey designed to assess the availability of post abortion care services at both public secondary and primary health facilities in rural and urban areas of Bauchi state using quantitative methods; interviewer-administered questionnaire (for providers and managers) and a facility checklist.

In addition, the study also determined the knowledge of providers and managers regarding post abortion care.

A total of eighteen (18) public health facilities located within Bauchi state were surveyed using multistage sampling method. Nine (9) facilities were secondary while the remaining nine (9) were primary health facilities. Only primary health centers and maternities that offered ANC, Delivery, post-natal and FP services were included in the survey. Health posts, dispensaries and Health clinics were excluded. The study populations were, Facility health care providers, Managers of Health facilities, Public primary and secondary health-care facilities in Bauchi State.

Quantitative data was collected in this study using three (3) structured questionnaires. Quantitative Data collected were analyzed with the aid of computer Microsoft Excel version 2007.

All the Secondary Health Care (SHC) facilities surveyed provided PAC services 24hours a day, only four (4) that was 44% of the Primary Health Care (PHC) facilities provided the service 24hrs a day. PAC services were free in 89% of the SHC facilities as against 33% in the PHC facilities. Paucity of staff to provide PAC services was a challenge in all the facilities. Intra-facility contraceptive referral arrangement was poor (11%) in PHC facilities. Sexually Transmitted Infections (STI) risk analysis was virtually lacking (72%) in all facilities.

PAC services were provided by only CHEWs in 33% of the PHC facilities surveyed, while in 67% of such facilities midwives, Nurses and CHEWs provided same service to clients.

Majority (56%) of PHC facilities had challenges with logistic system for ordering and storage of drugs and were also lacking in locked storage area (56%) for medical supplies.

Only 39% of the facilities surveyed had adequate records for abortion cases and the PHC facilities were more affected with only 22% of such facilities with such records. Service delivery protocols and guidelines for PAC were absent (0%) in PHC facilities and only available in 22% of the SHC facilities surveyed, the same applied to availability for MVA log book.

Cost of managing first trimester incomplete abortion was free in 45% of the facilities surveyed. The cost was as low as three hundred naira (₦300) in 6% of the facilities.

Regarding awareness and Knowledge of PAC among Healthcare Providers in the surveyed facilities, one hundred and eight (108) healthcare providers were approached in the survey and out of that number, One hundred and five (105) respondents were interviewed, three (3) declined, which gave a response rate of ninety-seven percent (97%). The ages of the respondents ranged from 18 years to 52 years with an average of 31years. Almost all the respondents (85%) were female with only a few (15%) males. About halve (47%) of the respondents were Nurse/Midwives followed by Community Health Extension Workers (CHEWs) that made up 41% while 12% were medical doctors.

Of the total of forty-nine (49) midwives /Nurses working in the maternity, family planning and labour wards interviewed almost all (98%) were aware of PAC but only 51% of the CHEWs were aware. Of all the Nurse/Midwives, only 30% knew that all modern contraceptive methods can be used (assuming there are no contra-indications) for post-abortion FP, while only 16% of the CHEWs had that knowledge.

Knowledge of the number of elements of PAC was below average in all the three cadres of healthcare providers, Doctors (39%) and Nurse/Midwives (27%) and CHEWs (7%).

In view of the above findings it is highly recommended that the Bauchi state MOH, PHCDA and Developmental partners should provide the entire comprehensive PAC package, including family planning counseling and method provision and choice at both PHC and SHC facilities to reduce maternal morbidity and mortality in the State and country as a whole.

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LIST OF ACRONYMS

AIDS	-	Acquired Immune Deficiency Syndrome
ANC	-	Ante-Natal Care
AVSC	-	Association for Voluntary Surgical Contraception
BSMOH	-	Bauchi State Ministry of Health
BSPHCDA	-	Bauchi State Primary Health Care Development Agency
CFA	-	Client Flow Analysis
CHEW	-	Community Health Extension Worker
COC	-	Combined Oral Contraceptive
D&C	-	Dilatation and Curettage
EOC	-	Emergency Obstetrics Care
FP	-	Family Planning
GH	-	General Hospital
HIV	-	Human Immunodeficiency Virus
ICPD	-	International Conference on Population and Development
IEC	-	Information Education Communication
IUD/IUCD	-	Intra-Uterine Device/Intra-Uterine Contraceptive Device
KM	-	Kilometer
LGA	-	Local Government Area
MCH	-	Maternal and Child Health
MDG	-	Millennium Development Goal
MPH	-	Master of Public Health
MIS	-	Management Information System
MSH	-	Management Service for Health
MVA	-	Manual Vacuum Aspiration

NFP	-	Natural Family Planning
NGO	-	Non-Governmental Organization
PAC	-	Post Abortion Care
PHC	-	Primary Health Care
PREMONA	-	Project for the Reduction of Maternal Mortality
PRIME	-	Program for Improving Mental health care
RH	-	Reproductive Health
RTI	-	Reproductive Tract Infection
SHC	-	Secondary Health Care
STD	-	Sexually Transmitted Diseases
STI	-	Sexual Transmitted Infections
UNFPA	-	United Nation Fund for Population Activities
USAID	-	United State Agency for International Development
WHO	-	World Health Organization

CHAPTER ONE

INTRODUCTION

The term "abortion" refers to the termination of pregnancy from whatever cause before the fetus is capable of extra-uterine life. "Spontaneous abortion" refers to those terminated pregnancies that occur without deliberate measures, whereas "induced abortion" refers to termination of pregnancy through a deliberate intervention intended to end the pregnancy.[1] Estimates are that at least 15% of all pregnancies end in spontaneous abortion[1]and, according to World Health Organization estimates, up to 15% of pregnancy-related mortality worldwide is due to abortion.

A woman's fertility can return quickly following an abortion from as early as two weeks. This may leave a lot of women with unmet need for family planning and the risk of another unintended pregnancy and in some cases subsequent repeated abortion.[2] Moreover, in many settings, women who have an abortion rarely leave the health facility "armed with the knowledge and the means to avoid repeating the process of unprotected intercourse and unwanted pregnancy". Most post-abortion cases admitted to public sector hospitals receive only the emergency care component of the case management, and are usually discharged from hospitals without adequate family planning counseling.

Women who have had an abortion and who risk future unwanted pregnancies represent an important group whose family planning needs remain unmet in many developing countries. To reduce this risk, it is vital to provide a comprehensive package of post-abortion care (PAC) services that includes both medical and preventive healthcare. The key elements of post-abortion care are: emergency treatment of incomplete abortion and potentially life-threatening complications, post-abortion family planning counseling and services, links between post-abortion emergency services and other priority reproductive healthcare services and community support and mobilization.[1]

Facilities that can effectively treat women with incomplete abortions can also provide contraceptive services, including counseling and access to appropriate methods. Appropriate pre-discharge contraception can be provided in conjunction with all emergency procedures including inpatient and outpatient dilation and curettage (D&C) and manual or electric vacuum aspiration. Any provider who can treat incomplete abortion can also provide most family planning methods.[1]

When programs provide family planning methods to post-abortion clients at the time of treatment, clients, providers, and programs all benefit. However, there are a number of factors that limit provision of family planning services to women who have experienced an abortion. These factors, which increase a woman's risk of repeated unwanted pregnancies, include: lack of understanding of and attention to women's reproductive health needs on the part of health providers, separation of emergency post-abortion care services and family planning services, and misinformation among providers about appropriate post-abortion contraceptive methods.[1]

Each year, an estimated 210 million women become pregnant. Worldwide more than one fourth of these pregnancies end up in either abortion or an unplanned birth. Fifteen percent of pregnancies end up in miscarriage. An estimate of 46 million pregnancies end up in induced abortions annually and 20 million of this are unsafe, performed by poorly skilled people in unsanitary environments. Abortion complications such as excessive bleeding and infections are common and account for an estimated 13% of maternal deaths worldwide, which is about 67,000 deaths per year.[1]

Worldwide, an estimated five million women are hospitalized each year for treatment of abortion-related complications, such as hemorrhage and sepsis. Almost all abortion-related deaths occur in developing countries.[2]These deaths are highest in Africa, where

there were an estimated 650 deaths per 100,000 unsafe abortions in 2003, compared with 10 per 100,000 in developed regions. African women suffer the world's highest abortion related deaths[3] estimated at 680 deaths per 100,000 abortions, compared to 330 deaths per 100,000 abortions in the rest of the developing world.[4] Consequences of unsafe abortion include loss of productivity, economic burden on public health systems, stigma and long-term health problems, such as infertility.

The concept of post abortion care (PAC) emerged in 1993. It is a strategy developed by the PAC Consortium agencies, a group of Non-governmental organization working in the field of reproductive health all over the world. It is a strategy to combat the problem of maternal death following abortions and this is achieved by prompt treatment of women with complications of abortion (like hemorrhage, sepsis, cervical lacerations, perforations of internal organs etc), providing post-abortion family planning services to prevent future abortions, contraceptive counseling and supplies, follow up and referral to other reproductive health services and engaging communities.[2]

1.1 Statement of the Problem

Complications of abortion are one of the major causes of maternal mortality in Nigeria, causing the death of women in thousands annually. Besides the restrictive abortion laws in the country (which allow termination of pregnancy only to save the mother's life), other causes of high prevalence of abortion and by extension its complications secondary to unsafe abortion include stigma, shame, illiteracy, lack to access to comprehensive post abortion care services (especially at the primary and secondary levels of care), unmet need for family planning, unfriendly attitude of healthcare providers, untrained health personnel and lack of political commitment to mention a few.

Comprehensive PAC services are obtainable only at tertiary health care centers and to some extent, at secondary care level in most States in Northern Nigeria. However, recently several NGOs, both local and international are involved in the provision of PAC services in rural and urban communities more especially in health facilities in such areas. The availability, accessibility and affordability of such services in such facilities especially in the rural areas is unclear to many concerned individuals and groups some of whom are calling for the expansion of PAC services especially in the primary and secondary levels of care.

Because of the poor state of primary health care, most cases of abortion complications are referred to the secondary care health facilities, which are expected to handle almost all the complications referring only few to the tertiary centers and to private facilities in few instances. But, in order to meet the target of goal number 5 of the MD by the year 2015, comprehensive PAC services should be made available at the lowest level of care in the rural communities.

1.2 Justification

This study is designed to assess the current state of post-abortion services at both public secondary and primary health facilities in rural and urban areas of Bauchi State. In addition, the study will determine availability P.A.C service at the health facilities, the knowledge of providers and managers regarding post abortion care. The study will also review essential equipment and commodities for PAC and organization of services and level of staffing in the selected health facilities.

The special package, post abortion care (PAC) saves the life of women if it is integrated into health care programs at the primary and secondary health care levels. It will increase access and reduced cost to the rural populace who most times do not have the financial

capability to afford such care at tertiary and private health outfits. For about a decade now the Bauchi state government, several NGOs both international and local are involved in provision of post-abortion care services in Bauchi state but the maternal mortality (presently at 1549 deaths/100,000 live births)[5] and morbidity in the state remain high. It is a well-known fact the post-abortion complications are one of the major causes of maternal death especially in the rural areas, therefore its availability, accessibility and affordability in all health facilities in Bauchi state cannot be overemphasized.

1.3 Objectives

1.3.1 General objective

The aim of this study is to assess the current Post Abortion Care (PAC) services provided in 18 randomly selected public health facilities in Bauchi State.

1.3.2 Specific objectives

1. Assess the availability of post abortion care (PAC) services at primary and secondary public healthcare facilities.
2. Assess the availability of basic equipment required for the provision of PAC services and use of MVA by service providers in the management of first trimester incomplete abortion.
3. To assess the awareness and knowledge of healthcare providers and managers of selected Heath facilities regarding post-abortion care.
4. To determine the average number of patients that sought for post-abortion care services at the facilities between January to December 2010 and the average cost of management of first trimester incomplete abortion in public health facilities in Bauchi State.
5. To proffer recommendations for the provision of comprehensive PAC services in all primary and secondary health facilities in the state.

CHAPTER TWO

LITERATURE REVIEW

Year after year, millions of pregnancies end in abortions, some spontaneously while others are induced. Induced abortion has been in existence for a very long time, but it has been surrounded by an atmosphere of taboo and societal discrimination, that in many countries, especially developing countries, it occurs underground. To bring down the number of cases of induced abortions and its associated complications, efforts have to be made to reduce the incidence of unsafe abortions.

2.1 Definition of Unsafe Abortion

According to the World Health Organization (WHO), every 8 minutes a woman in a developing nation will die of complications arising from an unsafe abortion[5]. The organization defined unsafe abortion as "a procedure for terminating an unwanted pregnancy done by persons who may lack the necessary skills or conducted in an environment that lacks the minimal medical standards, or both".[5] Unsafe abortions may be performed by the woman herself, by non-medical persons, or by health workers in unhygienic conditions. Such abortions may be induced by the insertion of a solid object (usually root, twig or catheter) into the uterus, by improperly performed dilatation and curettage procedure, the ingestion of harmful substances or exertion of external force.[5]

The fifth United Nations Millennium Development Goal recommends a 2/3 reduction in maternal mortality by 2015. The World Health Organization (WHO) deems unsafe abortion one of the easiest preventable causes of maternal mortality.[5]

In the 1994 ICPD, governments agreed that "in no case should abortion be promoted as a method of family planning". The Cairo Plan of Action urged all governments and relevant inter-governmental and nongovernmental organizations to strengthen their commitment to women's health to deal with the health impact of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded and improved family planning. Prevention of unwanted pregnancies must always be given the highest priority and every attempt must be made to eliminate the need for abortion.[6] Women who have unwanted pregnancies should have ready access to reliable information and compassionate counseling. Any measures or changes related to abortion within the health system can only be determined at the national or local level according to the national legislative process. In circumstances where abortion is not against the law, such abortion should be made safe and accessible to women. Information on methods to be used and location of health facilities should be disseminated. In all cases, women should have access to quality services for the management of complications arising from abortion. Post-abortion counseling, education and family planning services should be offered promptly, which will also help to avoid repeat abortions. Dr. Forest Greenslade[7] of IPAS recommends education of the health staff and continuous advocacy to professional communities, donor agencies and country partners to effectively address unsafe abortion. He further made the following recommendations:

1. Describe the problem of unsafe abortion accurately and consistently. Use language that highlights the public health nature of unsafe abortion, rather than concentrate on the sensitivity that surrounds the issue.

2. Make use of existing technical resources as you begin programming to avoid "recreating the wheel". WHO recommends MVA as a cost effective method. This should be supported by donors in terms of equipment provision.
3. Look past the clinical moment and make the provision of abortion care a comprehensive reproductive health experience. Women who seek assistance for abortion-related problems are not likely to be common users of health services and may not be willing or able to return for other care.[7]

2.2 Scope of the Problem

Although contraceptive prevalence rates have increased dramatically in some countries in the last three decades, women who resort to unauthorized facilities and/or unskilled providers are still putting their health and lives at risk. This is more so common in developing countries. Among the causes of maternal mortality in developing countries, unsafe abortion accounts for 13% of maternal deaths. Worldwide, it is estimated that around 53 million abortions are performed every year.[1,8]

With 140 million births a year, approximately one induced abortion takes place for every three births. Around 30 million or about 90% of the abortions take place in developing countries and 20 million of these are performed under unsafe conditions.[6] In Western nations, only 3% of abortions are unsafe, whereas in developing nations 55% are unsafe. The highest incidences of abortions that are unsafe occur in Latin America, Africa, and South East Asia.[6]In a recent five-year period study, at least 86% of all induced abortions in Latin America and 96% performed in Africa were unsafe.

In 2008, unsafe abortions accounted for an estimated 47,000 maternal deaths, down from 69,000 in 1990. Globally, the unsafe-abortion mortality ratio has declined from 50 in 1990

to 30 in 2008. The overall burden of unsafe abortion mortality continues to be the highest in Africa.[7]

More than 120 million women in developing countries who want to practice family planning fail to do so, which may contribute to the number of induced abortions. Abortions performed by qualified persons using correct techniques and under sanitary conditions, as well as spontaneous abortions, are rarely fatal and seldom present complications. However, the risk of death following complications of unsafe abortion procedures in developing countries is 1 in 250 procedures as against 1 in 3,750 procedures in developed countries.[9] In Asia, 9,900;000 unsafe abortions occur every year with 500,000 in Western Asia. The incidence rate is 27 per 1000 women (15 to 49 years old), and the incidence ratio is 13 per 100 live births. The estimated number of deaths is 38,500 with a mortality ratio of 46/100,000 live births. Twelve percent of maternal deaths are due to unsafe abortion. For the Oceania region, the incidence ratio is 12/100 with a mortality ratio of 51/100,000 live births which account for 8% of the causes of maternal deaths.[9]

Those abortions that are unsafe and performed by untrained practitioners working in unhygienic conditions are responsible for between 50,000 and 100,000 preventable deaths of women each year.[10].The high number of women who resort to unsafe abortion is a powerful reminder that women need access to a wide range of family planning methods to help them safely control their own fertility.[11] The fact that so many women risk death, injury, and social or criminal consequences to terminate a pregnancy demonstrates clearly how desperately these women wish to delay or avoid having children. Many who have unsafe abortion procedures suffer complications and must go to a hospital or other facility for treatment. These women rarely leave the hospital armed with the knowledge and the means to avoid repeating the process of unprotected intercourse, unwanted pregnancy, and unsafe abortion that so often ends in death, injury, or long-term morbidity.[11]

Women who have undergone abortion and are at risk of another unwanted pregnancy represent an important group with unmet family planning needs. While other high-risk groups of women have been the focus of family planning programmes, there are few examples of successful attempts to reach women treated for complications of unsafe abortion. In addition, although significant advances in the availability of family planning services have been made in recent decades, there are still many areas where services are only marginally available to the community at large. These services are often of low quality and are not designed and delivered in a way that responds to the interests and needs of the women and men who use them.[10]

Even safe abortion in developing nations carries risks that depend on the health facility, the skill of the provider, and the gestational age of the fetus. With unsafe abortion, the additional risks of maternal morbidity and mortality depend on what method of abortion is used, as well as on women's readiness to seek post-abortion care, the quality of the facility they reach, and the qualifications (and tolerance) of the health provider.[12-14]

2.3 Health Consequences

Worldwide, some 5 million women are hospitalized each year for treatment of abortion-related complications such as hemorrhage and sepsis, and abortion-related deaths leave 220,000 children motherless.[15]The main causes of death from unsafe abortion are hemorrhage, infection, sepsis, genital trauma, and necrotic bowel. Data on non-fatal long-term health complications are poor, but those documented include poor wound healing, infertility, consequences of internal organ injury (urinary and stool incontinence from vesico-vaginal or recto-vaginal fistulas), and bowel resections. Other immeasurable consequences of unsafe abortion include loss of productivity and psychological damage.

The burden of unsafe abortion lies not only with the women and families, but also with the public health system. Every woman admitted for emergency post-abortion care may require blood products, antibiotics, oxytocics, anesthesia, operating rooms, and surgical specialists. The financial and logistic impact of emergency care can overwhelm a health system and can prevent attention to be administered to other patients.[12]

2.4 Relationship between Unsafe Abortion and Abortion Law

Nations may allow abortions based on saving the mother's life, preserving physical and mental health, and socioeconomic grounds, or may be completely unrestrictive. Data indicate an association between unsafe abortion and restrictive abortion laws. The median rate of unsafe abortions in the 82 countries with the most restrictive abortion laws is up to 23 of 1000 women compared with 2 of 1000 in nations that allow abortions.[14] Abortion-related deaths are more frequent in countries with more restrictive abortion laws (34 deaths per 100,000 childbirths) than in countries with less restrictive laws (1 or fewer per 100,000 childbirths).[15]

The same correlation appears when a given country tightens or relaxes its abortion law. In Romania, for example, where abortion was available upon request until 1966, the abortion mortality ratio was 20 per 100,000 live births in 1960. New legal restrictions were imposed in 1966, and by 1989 the ratio reached 148 deaths per 100,000 live births. The restrictions were reversed in 1989, and within a year the ratio dropped to 68 of 100,000 live births; by 2002 it was as low as 9 deaths per 100,000 births. Similarly, in South Africa, after abortion became legal and available on request in 1997, abortion-related infection decreased by 52%, and the abortion mortality ratio from 1998 to 2001 dropped by 91% from its 1994 level.[16]

Less restrictive abortion laws do not appear to entail more abortions.[15,16]The world's lowest abortion rates are in Europe, where abortion is legal and widely available and contraceptive use is high; in Belgium, Germany, and the Netherlands, the rate is below 10 per 1000 women aged 15 to 44 years. In contrast, in Africa, Latin America, and the Caribbean, where abortion laws are the most restrictive and contraceptive use is lower, the rates range from the 20 to 39 per 1000 women.[11]

However, less restrictive abortion laws also do not guarantee safe abortions for those in need; better education and access to health care are also required. In India for instance, unsafe illegal abortions persist despite India's passage of the Medical Termination of Pregnancy Act in the early 1970s. The act appeared to remove legal hindrances to terminating pregnancies in the under funded (national) health care system, but women still turn to unqualified local providers for abortion. Clearly, the implications of the law never reached the population that most needed to rely on it.[17] This example is also seen in Cambodia, where abortion is legally available on request and women often attempt to abort themselves before turning to hospital.[18]

2.5 Lack of Contraception Access and Use

More than one-third of all pregnancies are unintended, and 1 in 5 ends in abortion.[19]In developing countries, two-thirds of unintended pregnancies occur among women who were not using any method of contraception.[19] Greater contraceptive access and use alone can thus drastically reduce safe and unsafe abortion by reducing unintended pregnancies. In the Russian Federation, abortion rates sharply declined with the advent of modern contraceptive technologies.[20]

Obstacles to increased contraceptive access and use include religious objections, lack of awareness of the availability of contraceptive methods, concerns about possible health

risks and side effects, and the mistaken belief that one cannot or will not become pregnant. Contraceptive use must also be regular to be effective: the average woman must use some form of effective contraception for at least 16 years to limit her family to 4 children, and for 20 years to limit it to 2 children.[21]

A study carried out in Turkey to describe the impact of post-abortion family planning counseling in bringing about contraceptive usage in women who had induced abortion clearly demonstrate the role played by post-abortion family planning counseling (one of the elements of PAC) in increasing the uptake of family planning after an abortion. In that study, 55.3% of the women did not use any contraceptive method although the contraceptives are available in all primary health care centers and maternity hospitals in but at the end of one year, 75.9% of the women followed were using one of the modern contraceptive methods. Contraceptive usage was increased 36.3% for total contraceptives and 62.0% for modern methods. The use of post-abortion family planning significantly decreased the post-abortion pregnancy rate.[22]

2.6 Origins of Post-abortion Care

The term "post-abortion care" was first articulated as a critical element of women's health initiatives in IPAS's 1991 strategic planning document, which encouraged "the integration of post-abortion care and family planning services in health care systems" as a means of breaking the cycle of repeat unwanted pregnancy and improving the overall health status of women in the developing world.[23] In 1991, IPAS listed post-abortion family planning and other reproductive health care as essential elements of a framework for providing quality abortion care, based on Bruce's quality of care framework[24] and in 1998, IPAS and PRIME published a framework for quality of post-abortion care.[25]

In 1993, Engender Health, IPAS, the International Planned Parenthood Federation (IPPF), the JHPIEGO Corporation and Pathfinder International formed the Post-abortion Care Consortium to educate the reproductive health community about the consequences of unsafe abortion and promote post-abortion care as an effective public health strategy. In 1994, IPAS published the original post-abortion care model, which comprised three elements: emergency treatment services for complications of spontaneous or unsafely induced abortion; post-abortion family planning counseling and services; and links between emergency abortion treatment services and comprehensive reproductive health care.[26]

The original model presented post-abortion treatment as an essential emergency obstetric service. Health systems often relied on resource-intensive uterine evacuation methods, such as sharp curettage (also known as dilation and curettage, or D&C), that prevented them from offering services at every health care level. To reduce barriers to treatment for women, services needed to be high-quality, locally accessible and sustainable by the health care system. Vacuum aspiration has a typical effectiveness rate of more than 98% and, compared with sharp curettage, is associated with lower rates of the four most common uterine evacuation complications. In 1991, a WHO technical working group identified vacuum aspiration as an essential element of care at the first referral level (i.e., at sites to which primary-level providers refer women needing treatment for abortion complications). Electric vacuum and manual vacuum aspiration have equivalent effectiveness rates. Manual vacuum aspiration, an accessible and low-cost method, enables midlevel providers and other health professionals in primary-level facilities that do not have operating theaters, general anesthesia or electricity to offer uterine evacuation on-site. Offering uterine evacuation at primary-level facilities also creates an opportunity

for providers (often the same ones who perform uterine evacuation) to offer reproductive and other health services at the treatment visit.[23]

Second, the model emphasized the need for post-abortion family planning services. A working group at a pivotal 1993 conference in Bellagio, Italy, recommended that "a range of contraceptive methods, accurate information, sensitive counseling and referral for ongoing care should be made available and accessible to all women who have undergone abortion''.[27] The group further recommended that "at a minimum, women should leave abortion-care facilities understanding their immediate return to fertility, that there are ways to prevent future unwanted pregnancies and where to obtain contraceptive methods, if they so desire.[28] Research has since demonstrated the benefits of contraceptive services in preventing abortion.[22,29]

The third element of the model linked emergency abortion treatment and comprehensive reproductive health services. In many developing countries, a woman's first or only contact with the formal health care system may be when she visits a facility for post-abortion care. That visit creates an opportunity for providers to assess her health needs and to offer appropriate reproductive health or other services.[23]

Through the 1990s, international conferences and organizations increasingly began to press population, safe motherhood and women's health initiatives to support women's right to post-abortion care. The 1994 International Conference on Population and Development (ICPD) Programme of Action urged all governments and organizations to strengthen their commitment to women's health and deal with the health impact of unsafe abortion as a major public health concern. The Fourth World Conference on Women, held in 1995 in Beijing, recognized that "unsafe abortions threaten the lives of a large number of women, representing a grave public health problem as it is primarily the poorest and

youngest who take the highest risk," and referred to the ICPD Programme of Action for solutions. IPPF and the International Federation of Gynecology and Obstetrics defined women's rights related to sexual and reproductive health in 1995 and 1997, respectively. In 1996, the International Confederation of Midwives passed a resolution promoting the participation of midwives in the provision of post-abortion care services. The 1999 ICPD +5 Conference Programme of Action strengthened the call to recognize and deal with the health impact of unsafe abortion as a major public-health concern by reducing the number of unwanted pregnancies through the provision of family planning counseling, information and services and by ensuring that health services are able to manage the complications of unsafe abortion.[23]

As post-abortion care gained global support, governments and agencies began to implement programs; a USAID evaluation in 2001 confirmed that more than 40 countries had post-abortion activities.[32] During the middle and late 1990s, programs following the original model focused mainly on introducing manual vacuum aspiration at tertiary-level facilities and strengthening linkages between treatment and family planning services. Results from a study in Kenya showed that the most effective approach to integration in a hospital setting was for staff to provide family planning on the gynecologic ward. A 1997 Population Reports provided recommendations for post-abortion care service improvements and expansion beyond hospital facilities. Although an increasing number of tertiary facilities were offering services, only a small proportion of women who experienced complications from unsafe or incomplete abortion were finding their way to hospitals for treatment and post-abortion family planning services. Operations research from several countries contributed significantly to increased momentum for decentralized post-abortion services.[23]

The Essential Elements of PAC model reflects, from a provider and a consumer perspective, an enhanced vision of high-quality, sustainable services. To expand access, some ministries of health authorized midwives and other providers at primary-level facilities to offer post-abortion care services, including treatment with manual vacuum aspiration. In many cases, this occurred once services at tertiary and other hospital facilities were functional and could accept referrals for abortion complications that could not be managed by primary-level providers. In the late 1990s, with funding from USAID and assistance from cooperating agencies, the governments of Ghana, Kenya and Uganda demonstrated that midwives in primary-level facilities could provide high-quality post-abortion care services using manual vacuum aspiration and that primary-level services increased post-abortion family planning counseling and method provision.[23]

The momentum created by project results, together with revised country-level reproductive health service policies and standards supporting post-abortion care by mid- and primary-level providers, led to the expanded availability of services. Results from a study with private-sector nurse-midwives in Kenya, illustrated that additional health services should be offered or were being offered to women following the provision of treatment and contraceptive services.[30] During this time, several other agencies and countries independently added to their post-abortion care model a reproductive health counseling element to support women in resolving issues related to abortion and a community element to promote education for community members, reduce the need for abortion and improve reproductive health.[31] These well-documented efforts prompted further expansion of service delivery into primary health care facilities and communities, and increased support for prevention-oriented post-abortion care activities.

2.7 Essential Elements of PAC Model

The Essential Elements of PAC model, endorsed by the PAC Consortium in May 2002, reflects, from a provider and a consumer perspective, an enhanced vision of high-quality, sustainable services. The model's five elements shows shift from a facility-based medical treatment to a public health approach that responds to women's broader sexual and reproductive health needs.

1. **Community and Service Provider Partnerships:** This element of the model recognizes community members' vital role in treatment, prevention and advocacy efforts. Community health education and mobilization have been identified as key strategies to combat unsafe abortion, increase access to and quality of post-abortion care programs, and improve women's reproductive health and lives.[31]
2. **Counseling:** Effective counseling enhances a woman's understanding of the psychosocial circumstances surrounding her reproductive past and future, and increases her confidence in her ability to participate in her health care. Client-centered counseling ensures that women, rather than their providers, make voluntary choices about their treatment, contraceptive methods and other options. Post-abortion care counseling covers more than fertility and contraception (although it must emphasize these elements) and consists of more than information provision and sensitive communication. This counseling provides an opportunity to help women explore their feelings about their abortion, assess their coping abilities, manage anxiety and make informed decisions.[23]
3. **Treatment:** The first element of the original model and the focus of many post-abortion care activities, treatment remains a critical part of care, because women who have had an incomplete spontaneous or unsafely induced abortion will, in many cases, need uterine evacuation and other medical intervention. The revised

model includes language recognizing that post-abortion care does not always involve complications, and that complications are not always life-threatening but may be in the absence of swift and appropriate medical attention.[23]

4. **Family Planning and Contraceptive Services:** The revised post-abortion care model recognizes that some women receiving post-abortion treatment need family planning services to help them space births, while others need contraceptive services because they have no plans to conceive. Therefore the model emphasizes the importance of overcoming barriers to offering family planning and contraceptive services during the same visit and at the same location as post-abortion treatment. When a facility does not provide these services at the time of abortion-related treatment, the opportunity to provide them may be lost. Women may not make another visit, to that facility or another, for such services. In addition, if the facility is not the one that a woman would go to for re-supply of her method, or if it does not have her method of choice, providers need to link her to a referral site. Ideally, the woman would leave the treatment facility with an interim method to use until she obtains her preferred method at a referral site. For this to happen, facilities' contraceptive service infrastructure must be adequate, and providers must be knowledgeable about which methods are appropriate for women following treatment.[23]

   Making a wide range of birth spacing practices and contraceptive methods (including, where authorized, emergency contraception) available to all women of reproductive age is an effective strategy for preventing unwanted pregnancies and unsafe abortion, and for helping women achieve their reproductive desires.[23]

5. **Reproductive and Other Health Services:** An important relationship in the new model is between effective counseling and increased use of the reproductive and

other health services women want. The model encourages the provision of all appropriate health services at the time women receive post-abortion care, preferably at the same facility. When a facility is unable to provide needed services, it should have functional mechanisms in place for making referrals (either within the facility or to another one), receiving feedback from referral sites or providers, and performing follow-up; such mechanisms should include consistent and accurate record-keeping.[23]

2.8 Availability of Post-Abortion Care in Hospitals

Complications from unsafe abortion are believed to account for the largest proportion of hospital admissions for gynecological services in developing countries. The WHO estimates that one in eight pregnancy-related deaths result from unsafe abortions.[32]

A baseline study on barriers to access to legal abortion services found that in late 2007 in Colombia, just 11% of providers had MVA equipment. Inadequate availability of MVA equipment and lack of training in its use are possible reasons why medical doctors rely on and prefer D&C over all other types of procedures to provide first trimester abortion. The technique of D&C was the most common in both public and private facilities, hospitals and clinics at that time. The unavailability of MVA at such facilities and the lack of training in its usage clearly indicate that complications of incomplete abortion are also managed with dilatation and curettage which associated with far more complications.[33]

In countries like South Africa, women with abortion complications resulting from either spontaneous or induced abortion are treated in secondary or tertiary-level hospitals and abortions at public sector facilities were available free of charge, while NGO facilities offered a mix of free and fee-related services. Facilities that offered first trimester abortions were either provided by mid-level providers who had been trained in manual

vacuum aspiration (MVA) techniques or by doctors. Facilities that provided both first and second trimester abortions employed registered nurse midwives for terminations up to 12 weeks, and doctors for second trimester abortions. Some doctors who provided second trimester abortions formed part of a 'roving team' of providers who rotated between public sector facilities in the study sites. Most second trimester abortions were performed using the dilation and evacuation (D & E) method. Misoprostol (Cytotec) was administered to all abortion patients for cervical priming prior to the MVA and D & E procedure. The medication method of abortion for second trimester abortions using misoprostol-alone which requires a hospital admission of several days was used in some tertiary hospitals. The Western Cape is the only province in South Africa where D & E for second trimester abortions is offered on a limited scale in the public sector. In most other provinces in South Africa within the public sector, the medication method of abortion using misoprostol-alone is the preferred method for second trimester abortions. Many designated public sector facilities did not have providers who were prepared to either perform abortions or to assist those performing abortions. [34]

For Ethiopian women, most of whom live in rural areas, the health center is the locus of their medical care. Expanding PAC services from hospitals to health centers requires enabling providers to meet post-abortion needs. WHO guidelines[35,36], recommend that MVA be used to treat incomplete abortions at 15 weeks of gestation or less. Use of MVA by midwives has been an effective means of expanding PAC services to primary and lower-level health facilities in other African countries.[35] Thus, the Ethiopian Federal Ministry of Health chose promotion of MVA by midlevel providers (including midwives) as a way to provide PAC to women in the most distant regions of Ethiopia and by 1999, Ethiopia acknowledged this need in the Health Sector Development Program and continued the priority in their Health Sector Strategic Plan for 2005–2010.[36]

Managing complications of unsafe abortion requires providers with skill, clean environs, and the proper equipment and supplies to perform the procedure. Often only physicians are trained to manage abortion complications, and this training often focuses on sharp curettage. The shortages of midwives, nurses and doctors for maternal health and health services in sub-Saharan Africa, and inequitable distribution of maternal health professionals between geographic areas and health facilities is a great challenge. Shortages of health professionals reduce the number of facilities equipped to offer emergency obstetric care 24 hours a day, and that is significantly related to quality of care and maternal mortality rates. Some countries are experiencing depletion of their workforces due to emigration and HIV-related illness. Another feature is the movement from public to private health facilities, and to international health and development organizations. The availability of skilled birth attendants and emergency obstetric care may be reduced due to understaffing, particularly in rural, poor areas. The existing workforce may experience increased workloads and job dissatisfaction, and may have to undertake tasks for which they are not trained.[37]

After an attempted termination or miscarriage, women seek care in health centers rather than in hospitals; yet, almost half of smaller health centers and many large health centers still refer women to other facilities for routine PAC. Large health centers appear to be the first choice for women seeking any termination or PAC services. Improving health centre capacity to provide this essential care and expanding post-abortion care, enhancing related infrastructure, distributing informational materials and instituting an abortion surveillance system must be a national priority.[38]

Studies in Nigeria showed that abortion complications constituted 41.1% of all Gynecological adbmissions.[39,40] They also found out those women aged 19 years and less constitute an appreciable number of victims. A study by Kinaro[41] and colleagues also

showed that only 31% of the providers had formal training for the implementation of PAC services. There was good linkage between PAC and family planning services but poor integration between emergency post-abortion care and other reproductive health services in the center.[41]

In order to explore health systems issues and determine reliable baseline figures prior to program expansion, IPAS Ethiopia collaborated with the Regional Health Bureaus from July to September 2000, to conduct a cross-sectional post-abortion care (PAC) assessment in three regions: Oromia, Amhara and Addis Ababa. The main objective of the assessment was to determine the current and future potential capacity and quality of PAC service delivery in public hospitals and health centers. A total of 120 health facilities were included in the study, just over half (n=120, 54%) of all facilities surveyed were able to respond to patients suffering from abortion-related complications by performing a uterine evacuation with either sharp curettage or manual vacuum aspiration (MVA).The capacity was much higher in the Amhara and the Oromia regions, where all of the hospitals and 61% of the health centers sampled were able to perform uterine evacuations. Only three (13%) of all of the public sector health facilities in Addis Ababa were able to do so.[42]

Very few of the facilities use MVA. Of the 65 facilities that were able to perform uterine evacuations, only one-quarter have functioning MVA instruments. This information was further corroborated by a record review of the actual procedures performed. The overwhelming majority (94% of the procedures) were completed using sharp curettage. The use of MVA was extremely limited and only documented in 5% of the cases. The remaining patients (1%) with severe complications from abortion were referred to higher-level health facilities for treatment.[42]

In spite of the clinical limitations in many health centers to manage post-abortion complications, over two-thirds of the respondents reported that they themselves had encountered at least one client presenting with an incomplete abortion during the past three months. Half of these providers were working in facilities that did not have the capacity to perform a uterine evacuation. Fifteen of these respondents said that they had seen three or more women presenting with post-abortion complications during that same time period.

The exchange of clients for PAC services between the public and private sector facilities was almost nonexistent. Only one health center indicated that they commonly received patients referred from private practitioners for the treatment of abortion complications; none of the public sector facilities ever referred patients with abortion complications to private facilities.

Despite the wide range of contraceptive methods available in most of the facilities that provide uterine evacuation, the provision of post-abortion contraception to women treated for an incomplete abortion was erratic. Only 23% of health facilities that provide uterine evacuation services reported providing post-abortion contraceptive services regularly. In most of these facilities, the provision of PAC services was poorly linked with contraceptive counseling and methods. The rest of the facilities either rarely or never provide women with contraception. By contrast, "post-abortion counseling" was reported to be a regular service provided by three-quarters of these facilities. However, many of the health staff (46%) currently providing contraceptive methods or counseling to clients have received no special training in contraceptive counseling or provision.[42]

To be effective in treating post-abortion complications and preventing mortality, emergency abortion care should be accessible 24 hours a day.[43] The major challenge of

providing adequate 24-hourpost-abortion care is lack of adequate staffing for the unit. Although staff at the hospital may be very committed to the establishment of the PAC unit, they may also be extremely busy with a high volume of obstetric patients in need of care and for a health facility to establish the PAC unit as an integral part of the hospital's reproductive health services, a linkage needed to be created and fostered between the PAC unit and the following departments:

- Admitting
- Operating theater
- Obstetrics and gynecology clinic
- Outpatient FP clinic
- Central sterile services
- Pharmacy
- Equipment and supply
- Medical records
- Clinical laboratory

This coordination among hospital departments and linkage to other services, which is an integral component of PAC services, greatly improves quality of care and has allows PAC patients to utilize a range of needed services at the hospital effectively.[43]

2.9 Equipment and Supplies Needed

2.9.1 Instruments and equipment

1. Consumable Supplies

Items that should be on hand, but are not required for all MVA procedures:

- Pan and pan cover (1 each)
- Bivalve (Graves) specula (small and medium)

- Uterine tenaculum (Braun, straight, 9%") (1) or Vulsellum
- forceps (1)
- Pan emesis basin (1)
- Sponge (Foerster, straight 9%") forceps (2)1
- 10-20 ml syringe and 22-gauge needle for para-cervical block (6 each)

2. MVA instruments

- MVA vacuum syringe, double valve (1)
- Plastic cannulae of different sizes (6 mm to 12mm)
- Adapters
- Silicone for lubricating MVA syringe o-ring (1tube)

3. Light source (to see cervix and inspect tissue)

4. Strainer (for tissue inspection)

5. Clear container or basin (for tissue inspection)

6. Simple magnifying glass (x 4-6 power) (optional)

7. Swabs/gauze

9. Antiseptic solution (preferably an iodophor such aspovidone iodine)

10. Gloves, sterile or high-level disinfected surgical gloves or new examination gloves

11. Gloves, utility

12. Local anesthetic (e.g., 1-2% lidocaine without mepinephrine)

13. Curette, sharp, large (1)

14. Tapered mechanical dilators: Pratt (metal) or Dennisto[43]

Before beginning the MVA procedure, the health care provider need to make sure that the following equipment and supplies are in the treatment room and in working order:

- Examination table with stirrups
- Strong light (e.g., gooseneck lamp)
- Seat or stool for clinician
- Plastic buckets for decontamination solution (0.5% chlorine)
- Puncture-proof container for disposal of sharps (needles)
- Leak-proof container for disposal of infectious waste
- convection oven (dry heat)

The items seldom required in uterine evacuation cases but are needed for possible emergency use include:

- Spirits of ammonia (ampules)
- Atropine
- IV infusion equipment and fluid (DSW or *DIS)*
- Ambu bag with oxygen (tank with flowmeter)[43]

2.9.2 Manual Vacuum Aspiration

MVA is safe and effective method for completing first-trimester abortions and the simple technique can considerably improve post-abortion care in hospitals.[44] It is highly recommended for management of first trimester incomplete abortion in not only primary health centers but also in secondary and tertiary centers.[36]Some studies have shown that dilatation and curettage which requires the use of anaesthesia in the theatre is the most common method used in hospital for abortion and management of incomplete abortion due lack of training and availability of MVA equipment in such health facilities.[33,45]

The development of manual vacuum aspiration to empty the uterus, and the use of misoprostol, an oxytocic agent, have improved the care of women all over the world especially in the developing countries.[46]

According to a research carried out in Nigeria, over 45% of doctors reported that they use manual vacuum aspiration (MVA) for the management of abortion in the first trimester, while 25% use dilatation and curettage (D&C). Nearly 28% reported the use of MVA followed by D&C in the first trimester.[47]

In a cross-sectional study to determine the knowledge, attitude and practice of private medical practitioners in Enugu, South-eastern Nigeria, on abortion and post-abortion care, it was found out that MVA is becoming so common that in some parts of Nigeria more than halve of women who had ever terminated a pregnancy in their life time said MVA was used and a high as 80% of all first trimester abortions are terminated using this method, the other less popular method now being D&C.[48]

To improve the quality of abortion-related care in Mexico, IPAS, introduced manual vacuum aspiration into facilities as an alternative to sharp curettage for the treatment of abortion complications and dysfunctional uterine bleeding. One major advantage of this technique is that it requires only local anesthesia, whereas sharp curettage is customarily performed under general anesthesia. Training sessions began in 1993 with the participation of obstetrician-gynecologists, anesthesiologists and nurses in three major obstetric and gynecological hospitals in the states of Jalisco and Mexico, as well as in Mexico City. The trainers presented participating health care providers not only with the new technology, but also with a comprehensive model for providing care to women with abortion complications. By the mid-1990s, the focus of the training shifted toward the implementation of post-abortion care, conceptualized as a package of services comprising treatment of incomplete abortion with manual vacuum aspiration, general counseling (empathy and support for the woman, and provision of health and medical information) and family planning counseling and services. From 1994 through 1997, a total of 1,325

health care professionals working in 23% of hospitals nationwide were trained in the use of manual vacuum aspiration and other aspects of the post-abortion care package.[49]

Thus, between April 1997 and August 1998, when the study was conducted, post-abortion services varied across hospitals, in part according to whether post-abortion care training had been held in the facility. Out of the three basic models of care, traditional service delivery (sharp curettage for the treatment of incomplete abortion and the provision of family planning information and methods to women) was the predominant model, given that most hospitals and personnel had not yet received post-abortion care training. Women generally were offered contraceptive methods, although counseling and assessment of women's contraceptive needs based on their health status were not central components of traditional care.[49]

2.9.3 MVA and Misoprostol

Originally, the treatment of choice for first-trimester miscarriage was surgical uterine evacuation with dilatation and curettage. This was subsequently replaced by MVA, which was found to be just as effective, but cheaper and with fewer adverse effects. Unfortunately, MVA is not always available in low-resource settings, as it requires specialist equipment and training for use.[50] Hence, there has been increasing interest in the use of misoprostol for medical evacuation, especially in low-resource settings.

Two important randomized trials of oral misoprostol versus manual vacuum aspiration (MVA) for the treatment of incomplete miscarriage (also known as ‘incomplete miscarriage’ or ‘retained products of conception’).[51] Both studies show high rates of efficacy for the misoprostol regimen with complete evacuation rates of 99 and 95%, respectively, and confirm previous studies that found that misoprostol treatment gives

higher overall satisfaction rates than MVA. Together, they should provide reassurance for health workers worldwide that misoprostol is an effective alternative to MVA.

Both study authors suggest that misoprostol can now be used as a first-line therapy for incomplete miscarriage in rural settings. But there are a number of obstacles, both presumed and real, that need to be overcome before misoprostol can become the first-line therapy.

The first concern is that a medical evacuation in settings with high rates of untreated infection, such as HIV/AIDS, gonococcus and chlamydia, will inevitably lead to higher rates of pelvic infection. Although miscarriage affects just 15% of all pregnancies, incomplete miscarriage continues to contribute disproportionately to maternal morbidity and mortality in much of the developing world. This is partly due to its association with infection, however, many 'miscarriages' with a poor outcome may in fact represent unacknowledged illegal termination of pregnancy (TOP). Not only are background infection rates with chlamydia or gonococcus already high in women seeking 'back-street' TOP but also they are frequently conducted using sticks or unsterile surgical instruments. As a result, retained products of conception are more likely to become infected, leading to profuse bleeding, pelvic infection and subsequent tubal blockage.[50]

The second concern relating to the use of misoprostol in rural settings is the lack of ultrasound facilities for confirmation of actual miscarriage—some women may present with bleeding and try to obtain a TOP in pregnancies which otherwise would have progressed. These two studies provide important reassurance on this score. They suggest that it is probably better if routine ultrasound is not used at all and that the diagnosis is made on clinical grounds alone (i.e. by finding an open cervical os). In the study by Shwekerela et al.[51] there was very limited ultrasound availability, and so the initial

diagnosis and the confirmation of 'completeness' were both made clinically. In contrast, the study by Dao et al.[52] was conducted at two large university teaching hospitals, and ultrasound was used for both initial diagnosis and confirmation of an empty uterus after treatment. The success rates in this study with misoprostol were lower, especially in the second of the study sites. It is likely that the poor success rates here were due to the use of ultrasound by doctors unfamiliar with medical treatment of incomplete miscarriage. These studies demonstrate that the expensive technology involved in medical examination, ultrasound, anaesthesia and surgical evacuation can all effectively be replaced by a vaginal examination to detect an open cervical os and three tablets of misoprostol. As a result, this method has the potential greatly to improve access to health services, enabling women to seek appropriate, effective care at secondary and even primary healthcare facilities, staffed with non-surgically trained mid-level providers. This has major implications for (often over stretched) healthcare facilities in resource-poor settings. It can reduce the burden on skilled surgical providers, as well as reducing the need for surgical equipment and supplies, surgical wards, sterilization and anaesthesia. However, the ease and effectiveness with which misoprostol can be used is also causing concern among healthcare planners. The paradox of misoprostol is that the place in which it could be of most benefit is also the place in which it could cause the most harm. Although misoprostol has a superb safety record in early pregnancy, even in overdose, if used at the wrong dose in the third trimester it can lead to uterine rupture and fetal death.

Although oral misoprostol was less effective than MVA in some studies,[53] it was more acceptable to women. Misoprostol is well-suited for use in low-resource settings, and should be promoted as an option for the for first trimester incomplete abortion.[53]

2.9.4 Knowledge of PAC in staff

The availability of knowledgeable health care providers in health facilities is the key to ensuring women with complication of abortion get the best response that will save their lives and drastically reduce morbidity. The Department of Health in Myanmar developed a strategy to address the problem of abortion complications by integrating post-abortion care and contraceptive services into the existing township health system. The quality of post-abortion care was assessed by the Department of Health, using a baseline survey of health providers and post-abortion women. The integration of post-abortion care was led by the Township Medical Officers, who provided monthly in-service training and supervision of health care workers in each township. Hospital-based doctors and nurses, clinic midwives, village midwives and other volunteer health providers, including traditional birth attendants, were all trained that ensured the availability of experienced trained providers at health facilities in that country.[54]

A study to investigates knowledge and practices of post abortion care (PAC) services among health care professionals in the Anambra State of southeastern Nigeria in which multi-stage sampling was used to select 60 health facilities and from which 450 participants were recruited and the respondents, comprised of general practitioners (214, 49.0%), nurses (161, 36.8%), specialist doctors (56, 12.8%), and resident doctors (5, 1.1%), showed that Three hundred thirty respondents (75.5%) were aware of PAC services. Twenty-seven (6.2%) and 28 (6.4%) of respondents were aware of community partnership and family planning services, respectively, as elements of PAC. In the study, majority of respondents (302, 69.1%) treated abortion complications, but only 155 (35.5%) used a manual vacuum aspirator. Three hundred thirty-eight (88.8%) offered counseling services, and 248 (56.8%) provided referrals to other reproductive health services.[55]

How much health care providers know about post-abortion care and of course how they manage such patients is very important, take for instance in another study that examined the knowledge, attitude and practice of private medical practitioners in Calabar on abortion, post-abortion case and post-abortion family planning, forty eight private practitioners who were proprietors of private clinics in the city were interviewed using a structured questionnaire and only 18.2% of the doctors use standard procedures such as manual vacuum aspiration (MVA) for the management of patients with abortion and abortion complications.[56] Indeed, Some of the factors contributing to women with complication of unsafe abortion specially retained products of conception being managed with MVA without for instance simple analgesia includes lack of inadequate training and/or skills of providers.[56,57] A good number of the health care providers in the study did not routinely practice integrated post-abortion family planning and STDs management.[56]

Since 2004, PAC community mobilization activities implemented in Bolivia, Kenya and Senegal have increased knowledge of family planning methods, raised awareness of complications related to unsafe abortion and reduced stigma regarding post-abortion care.[58]

With appropriate government training, mid-level health-care providers can provide first trimester manual vacuum aspiration abortions as safely as doctors' can.[59]

2.9.5 Case load of post-abortion cases

While data from the developed world is showing a decrease in abortion-related mortality and morbidity with the liberalization of abortion law, the case is not entirely so in developing countries of the world where such liberalization is being put in place.[60]This was seen in Ethiopia in a study aimed to assess the trend of hospital-based abortion complications during the transition of legalization in May 2005. The overall and abortion-

related maternal mortality ratios showed a non-statistically significant downward trend over the 5-year period. However, the case fatality rate of abortion increased from 1.1% in 2003 to 3.6% in 2007.[60]

A lot more need to be done about unsafe abortion in developing countries and ending the silent pandemic of abortion-related mortality and morbidity is an urgent public-health and human-rights imperative. As with other more visible global-health issues, this scourge threatens women throughout the developing world. Every year, about 19-20 million abortions are done by individuals without the requisite skills, or in environments below minimum medical standards, or both.[61]

National estimates of abortion-related hospital admissions in women aged 15–44 years were compiled for 13 developing countries: Africa (Egypt, Nigeria, and Uganda), Asia (Bangladesh, Pakistan, and the Philippines), and Latin America and the Caribbean (Brazil, Chile, Colombia, Dominican Republic, Guatemala, Mexico, and Peru). These data were combined with supplementary data from five countries in sub-Saharan Africa (Burkina Faso, Ghana, Kenya, Nigeria, and South Africa) to give estimates for the three world regions.[62]The annual hospitalization rate varies from a low of about 3 per 1000 women in Bangladesh to a high of about 15 per 1000 in Egypt and Uganda. Nigeria, Pakistan, and the Philippines have rates of 4–7 per 1000, and two countries in Latin America with recent data have rates of almost 9 per 1000. In the developing world as a whole, an estimated five million women are admitted to hospital for treatment of complications from induced abortions each year. This equates to an average rate of 5·7 per 1000 women per year in all developing regions.[15,62]

In 2005, an estimated 31, 579 women with complications of miscarriage or terminations were treated in Cambodian government facilities; 80% of these women sought care at a

health centre. Forty percent of all women seeking care for complications either reported or showed strong clinical evidence of prior attempted terminations. Nearly 17% of these women were in the second trimester of pregnancy and 42% of them presented with high severity complications. The annual incidence of termination and miscarriage complications (abortion complications) was 867 per 100,000 women of reproductive age. The projected ratio of complications was 93 per 1000 live births.[63]

A nationally representative survey of 313 health facilities that treat women who have post-abortion complications and a survey of 53 professionals who are knowledgeable about the conditions of abortion provision in Uganda was conducted in 2003. Indirect estimation techniques were applied to the data to calculate the number of induced abortions performed annually. Abortion rates, abortion ratios and unintended pregnancy rates were calculated for the nation and its four major regions. Each year, an estimated 297,000 induced abortions are performed in Uganda, and nearly 85,000 women are treated for complications. Abortions occur at a rate of 54 per 1,000 women aged 15-49 and account for one in five pregnancies. The abortion rate is higher than average in the Central region (62 per 1,000 women), the country's most urban and economically developed region. It is also very high in the Northern region (70 per 1,000). Nationally, about half of pregnancies are unintended; 51% of married women aged 15-49 and 12% of their unmarried counterparts have an unmet need for effective contraceptives.[64]

Unsafe abortion remains a major cause of maternal morbidity and mortality in developing countries including Nigeria.[65,66] In a 10-year descriptive review of 118 consecutive cases of complicated induced abortions, complications of induced abortion constituted 2.3% of maternal admissions, 5.6% of gynaecological admissions and 22.6% of maternal deaths. Fifty-nine percent of the women were married and the mean age was 25.6 ± 7.9 years. Doctors performed 51.7% of the induced abortion and nurses performed 13.9%. Of the

mortalities, medical doctors did 61 of the abortions in which 18 died (29.5%); traditional medical practitioners were responsible for 13 of the abortions in which two died (15.4%); of the 16 abortions performed by nurses, two died (12.5%). Sepsis was the most common cause of death (73%).[65]

The burden of unsafe abortion lies not only with the women and families, but also with the public health system. Every woman admitted for emergency post-abortion care may require blood products, antibiotics, oxytocics, anesthesia, operating rooms, and surgical specialists. The financial and logistic impact of emergency care can overwhelm a health system and can prevent attention to be administered to other patients.[67]

In a 2002-2003 survey of women and their providers in 33 hospitals in eight states across Nigeria, 2,093 patients were identified as being treated for complications of abortion or miscarriage or seeking an abortion.[67] Among women admitted for abortion-related reasons,36% had attempted to end the pregnancy before coming to the hospital (including 24%with and 12%without serious complications),33%obtained an induced abortion at the facility (notwithstanding the country's restrictive law)without having made a prior abortion attempt and 32%were treated for complications from a miscarriage. Of women with serious complications, 24% had sepsis, 21% pelvic infection and 11% instrumental injury; 22% required blood transfusion and 10% needed abdominal surgery.[67]

2.9.6 Costs of treating abortion complications

Globally the number of unsafe abortions remains stubbornly high, especially in low-income countries. The global costs of treating complications from unsafe abortions are likely to be a significant burden on public health systems of these countries.[66]

Unsafe abortion is a significant contributor to maternal mortality in Nigeria, and treatment of post-abortion complications drains public healthcare resources. In 2012 a research conducted by Janie Benson and colleagues[68]calculated provider estimates of medications, supplies, and staff time spent in 17 public hospitals to estimate the per-case and annual costs of post-abortion care (PAC) provision in Ogun and Lagos states and the Federal Capital Territory. The study utilized savings, an Excel-based tool designed by Ipas based on cost inputs and types of abortion complications found in the WHO Mother-Baby package. [68]The tool collected data on the name, quantity, and cost of medications and supplies typically used for four methods of uterine evacuations carried out in the selected facilities, namely D&C, MVA, EVA, Misoprostol alone (MPAC). The unit cost of each item was multiplied by the amount of that item used. The cost of each item's contribution were then summed up to calculate the average cost of supplies and medications used for a typical PAC case. The same calculations were done for staff time and that was added to overall cost of supplies to arrive at the average per-case cost by procedure. Three categories of PAC cases based on severity of complications were, simple cases: cases with moderate complications and severe cases. Simple cases referred to cases not requiring treatment for sepsis, blood transfusion, while moderate are those that required those treatments. Severe cases were those that required both sepsis treatment, blood transfusion and surgical intervention. All cost were calculated in Nigerian Naira and reported at an exchange rate of N 152.6 to $1 USD. PAC with treatment of moderate complications costed $112USD about 60% more per case than simple PAC which costed $70USD. In cases needing simple PAC, treatment with dilation and curettage (D&C), the cost was US $80 that was 18% more per case than manual vacuum aspiration (MVA) which was put at $68USD. Annually, all public hospitals in these 3 states spent $807,442USD on PAC. In 2009 Vlassoff[69] and his colleagues, their research titled Estimates of Health care system

Costs of Unsafe Abortion in Africa and Latin America used the same average per-patient cost and the WHO Mother-Baby Package models to estimate and compare cost of PAC in Africa and Latin America. The average per-patient cost of post-abortion care ranged from $83USD in Africa to $94USD in Latin America, estimates based on the WHO Mother-Baby Package model were between $57USD and $109USD per case. Both researches agreed that the costs could be reduced by shifting service provision to an outpatient basis, allowing service provision by midwives, and abandoning the use of D&C and theater costs in simple cases.[68] It is quite clear that the costs of PAC services are expensive the most people in developing countries, hence the need to bring that to the notice of policy makers for intervention by putting in place a policy that can significantly reduce the cost to save lives.

CHAPTER THREE

METHODOLOGY

3.1 Background of Study Area

Bauchi state is located in the North Eastern part of Nigeria with an estimated population of 4.7 million.[41] The State lies between Latitude of 9.3 and 12.3 North of the Equator and Longitude 8.5 and 11 East of the Greenwich Meridian. The state covers 45,837 square kilometers (km^2). Bauchi state is bounded by Kano and Jigawa states to the North, Yobe and Gombe to the East, Kaduna state to the West and Plateau and Taraba states to the South. It is divided into three senatorial districts namely Bauchi North, Central and South and has a total of twenty (20) local government areas namely, Bauchi, Alkaleri, Kirfi, TafawaBalewa, Bogoro, Dass, Toro (Bauchi South), Gamawa, ItasGadau, Katagum, Jama'are, Giade, Shira (Bauchi North), Ningi, Ganjuwa, Darazo, Misau, Warji, Zaki, Dambam (Bauchi Central) .

The entire western and northern parts of the state are mountainous and rocky. This is because of the closeness of the state to the Jos plateau and Cameroun Mountains. The state spans two distinctive vegetation zones namely, the Sudan and the Sahel Savannahs.

The climatic condition of Bauchi state is very hot in the months of April and May, while December and January are the coldest month.

A railway line that links the seaports in Lagos and Port Harcourt with the hinterland passes through Bauchi. The state is also linked with other States of the Federation by Trunk 'A' and 'B' Highways, which include Jos-Bauchi-Gombe-Yola road, Bauchi-Maiduguri road, Bauchi-Ningi – Kano road and Kano-Azare-Potiskum-Maiduguri road. There are good and solid road networks that link the Local Government Areas of the State.

Bauchi state is endowed with large bodies of water, which facilitate agricultural productivity. For example, Rivers Jama'are and Gongola cut across some Local Governments in the State. Added to these are dams like Gubi Dam in Bauchi Local Government, Tilden Fulani in Toro Local Government. These, in one way or the other are meant for irrigation and other productive activities. Waya dam in Bauchi Local Government is currently under construction and is meant to aid dry season farming and provide water to villages surrounding Bauchi metropolis.

Bauchi state has 55 tribal groups in which Hausa, Fulani, Gerawa, Sayawa, Jarawa, Bolewa, Kare-kare, Kanuri, Warjawa, Zulawa and Badawa are the main tribes.[7]

Bauchi state is an agricultural state with vast fertile soil that grows maize, millet, groundnut and guinea corn. Irrigation farming and livestock rearing is also being practiced.[7]

3.2 Study Design

This study is a facility based descriptive cross sectional survey designed to assess the availability of post abortion care services in Bauchi state using quantitative methods;

interviewer-administered questionnaire (for providers and managers) and a facility checklist.

3.3 Study Population

1. Facility health care providers.
2. Managers of Health facilities.
3. Public primary and secondary health-care facilities in Bauchi State.

3.4 Sample Size

A whole population study was used hence sample size was not calculated.

3.5 Sampling Techniques

1. Multi-stage sampling method was used to select eighteen (18) health facilities for the survey. The whole state was divided along the three (3) senatorial district of South, North and Central. All the LGAs in all the three districts were listed out (Bauchi South-7 LGAs, Bauchi North-6 LGAs, Bauchi central-7 LGAs) and three (3) LGAs were selected randomly from each district. All the secondary health facilities within each of the total nine (9) LGAs were counted and included in the survey. At the same time all the PHC centers and maternities (functional that is, providing services to the people) located within the three (3) LGAs selected per district were listed out and three (3) of such facilities were selected randomly (using a random number table) from each district giving a total of nine (9) primary health centers.

The facilities selected were:

S/N	Senatorial Districts	Secondary health Facilities	Primary Health Facilities
1.	Bauchi North	1. G.H Shira 2. G.H Giade 3. G.H Gamawa	1. Ududbo Maternity (Gamawa LGA) 2. PHC Disina (Shira LGA) 3. Zabi PHC (Giade LGA)

2.	Bauchi Central	1. G.H KafinMadaki 2. G.H Darazo 3. G.H Ningi	1. PHC GadarMaiwa (Ningi LGA) 2. PHC Nasaru (Ningi LGA) 3. PHC Miya (Ganjuwa LGA)
3.	Bauchi South	1. G.H Dass 2. G.H Alkaleri 3. G.H Bayara	1.Alkaleri Town Maternity (Alkaleri LGA) 2. PHC Durum (Bauchi LGA) 3. YelwaDomiciliary (Bauchi LGA)

2. All Doctors, Nurse-midwives and community health extension workers CHEWs present at the maternity (ANC, Labour& Delivery and FP, section of the facility) during the period of the study in the Eighteen selected (18) facilities were interviewed**.**
3. All managers in the selected facilities including heads of units were interviewed.
4. A Post-abortion care check list was administered in each of the selected facilities.

3.6 Method of Data Collection

Quantitative data was collected in this study. Three (3) structured questionnaires were used in each of the facilities. The first was a facility information questionnaire which was used to assess Health facility information: background, organization of services, level of staffing, the range of reproductive health (RH) and EOC services offered provision of PAC related care, inventory of supplies and equipment and review of post abortion service statistics. The second questionnaire was administered to health care providers and the third to facility managers. The questionnaires were administered by trained post-abortion care nurse/midwives.

3.7 Quality Assurance of Data

The questionnaires and facility checklist were pretested in two healthcare facilities within Bauchi L.G.A.

Respondents were Doctors, nurse-midwives and CHEWs. Data collectors were midwives and nurses trained on PAC. Two day training for data collectors was conducted in Bauchi State specialist Doctors Rest Room.

3.8 Method of Analysis

Data collected was analyzed with the aid of computer Microsoft Excel version 2007.

3.9 Limitations of Study

1. Some of the respondents (facility managers) were not available during the visit, which made data collectors to visit such facilities twice and added to the cost of survey. That issue was handled by making phone calls to managers prior to the visits.
2. The study was mainly hospital based without a community component thereby not providing information from the community perspective, but the questionnaire carried some community aspects of post-abortion care.
3. Client exit interviews and direct procedure observation could not be included in this study due to time and financial limitations. However, efforts were made to solicit for funds from the state primary health care development agency and Bauchi state health management board.

3.9.1 Ethical consideration

Before embarking on the study permission was obtained from all relevant authorities in the state namely the Bauchi state Ministry of Health and State Hospitals Management board. Informed consent was also obtained from managers and Health care providers.

3.9.2 Duration of the study

The study was conducted within six months.

CHAPTER FOUR

RESULTS

The survey was carried out in Eighteen (18) public health facilities in Bauchi State, nine (9) of which are Primary Health facilities and the other nine (9) secondary health facilities (General Hospitals).

Eleven (11) of the health facilities were located in the urban area and the remaining seven (7) in rural areas. Access to seventeen (17) of the facilities was easy with only one facility difficult to reach.

Only one (1) facility had a distance of less than 5 kilometers to its nearest referral center. Thirteen (13) of the health facilities representing 72% of the facilities had their nearest referral center located more than 10 kilometers away.

Table 4.0: Availability of post-abortion care services

PAC services	PHC Facilities (n=9)	SHC Facilities (n=9)
24hrs PAC service	4(44%)	9(100%)
Free PAC service	3(33%)	8(89%)
Adequate staff for PAC	2(22%)	1(11%)
FP immediate PA period	8(89%)	9(100%)
Regular Contraceptives	9(100%)	9(100%)
Intra-facility contraceptive referral	1(11%)	9(100%)
STI Risk assessment	2(22%)	3(33%)

All the Secondary Health Care (SHC) facilities provided PAC services 24hours a day, only four (4) that is 44% of the Primary Health Care (PHC) facilities provided the service 24hrs a day. PAC services were free in 89% of the SHC facilities as against 33% in the PHC facilities. Paucity of staff to provide PAC services was a challenge in all the facilities. Intra-facility contraceptive referral arrangement was poor (11%) in PHC facilities. Sexually Transmitted Infections (STI) risk analysis was virtually lacking (28%) in all facilities (Table 4.0).

Table 4.1 Elements of PAC practiced in health facilities

Elements of PAC	PHC Facilities (n=9)	SHC Facilities (n=9)
Emergency PAC	3(33%)	9(100%)
Post abortion FP	8(89%)	9(100%)
Community engagement	1(11%)	3(33%)
Referral to other reproductive services	3(33%)	9(100%)
Contraceptive counseling	9(100%)	9(100%)

All facilities selected for the survey provided atleast one element of PAC services. Community engagement was lacking (33%) in all facilities. Emergency Post-abortion care was noticeably low in Primary health care facilities, only 3(33%) out of the 9 PHC facilities provide that service. Contraceptive counseling is available in all primary and secondary health facilities (Table 4.1) which is good because it forms the background for preventing unwanted pregnancy after abortions.

Table 4.2: Category of Staff that provides PAC services

Category of Staff	PHC facility (n=9)	SHC facility (n=9)
Doctor only	0 (0%)	0 (0%)
midwife/nurse only	0 (0%)	0 (0%)
Chew only	3 (33%)	0 (0%)

Doctor & Midwife	0 (0%)	5 (44%)
Doctor, Midwife/Nurse & CHEW	0 (0%)	4 (56%)
Midwife/Nurse & CHEW	6 (67%)	0 (0%)

Providing PAC services is a function of team work and availability of trained health providers, no facility recorded a Doctor or a nurse/midwife providing PAC services alone as shown by our findings but CHEWs did provide such services alone at some (33%) primary health care level due to lack of adequate Doctors and Nurse/Midwives at that level of care, but in most PHC facilities (67%) where Nurse/ Midwives are available, they worked together to provide the service. In SHC facilities (44%), Doctors and midwives together provided PAC to patients (Table 4.2).

Table 4.3: Availability of Coordinator for PAC services

Type of Facility	**Yes**	**No**
PHC (n=9)	0 (0%)	9 (100%)
SHC (n=9)	2 (22%)	7 (78%)

Only 22% of SHC facilities had a coordinator for PAC services. None of the Primary health (PHC) facilities had a coordinator for PAC services. The coordinator is that health worker who ensures that record for all cases of PAC cases in the facility are properly documented and ensure ensures clients/patients get the comprehensive PAC package before discharge from the health facility (Table 4.3).

Table 4.4: Supplies and equipment in facilities

Facility	Adequate logistic system for ordering and storage	Locked storage Area for medical supplies

PHC (n=9)	5 (56%)	5 (56%)
SHC (n=9)	7 (78%)	7 (78%)
Total (n=18)	12 (67%)	12 (67%)

A little over halve (56%) of the PHC facilities had no challenges with logistic system for ordering and storage of drugs and were not lacking in locked storage area (56%) for medical supplies (Table 4.4). However 78% of the SHC facilities had adequate logistic system for ordering and storage of commodities and locked storage area for medical supplies, this will to some extend ensure availability of PAC medical supplies that are in optimal condition for usage.

Table 4.5: Record keeping and system accountability

Facility	Adequate records	Service delivery guidelines	Logbook for MVA	Referral mechanism for complicated cases?	Referral letter for abortion cases	Appointment card for f/up
PHC (n=9)	2(22%)	0(0%)	0(0%)	5(56%)	3(17%)	0(0%)
SHC (n=9)	5(56%)	2(22%)	1(6%)	9(50%)	8(44%)	0(0%)
Total (n=18)	7(39%)	2(4%)	1(6%)	14(78%)	11(61%)	0(0%)

Only 39% of all the facilities surveyed had adequate records for abortion cases and the PHC facilities were more affected with only 22% of such facilities with such records. Service delivery protocols and guidelines for PAC were absent (0%) in PHC facilities and only available in 22% of the SHC facilities surveyed, the same applied to availability for MVA log book (Table 4.5).

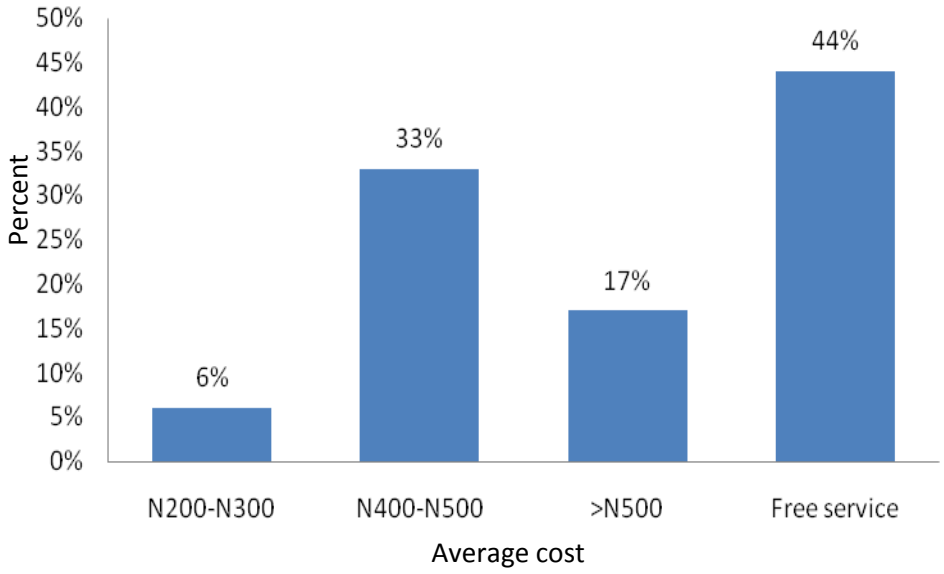


Figure 4.0: Average cost of managing first trimester incomplete abortions in all facilities

Cost of managing first trimester incomplete abortion was free in 45% of the facilities surveyed. The cost was as low as three hundred naira (₦300) in 6% of the facilities. The availability of free service in 44% of the facilities was attributed to the free maternal and child health care services being provided by the state government (figure 4.0).

Table 4.6: Availability of contraceptive services

Type of contraception	Usually Available	Sometimes Available	Never Available
Male Condom	1(11%)	8(44%)	8(44%)
Female Condom	0(0%)	8(44%)	10(56%)
Diaphragm	4(22%)	0(0%)	14(78%)
OCP	18(100%)	0(0%)	0(0%)
Progestin only pills	17(94%)	1(6%)	0(0%)
Injectable contraception	17(94%)	0(0%)	1(6%)
Implant	8(44%)	1(6%)	7(39%)
IUD	10(56%)	2(11%)	6(33%)
Female Sterilization	5(28%)	3(17%)	10(56%)
Male sterilization	1(11%)	0(0%)	17(94%)

The regular contraceptive commodities available in the facilities visited were combined oral contraceptive Pills (OCP) (100%) and injectables (94%). Male (11%) and female (0%) condoms were among the least available methods (Table 4.6).

Table 4.7: Total Abortion cases/facility/month

S/No	Facility	No of post abortion cases/month
1	G.H Bayara	2
2	G.H. Dass	4
3	G.H Alkaleri	4
4	G.H Ningi	7
5	G.H KafinMadaki	4
6	G.H Darazo	5
7	G.H Gamawa	3
8	G.H Giade	2
9	G.H Shira/Yana	4
10	Yalwa Dom. Mat (Bau)	3
11	PHC Durum	3
12	PHC GadarMaiwa	2
13	PHC Nasaru	3
14	PHC Miya	2
15	Udubo Maternity	2
16	PHC Zabi	1
17	PHC Disina	2
18	Town Maternity Akaleri	1
Total	18 facilities	55 cases

SHC facilities recorded more abortion cases per month when compared to PHC facilities with facilities such as General Hospital Ningiwhich recorded seven (7) PAC cases per month. All PHC facilities attended to at least one case of Post-abortion complication in a month (Table 4.7).

Table 4.8: Average per month of Post abortion cases admitted as percentage of total gynecological admission

S/n	Facility	Ave. Gyn. Admission/ Month	Ave abortion cases/month	Mortality/ Month	% Abortion cases/Month
1	G.H Bayara	19	2	0	11%
2	G.H. Dass	25	4	1	16%
3	G.H Alkaleri	26	4	1	15%
4	G.H Ningi	33	5	2	15%
5	G.H KafinMadaki	28	4	1	14%
6	G.H Darazo	31	5	1	16%
7	G.H Gamawa	28	3	2	11%
8	G.H Giade	22	2	1	9%
9	G.H Shira/Yana	34	4	2	12%
10	Yalwa Dom. Mat	18	3	0	17%
11	PHC Durum	15	2	0	15%
12	PHC G.Maiwa	14	2	0	14%
13	PHC Nasaru	21	3	0	14%
14	PHC Miya	17	2	0	12%
15	Udubo Maternity	22	4	0	18%
16	PHC Zabi	14	1	0	7%
17	PHC Disina	16	2	0	13%
18	Town MatAkaleri	23	3	0	13%

Taking the number of abortion cases admitted as a percentage of total Gynecological admissions, some PHC facilities (Udubo Maternity) had as high as 18% of abortion cases as percentage of all gynecological admission per month. The data showed that PHC facilities recorded an appreciable number of post-abortion complication cases as a percentage of total gynecological admissions per month, Yelwa Dom (17%), PHC Durum (15%), PHC G. Maiwa (14%). The SHC facilities had G.H Dass with the highest percentage of post-abortion complications (16%) as a percentage of total Gynecological admissions (Table 4.8).

Table 4.9: Availability of Equipment and Utility for Provision of PAC services

Facility type	Exam Table	Admission Beds	Chairs/ Benches	Toilet for patients	Running water	Electricity
PHC (n=9)	8(89%)	9(100%)	8(89%)	8(89%)	5(56%)	7(78%)
SHC (n=9)	9(100%)	9(100%0	8(89%)	9(100%)	6(67%)	9(100%)

Almost all the facilities had examination tables, Beds, chairs and Benches but runing water was a challenge in both PHC (56%) and SHC (67%) facilities. Electricity was available in all the SHC facilities at the time of visit due to the provision of Electricity generating sets and constant supply of diesel to the SHC facilities through contractors engaged by the state government. Admission beds were available in all the facilities (100%) so was Exam table and chairs/benches. Only one PHC facility (89%) visited was lacking Exam Table (Table 4.9).

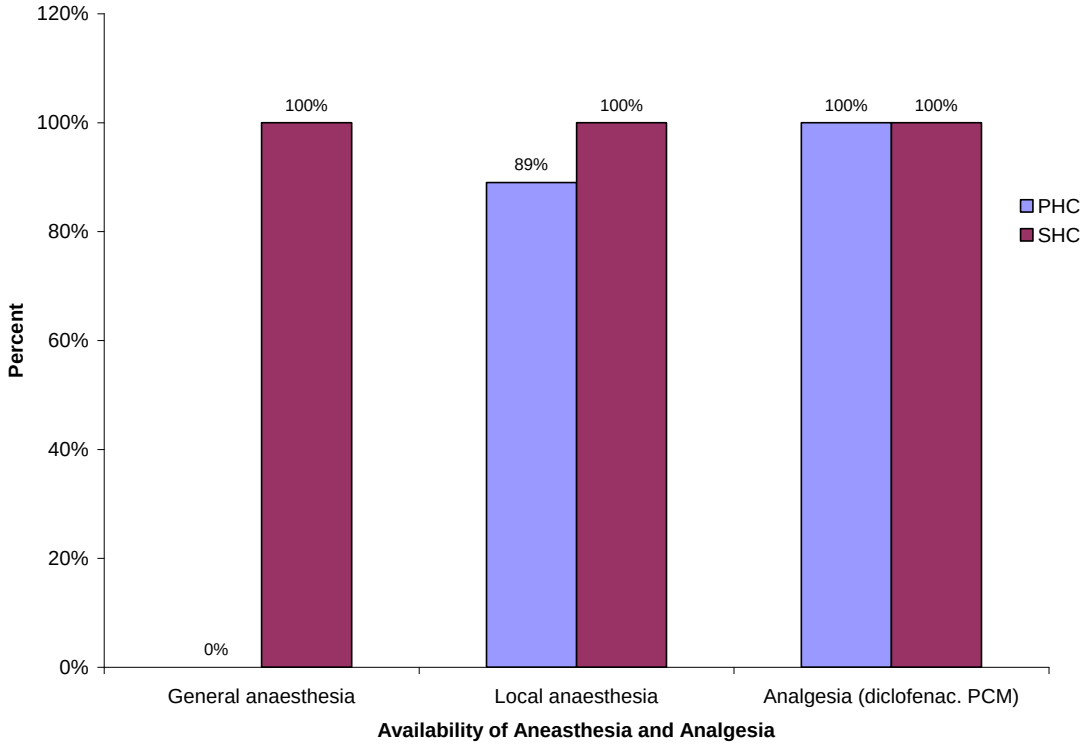


Figure 4.1: Availability of Aneasthesia and Analgesia

All the facilities surveyed had adequate analgesia required for provision of PAC. None (0%) of the PHC facilities provided general anaesthesia because operating theaters were only available in the SHC facilities, all (100%) of which provided general anaesthesia. (fig 4.1).

Table 4.10: Availability of service points Essential for provision of PAC

PAC Services point	PHC (n=9)	SHC (n=9)
MVA Room	1(11%)	7(78%)
Operating theater	0(0%)	9(100%)
Treatment Room	9(100%)	8(89%)
Recovery Room	2(22%)	7(78%)
Laboratory/side lab	4(44%)	9(100%)
Pharmacy	4(44%)	9(100%)
Emergency Room	1(11%)	8(89%)
FP room	7(78%)	9(100%)
HCT Room	1(11%)	8(89%)

MVA rooms were available in only 11% of PHC facilities as opposed to SHC facilities majority (78%) of which had MVA rooms. None (0%) of PHC facilities had an operating theater but all (100%) the SHC facilities had a functional theater. Only 11% of the PHC facilities had an emergency room as opposed to 89% of SHC facilities with such rooms which is vital in rapid response to post-abortion complication cases. Out of the 9 PHC facilities survyed and only two (22%) had HCT rooms while 89% of the SHC facilities had HCT rooms which are crucial as referral points for tackling other reproductive healthcare challenges (figure 4.7).

Table 4.11: Disposable supplies

Disposable item	Usually available n=18	Sometimes available n=18	Never Available n=18
Syringe and needle (5mls)	12(67%)	6(33%)	0(0%)
Cotton swab	16(89%)	2(11%)	0(0%)
Gauze	11(61%)	7(39%)	0(0%)
Spirit	15(83%)	3(17%)	0(0%)
Disinfectants	15(83%)	3(17%)	0(0%)
Antiseptics	13(72%)	5(28%)	0(0%)
Soap	13(72%)	5(28%)	0(0%)
Sanitary pad	9(50%)	9(50%)	0(0%)

Essential disposable supplies like syringes, cotton wool, guaze, spirit, dis-infectants and soap were usually are crucial to managing Post abortion complication cases. Syringe and needle usually available in only 67% of all the facilities visited, where as only 61% of the faciities usually had guaze. Soap and Antiseptics which are crucial in infection control were usaully available in only 72% of the faciities. Sanitary Pad was usually available in only halve (50%) of the facilities visited.Cotton swab (89%) was usually available in all the facilities except in two facilities (11%) where it was sometimes available. Spirit and disinfectants were only usually available in 83% of the facilities. None (0%) of the facilities visited reported non-available of disposable supplies through out (Table. 4.11).

Table 4.12: Availability of essential medical equipment and supplies

Essential Equipment	PHC Facility (n=9)	SHC Facility (n=9)
Clean linen/gowns	5(56%)	6(67%)
Exam gloves	7(78%)	9(100%)
Utility Gloves	4(44%)	9(100%)
Face mask	4(44%)	5(56%)
Eye protection	2(22%)	5(56%)
Apron	7(78%)	5(56%)
Adjustable lightening	0(0%)	8(89%)
Sterilizer	5(56%)	6(67%)
Stethoscope	9(100%0	9(100%)
Sphygmomanometer	9(100%)	9(100%)
Thermometer	9(100%)	9(100%)
Vaginal Speculum	7(78%)	9(100%)
Ovum forceps	4(44%)	9(100%)
Tenaculum	7(78%)	9(100%)

Majority of essential re-usable equipment e.g Aprons, Utility gloves etc were available mostly in SHC facilities when compared to PHC facilities. None (0%) of the PHC facilities had adjustable lightening for MVA while only 22% had eye protection googles. Only 44% of the PHC facilities had Utility gloves, face mask and tenaculum but all had stethescope, sphy and thermometer. Only 56% of SHC facilities had Apron, face masks

and Utility gloves but all (100%) had stethescope, sphyg, thermometer, Vaginal speculum, Ovum forceps, Tenaculum and Exam gloves (Table 4.12).

Table 4.13: Availability of essential Investigations and laboratory Services

Lab tests	PHC Facilities (n=9)	SHC Facilities (n=9)
Haematocrit (PCV)	1(11%)	9(100%)
Ultrasound scan	0(0%)	3(33%)
Blood grouping	2(22%)	9(100%)
Microscopy	5(56%)	9(100%0
Gram Staining	4(44%)	9(100%)
Culture media	1(11%)	8(100%)

Essential laboratory investigations were mostly available in SHC facilities when compared to PHC facilities. All (100%) SHC facilities had Haematocrit for PCV, Blood grouping, microscopy and Gram staining services but only 33% of them had Ultrasound scan services. None (0%) of the PHC facility had an Ultrasound service, only 11% had Haematocrit and culture Media services. Only 22% of the PHC facilities provided Blood grouping services (Table 4.13).

Awareness and Knowledge of PAC among Healthcare Providers in Bauchi State

One hundred and eight (108) healthcare providers were approached in the survey and out of that number, One hundred and five (105) respondents were interviewed with three (3) declining which gave a response rate of ninety-seven percent (97%). As shown in table 4.14, about halve (47%) of the respondents were Nurse/Midwives followed by Community Health Extension Workers (CHEWs) that make up 41% while 12% were medical doctors. The ages of the respondents ranged from 18 years to 52 years with an average of 31years and a standard deviation of 2.7years.

Table 4.14: Cadre of the Respondents

Respondents	Frequency (n=105)	Percent (%)
Doctors	13	12
Nurse/Midwives	49	47
CHEWs	43	41

Table 4.15: Socio-demographic characteristics of respondents

Variables	Doctors	Nurse/Midwives	CHEWs	Total
Sex				
Male	13(12%)	0(0%)	3(3%)	16(15%)
Female	0(0%)	49(47%)	40(38%)	89(85%)
Age (years)				
Under 28	2(2%)	12(11%)	8(8%)	22(21%)
28-37	6(6%)	20(19%)	19(18%)	45(43%)
38-47	3(3%)	11(10%)	11(10%)	25(24%)
48 and over	2(2%)	6(5%)	5(5%)	13(12%)
Marital Status				
Single	2(2%)	9(8%)	5(5%)	16(15%)
Married	11(10%)	39(37%)	38(36%)	88(84%)
Divorced	0(0%)	1(1%)	0(0%)	1(1%)
Other	0(0%)	0(0%)	0(0%)	0(0%)

Almost all the respondents (85%) were female with only a few (15%) males. All (100%) the Doctors were male while all (100%) the Nurse/Midwives were female. Twenty-one

(21%) were below 28 years of age, 43% were between 28-37 years and only 12% over 48 years. Eighty-four (84%) of the respondents were Married and 15% single (Table 4.15).

Table 4.16: Doctors Awareness, Knowledge and Practice of PAC

Question	Yes (%)	No (%)	Do not know (%)	Total (%)
Ever heard of PAC	13(100%)	0(0%)	0(0%)	13(100%)
Correct definition of PAC	13(100%)	0(0%)	0(0%)	13(100%)
Correct definition of unsafe abortion	13(100%)	0(0%)	0(0%)	13(100%)
Correct definition of Abortion	13(100%)	0(0%)	0(0%)	13(100%)
Unsafe abortion causes 13% maternal deaths in Nigeria	9(69%)	4(31%)	0(%)	13(100%)
Unsafe Abortion common in women < 20yrs old	13(100%)	0(0%)	0(%)	13(100%)
Failure to access FP services promotes unsafe abortion	13(100%)	0(0%)	0(%)	13(100%)
STI risk analysis worsens abortion complications	0(0%)	13(100%)	0(0%)	13(100%)
PAC increases uptake FP commodities	13(100%)	0(0%)	0(0%)	13(100%)
PAC increases illegal abortion	0(0%)	13(100%)	0(0%)	13(100%)
Strict abortion laws promotes unsafe abortion	13(100%)	0(0%)	0(0%)	13(100%)
Unsafe abortion a major cause of abortion sepsis	13(100%)	0(0%)	0(0%)	13(100%)
Best time to offer post abortion FP counseling is IMMEDIATELY	13(100%)	0(0%)	0(0%)	13(100%)
All modern contraceptive methods can be used for post-abortion FP	9(69%)	4(31%)	0(0%)	13(100%)
Married women can benefit from post-abortion contraceptive counseling	13(100%)	0(0%)	0(0%)	13(100%)
offer post-abortion contraceptive method before discharge	13(100%)	0(0%)	0(0%)	13(100%)

All (100%) of the Doctors were aware of PAC, they all know the correct definition of PAC and Unsafe abortion and abortion. All the doctors knew that unsafe abortion is commoner in

the adolescent group and that STI risk analysis does not worsen post-abortion complication but rather reduces it. However, only 69% of the doctors know that unsafe abortion causes 13% of maternal deaths worldwide and the same proportions (69%) are aware that all modern contraceptive methods can be used for post-abortion contraception. All (100%) doctors agreed that all married women should have access to post-abortion contraception and they all (100%) agreed that all women with post-abortion complications should go home with a contraceptive method at discharge (Table 4.16).

Table 4.17: Midwives/Nurses Awareness and Knowledge of PAC

Question	Yes (%)	No (%)	Do not know (%)	Total (%)
Ever heard of PAC	48(98%)	1(2%)	0(0%)	49(100%)
Correct definition of PAC	45(92%)	3(6%)	1(2%)	49(100%)
correct definition of unsafe abortion	12(24.5%)	36(73.5%)	1(2%)	49(100%)
Correct definition of Abortion	49(100%0	0(0%)	0(0%)	49(100%)
Unsafe abortion causes 13% maternal deaths in Nigeria	38(78%)	9(18%)	2(4%)	49(100%)
Unsafe Abortion common in women < 20yrs old	43(84%)	6(12%)	0(0%)	49(100%)
Failure to access FP services promotes unsafe abortion	36(73%)	12(25%)	1(2%)	49(100%)
STI risk analysis worsens abortion complications	20(41%)	26(53%)	3(6%)	49(100%)
PAC increases uptake FP commodities	41(84%)	8(16%)	0(0%)	49(100%)
PAC increases illegal abortion	5(10%)	44(90%)	0(0%)	49(100%)
Strict abortion laws promotes unsafe abortion	38(78%)	9(18%)	2(4%)	49(100%)
PAC promotes induced abortion	12(25%0	37(78%)	0(0%)	49(100%)
Unsafe abortion a major cause of abortion sepsis	46(94%)	2(4%)	1(2%)	49(100%)
Best time to offer post abortion FP counseling is IMMEDIATELY	39(80%)	9(18%)	1(2%)	49(100%)
All modern contraceptive methods can be used for post-abortion FP	19(39%)	29(59%)	1(2%)	49(100%)
Married women can benefit post-abortion contraceptive counseling	43(88%)	6(12%)	0(0%)	49(100%)
offer post-abortion contraceptive method before discharge	43(88%)	6(12%)	0(0%)	49(100%)

A total of forty-nine (49) midwives /Nurses working in the maternity, family planning and labour wards were interviewed. Almost all (98%) of the midwives and nurses were aware of PAC and ninety-two percent (92%) of them got its correct definition. Majority (80%) of them know that induced abortion is more common in the adolescent age group. Just over halve (53%) of the Midwives and nurses were aware of the importance of STI risk analysis in the management of post-abortion complications. To the question of whether strict abortion laws in Nigeria increases the prevalence of illegal/induced abortion, seventy-eight percent (78%) responded in the affirmative. Only 30% of the respondents were aware that all modern contraceptive methods can be used for post-abortion FP assuming there are no contraindications (Table 4.17).

Table 4.18: CHEWS Awareness, Knowledge and Practice of PAC

Question	Yes (%)	No (%)	Do not know (%)	Total (%)
Ever heard of PAC	22(51%)	1(2%)	20(47%)	43(100%)
Correct definition of PAC	19(44%)	16 (37%)	8(19%)	43(100%)
Correct definition of unsafe abortion	18(42%)	17(40%)	8(18%)	43(100%)
Correct definition of Abortion	30(70%)	13(30%)	0(0%)	43(100%)
Unsafe abortion causes 13% maternal deaths in Nigeria	19(44%)	14(33%0	10(23%)	43(100%)
Unsafe Abortion common in women < 20yrs old	33(77%)	10(23%)	0(0%)	43(100%)
Failure to access FP services promotes unsafe abortion	30(70%)	9(21%)	4(9%)	43(100%)
STI risk analysis worsens abortion complications	24(56%)	11(26%)	8(18%)	43(100%)
PAC increases uptake FP commodities	36(84%)	4(9%)	3(7%)	43(100%)
PAC increases illegal abortion	5(12%)	35(81%)	3(7%0	43(100%)
Strict abortion laws promotes unsafe abortion	30(70%)	7(16%)	6(14%)	43(100%)
PAC promotes induced abortion	12(28%)	31(72%)	0(0%)	43(100%)
Unsafe abortion a major cause of abortion sepsis	32(75%)	4(9%)	7(16%)	43(100%)
Best time to offer post abortion FP counseling is IMMEDIATELY	24(56%)	19(44%)	0(0%)	43(100%)
All modern contraceptive methods can be used for post-abortion FP	7(16%)	36(44%)	0(0%)	43(100%)
Married women can benefit from post-abortion contraceptive counseling	20(46%)	23(54%)	0(0%)	43(100%)
offer post-abortion contraceptive method before discharge	27(63%)	16(37%)	0(0%)	43(100%)

A total of forty-three CHEWs were involved in the survey. Just over halve (51%) of the CHEWs have heard of PAC with 47% not sure or don't know Less than halve (44%) of the CHEWs got the correct definition of PAC, a similar result (42%) is recorded regarding the definition of unsafe abortion but majority (70%) got the definition of Abortion correctly. About 70% of the CHEWs knew that strict abortion laws promote illegal/unsafe abortion. Only 16% knew that all modern contraceptives can be used for post-abortion FP. Less than halve (46%) of the CHEWs Knew that married women can benefit from post-abortion family planning counseling (Table 4.18).

Table 4.19: Best Method for Managing First Trimester Incomplete Abortion

Method	Doctors (%) (n=13)	Nurse/midwives (%) n=49	CHEWs (%) (n=43)
D & C	2(15%)	3(6%)	11(26%)
MVA	10(77%)	45(92%)	23(53%)
Misoprostol	1(8%)	0(0%)	0(0%)
Don't Know	0(0%)	1(2%)	9(21%)

Regarding the best method for managing first trimester incomplete abortion be it induced or spontaneous, majority (77%) of the Doctors and Nurse/Midwives (92%) said Manual Vacuum Aspiration (MVA) is the most effective procedure, while only 56% of the CHEWs said it is the most effective. Eight percent (8%) of the Doctors and none of the Nurses/Midwives and CHEWs said Misoprostol is effective (Table 4.19).

Table 4.20: Elements of PAC

Elements	Doctors (%) (n=13)	Nurse/Midwives (%) n=49	CHEWs (%) (n=43)
3 elements	6(46%)	27(55%)	18(42%)
5elements	5(39%)	13(27%)	3(7%)
Don't know	2(15%)	9(18%)	22(51%)

More than halve (51%) of the CHEWs are not aware of the elements of PAC. Some of the Doctors (39%) and Nurse/Midwives (27%) are aware that PAC has five (5) elements (Table 4.20).

CHAPTER FIVE

DISCUSSION

When Post-abortion care (PAC) is mentioned what comes to mind is all the necessary care given to women with abortion and its complications. This care is essential and it saves the lives of thousands women where ever it is being practiced effectively. It is a well known fact that lack of such care destroys the lives of many women and families especially in the developing countries where Nigeria belongs.[15] When we talk of PAC we are referring to five elements that makes the pillars of post-abortion care and these are provision of contraceptive and family planning services; emergency treatment, reproductive and other health services, counseling and service provider partnerships.

This research looked at the availability of post-abortion care in secondary health facilities in Bauchi it also looked at the availability of staff and Basic equip for PAC in hospital, MVA room, Laboratory services and analgesia. The use of MVA in health facilities was also investigated. Awareness and knowledge of health providers on abortion was assessed and case load of PAC cases and average number of patients that sought for post-abortion

care services at the facilities health facilities was looked into and finally the cost of post-abortion care especially that involving the use of MVA in the management of first trimester was estimated

5.1 Availability of Post-Abortion Care in Hospitals

Results from this study shows that all the Secondary Health Care (SHC) facilities provide PAC services 24hours per day and only four (4) that is 44% of the Primary Health Care (PHC) facilities provide the service throughout the day. To be effective in treating post-abortion complications and preventing mortality, emergency abortion care should be accessible 24hours a day.[43] Paucity of staff to provide PAC services is a challenge in all the facilities as seen in table 4.7.The study conducted by Malla[43] and his colleagues in Nepal also showed that providing 24hrs post-abortion care services is a major challenge due to lack of adequate staffing for the already established Post-abortion care units. That study showed that although staff at the hospital may be very committed to the establishment of the PAC unit, they may also be extremely busy with a high volume of obstetric patients in need of care and the study also concluded that for a health facility to establish the PAC unit as an integral part of the hospital's reproductive health services, a linkage needed to be created and fostered between the PAC unit and the following departments:

PAC services are provided only by CHEWs in 33% of the PHC facilities surveyed, while in 67% of such facilities midwives, Nurses and CHEWs provide same service to clients (Table 4.2). These health-care providers otherwise called midlevel service providers are generally cost-effective and may work in areas where doctors are scarce, providing health services to underserved Populations.

Only 22% of SHC facilities surveyed have a coordinator for PAC services and one of the Primary health (PHC) facilities have a coordinator for PAC services (Table 4.3). In the study in Nepal by Malla[43] and his colleagues, it was mentioned that the coordination among hospital departments and linkage to other services is an integral component of PAC services that greatly improves quality of care and allows PAC patients to utilize a range of needed services at the hospital effectively.[43] That studied showed that a linkage need to be created and fostered between the PAC unit and the following departments:

- Admitting
- Operating theater
- Obstetrics and gynecology clinic
- Outpatient FP clinic
- Central sterile services
- Pharmacy
- Equipment and supply
- Medical records
- Clinical laboratory[43]

This coordination among hospital departments and linkage to other services, which is an integral component of PAC services, greatly improves quality of care and allows PAC patients to utilize a range of needed services at the hospital effectively.

The importance of record keeping cannot be over emphasized but unfortunately only 39% of the facilities surveyed have adequate records for abortion cases and the PHC facilities are more affected with only 22% of such facilities having such records (Table 4.5). Inadequate record keeping, probably as result of the fear of prosecution when caught violating the abortion law, stigma associated with abortion and ignorance is the reason

why an accurate number of abortion cases being managed in hospital is difficult to come by.

5.2 Availability of basic equipment for PAC in Hospital

Even if health facilities are able to provide the much needed space, human resources and training to provide PAC services, the much needed intervention to save the lives of thousands of women dying annually as a result of post-abortion complications due to unsafe abortion will not decline unless the basic equipment needed to provide such services are available and functioning.

Our survey showed that almost all the facilities had examination tables, Beds, chairs and Benches but runing water was a challenge in both PHC (56%) and SHC (67%) facilities. Electricity was available in all the SHC facilities at the time of visit due to the provision of Electricity generating sets and constant supply of diesel to the SHC facilities through contractors engaged by the state government. Admission beds were available in all the facilities (100%) so was Exam table and chairs/benches. Only one PHC facility (89%) visited was lacking Exam Table (Table 4.9). Essential disposable supplies like syringes, cotton wool, guaze, spirit, dis-infectants and soap were usually are crucial to managing Post abortion complication cases. Syringe and needle usually available in only 67% of all the facilities visited, where as only 61% of the faciities usually had guaze. Soap and Antiseptics which are crucial in infection control were usaully available in only 72% of the faciities. Sanitary Pad was usually available in only halve (50%) of the facilities visited.Cotton swab (89%) was usually available in all the facilities except in two facilities (11%) where it was sometimes available. Spirit and disinfectants were only usually available in 83% of the facilities. None (0%) of the facilities visited reported non-available of disposable supplies through out (Table. 4.11).

Majority of essential re-usable equipment e.g Aprons, Utility gloves etc were available mostly in SHC facilities when compared to PHC facilities. None (0%) of the PHC facilities had adjustable lightening for MVA while only 22% had eye protection googles. Only 44% of the PHC facilities had Utility gloves, face mask and tenaculum but all had stethescope, sphy and thermometer. Only 56% of SHC facilities had Apron, face masks and Utility gloves but all (100%) had stethescope, sphyg, thermometer, Vaginal speculum, Ovum forceps, Tenaculum and Exam gloves (Table 4.12).

Essential laboratory investigations were mostly available in SHC facilities when compared to PHC facilities. All (100%) SHC facilities had Haematocrit for PCV, Blood grouping, microscopy and Gram staining services but only 33% of them had Ultrasound scan services. None (0%) of the PHC facility had an Ultrasound service, only 11% had Haematocrit and culture Media services. Only 22% of the PHC facilities provided Blood grouping services (Table 4.13).

Essential disposable supplies like syringes, cotton wool, guaze, spirit, dis-infectants and soap were usually are crucial to managing Post abortion complication cases. Syringe and needleusually available in only 67% of all the facilities visited, where as only 61% of the faciities usually had guaze. Soap and Antiseptics which are crucial in infection control were usaully available in only 72% of the faciities. Sanitary Pad was usually available in only halve (50%) of the facilities visited.Cotton swab (89%) was usually available in all the facilities except in two facilities (11%) where it was sometimes available. Spirit and disinfectants were only usually available in 83% of the facilities. None (0%) of the facilities visited reported non-available of disposable supplies through out (Table. 4.11). The study in Nepal by Malla[43] has highlighted the basic equipment and commodities required to be in place in order to provide MVA services in a hospital;

5.3 Equipment and Supplies Needed

5.3.1 Instruments and equipment

1. Consumable Supplies

Items that should be on hand, but are not required for all MVA procedures:

- Pan and pan cover (1 each)
- Bivalve (Graves) specula (small and medium)
- Uterine Tenaculum (1) or Vulsellum
- forceps (1)
- Pan emesis basin (1)
- Sponge forceps (2)1
- 10-20 ml syringe and 22-gauge needle for paracervical block (6 each)

2. MVA instruments

- MVA vacuum syringe, double valve (1)
- Plastic cannulae of different sizes (6 mm to 12mm)
- Adapters
- Silicone for lubricating MVA syringe o-ring (1tube)

3. Light source (to see cervix and inspect tissue)

4. Clear container or basin (for tissue inspection)

5. Simple magnifying glass (x 4-6 power) (optional)

6. Swabs/gauze

7. Antiseptic solution (preferably an iodophor such aspovidone iodine)

8. Gloves, sterile or high-level disinfected surgical gloves or new examination gloves

9. Gloves, utility

10. Local anesthetic (e.g., 1-2% lidocaine without mepinephrine)

11. Curette, sharp, large (1)

12. Tapered mechanical dilators: Pratt (metal) or Dennisto[43]

Before beginning the MVA procedure, the health care provider need to make sure that the following equipment and supplies are in the treatment room and in working order:

- Examination table with stirrups
- Strong light (e.g., gooseneck lamp)
- Seat or stool for clinician
- Plastic buckets for decontamination solution (0.5%chlorine)
- Puncture-proof container for disposal of sharps (needles)
- Leak-proof container for disposal of infectious waste
- convection oven (dry heat)

The items seldom required in uterine evacuation cases but are needed for possible emergency use include:

- Spirits of ammonia (ampules)
- Atropine
- IV infusion equipment and fluid (DSW or *DIS)*
- Ambu bag with oxygen (tank with flowmeter)[43]

Most of the equipment mentioned in the Nepal study were available in the secondary health facilities surveyed but that is not the same for the primary healthcare facilities because they (primary health facilities) handle simple complication and hence do not need complex equipment.

5.3.2 Contraceptive and family planning services

Results of the study showed that the most common contraceptive in use are the oral contraceptive pills and Injectables; combined oral contraceptive Pills (100% availability)

and injectables (94%) (Table 4.6 & figure 4.2) this finding shows that all facilities had at least one form of contraceptive available which agrees with the study conducted in Ethiopia by Gebreselassie and his colleagues where most of the facilities they visited during their study had a wide variety of contraceptivecommodities[42]unfortunately only 23% of those facilities offer post-abortion contraceptives services to their patients. Our study only looked at the availability of the commodities and not the category of clients it is offered to. In the same study by Gebreselassie,[42] provision of contraceptive counseling to post abortion cases was carried out in two-thirds of the facilities visited, our study showed that all the facilities did provided that service (Table 4.1).

MVA rooms were available in only 11% of PHC facilities as opposed to SHC facilities majority (78%) of which had MVA rooms. In the study carried out in ethiopia[42] of the total of 120 health facilities included in the study, just over half (n=120, 54%) of all facilities surveyed were able to respond to patients suffering from abortion-related complications by performing a uterine evacuation with either sharp curettage or manual vacuum aspiration (MVA) furthermore, only three (13%) of all of the public sector health facilities were able to provide uterine evacuation to patients. Very few of the facilities used MVA in that study, of the 65 facilities that were able to perform uterine evacuations, only one-quarter have functioning MVA instruments. This information was further corroborated by a record review of the actual procedures performed. The overwhelming majority (94% of the procedures) were completed using sharp curettage.

The exchange of clients for PAC services between the public and private sector facilities was almost nonexistent. Only one health center indicated that they commonly received patients referred from private practitioners for the treatment of abortion complications; none of the public sector facilities ever referred patients with abortion complications to private facilities.

None (0%) of PHC facilities had an operating theater but all (100%) the SHC facilities had a functional theater. This finding is not surprinsing since primary facilities are expected to refer complex post-abortion cases to the secondary level of care.

Only 11% of the PHC facilities surveyed had an emergency room as opposed to 89% of SHC facilities with such rooms. The emergency room is vital in rapid response to post-abortion complication cases. Out of the 9 PHC facilities and only two (22%) had HCT rooms while 89% of the SHC facilities had HCT rooms. HCT is crucial as referral points for tackling other reproductive healthcare challenges (Table. 4.10).

All the facilities surveyed had adequate analgesia required for provision of PAC. This analgesia or pain killers are usually giving to patients before and after the MVA procedure to reduce the pain associated wih the procedure. None (0%) of the PHC facilities provided general anaesthesia because operating theaters were only available in the SHC facilities, all (100%) of which provided general anaesthesia (figure 4.1).

5.3.3 MVA in hospitals

MVA is safe and effective method and is highly recommended for management of first trimester incomplete abortion in not only primary health centers but also in secondary and tertiary centers.[38] Our study showed that only 11% of PHC facilities have MVA rooms and 78% of the SHC facilities do have MVA rooms. This clearly shows that the use of MVA by health workers for management of incomplete abortion is quite low in the PHCs where they are most need this finding agree to the findings of a research carried out in Nigeria[48], where only about 45% of doctors reported that they use manual vacuum

aspiration (MVA) for the management of abortion and its complications in the first trimester, while 25% use dilatation and curettage (D&C) with its associated complications. Another study in Colombia carried out in 2007, just 11% of providers had MVA equipment. Inadequate availability of MVA equipment and lack of training in its use are possible reasons why medical doctors rely on and prefer D&C over all other types of procedures to provide first trimester abortion care.

This study showed that Doctors and Nurse/Midwives know that MVA is the best method for managing first trimester miscarriage be it induced or spontaneous, while only 56% of the CHEWs said it is the most effective. Eight percent (8%) of the Doctors and none of the Nurses/Midwives and CHEWs knew that Misoprostol is effective (Table 4.19). Use of MVA by midwives has been an effective means of expanding PAC services to primary and lower-level health facilities in other African countries[37] as shown in Ethiopia where the Ethiopian Federal Ministry of Health chose promotion of MVA by midlevel providers (including midwives) as a way to provide PAC to women in the most distant regions of the country.

5.3.4 Knowledge of PAC in staff

The availability of knowledgeable health care providers in health facilities is the key to ensuring women with complication of abortion get the best response that will save their lives and drastically reduce morbidity and mortality.

All (100%) of the Doctors were aware of PAC, they all know the correct definition of PAC and Unsafe abortion and abortion. All the doctors knew that unsafe abortion is

commoner in the adolescent group and that STI risk analysis does not worsen post-abortion complication but rather reduces it. However, only 69% of the doctors know that unsafe abortion causes 13% of maternal deaths worldwide and the same proportions (69%) are aware that all modern contraceptive methods can be used for post-abortion contraception (Table 4.16). The Nurse/Midwives were also aware of PAC and most of them got the definition of PAC right but just over halve (53%) of the Midwives/ nurses were aware of the importance of STI risk analysis in the management of post-abortion complications and only 30% of the Nurse/Midwives were aware that all modern contraceptive methods can be used for post-abortion FP assuming there are no contraindications (Table 4.17). The study clearly showed that the CHEWs who are the care providers at the community level that is the primary health care level are not as knowledgeable as the Doctors and nurses because only just over halve (51%) of them have heard of PAC with about 47% of them not aware. Only 16% of the CHEWs knew that all modern contraceptives can be used for post-abortion FP and Less than halve (46%) Knew that married women can benefit from post-abortion family planning counseling (Table 4.18). The awareness on PAC is quite high among the Doctors and Nurse/Midwives when compared to the result of a study by Adinma[56]and his colleagues in southeastern Nigeria. The study showed that 75% of health care providers which included Doctors Midwives and Nurses were aware of PAC services and 88.8% offered counseling services.[56] A study in the literature showed that only 18.2% of the doctors know the standard procedures such as manual vacuum aspiration (MVA) for the management of patients with abortion and abortion complications.[57] How much health care providers know about post-abortion care and of course how they manage such patients is very important. The CHEWs who are closer to the people in the community are less aware of

PAC and had the least knowledge according to our findings and this is the group that needs the knowledge and training on PAC if appreciable change is required.

5.3.5 Case load of PAC in hospitals

SHC facilities recorded more abortion cases per month when compared to PHC facilities with facilities such as General Hospital Ningiwhich recorded seven (7) PAC cases per month. All PHC facilities attended to at least one case of Post-abortion complication in a month (Table 4.7).

Taking the number of abortion cases admitted as a percentage of total Gynecological admissions, some PHC facilities (Udubo Maternity) had as high as 18% of abortion cases as percentage of all gynecological admission per month. The data showed that PHC facilities recorded an appreciable number of post-abortion complication cases as a percentage of total gynecological admissions per month, Yelwa Dom (17%), PHC Durum (15%), PHC G. Maiwa (14%). The SHC facilities had G.H Dass with the highest percentage of post-abortion complications (16%) as a percentage of total Gynecological admissions (Table 4.8). Some studies in Nigeria showed that abortion complications constituted 41.1% of all Gynecological admissions[41, 42] which seem to be a bit higher than the finding in this research and may not be unconnected with the poor record keeping observed in the surveyed health facilities in our study but another study in which a 10-year descriptive review of 118 consecutive cases of complicated induced abortions was carried out, complications of induced abortion constituted 2.3% of maternal admissions, 5.6% of gynecological admissions and 22.6% of maternal deaths,[66]the percentage of abortion complication as a percentage of all gynecological admissions was less than what was obtained in our study.

5.3.6 Cost of post-abortion care

The high cost of accessing medical service in the developing world is quite disheartening. This is because only the rich can afford comprehensive, qualitative, emergency services. The unfortunate thing is that these services are only readily available at the tertiary public health facilities and private clinics and hospitals which are of course unaffordable for the poor. This study showed that the cost of managing first trimester incomplete abortion is free in 45% of the facilities surveyed. This finding agrees with that of Jane**,** Stinson and Orner[35] in a qualitative study on Health care providers' attitudes towards termination of pregnancy in South Africa they also reported that, women with abortion complications resulting from either spontaneous or induced abortion were treated in secondary or tertiary-level hospitals free of charge. The cost is as low as three hundred naira (2USD) in 6% of the facilities in Bauchi which much lower when compared to the findings of Benson[68] and his colleagues in their research. They estimated that PAC with treatment of moderate complications costs about US $112 (₦16, 800) and that a simple PAC costs US $70. In cases needing simple PAC, treatment with manual vacuum aspiration the cost is US $68 (N10, 200). The cost is also much higher because they factored in both direct and indirect costs while in our study we only looked at the direct cost and the total estimated price of items a patient is was required to spend (figure 4.0). This low cost and free services reported are due to the free maternal and child health care services being provided by the State government and of course as a result of funds from the MDGs program, but the question is 'how long will these free services last?'.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Post-abortion care services need not to be dependent on the availability of obstetrician/Gynaecologists or Surgeons. Trained Nurse/Midwives and CHEWs can safely provide first line post-abortion care services as outpatients care and equally identify and refer serious cases to the next level of care at a cost the average Nigerian family can afford, all that is required is the basic training, motivation, supportive supervision and regular supply of essential equipment and supplies needed.

The results from this study has demonstrated that there is an urgent need to introduce and adopt a comprehensive PAC package of services in the public sector health facilities in Bauchi State in order to meet the family planning needs of women and in so doing reduce unwanted pregnancies and by extension a reduction in maternal morbidity and mortality in the state and the country at large.

6.2 Recommendations

Specifically, the study recommends the following:

- Bauchi state MOH and PHCDA should provide the entire PAC package, including family planning counseling and method provision and choice at both PHC and SHC facilities regardless of the emergency treatment procedure used.
- Facility managers in both PHC and SHC facility should ensure provision of on-site family planning counseling to post-abortion cases by designated staff prior to discharge, and for contraceptive methods: refer clients to the family planning clinic through an established referral mechanism.
- Managers of Public health facilities should establish strong functional links between emergency post-abortion care services and family planning services and also ensure availability of all reversible modern methods, with emphasis on long-acting reversible contraceptives.
- The State MOH, PHCDA and Hospital management board should train health care providers on family planning counseling and interpersonal communication skills and also ensure follow up with supportive supervision.
- The State MOH, PHCDA and Hospital management board should work with Development partners in the health sector to ensure the availability of adequate and sustainable technical support and expansion of PAC services to the community level.

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APPENDICES

Appendix A

Assessment of Post-abortion Care Services in Public Health Facilities in Bauchi State

(To be administered to Head/Manager of health facility)

IDENTIFICATION			
LOCAL GOVERNMENT AREA(LGA) _____			
TYPE OF LOCATION/SETTLEMENT: Urban = 1 Rural = 2			
DISTANCE TO NEXT REFERRAL CENTER:<5KM = 1; 6-10KM = 2; >10KM= 3			
LOCALITY NAME: _____			
NAME OF HEALTH FACILITY_____.			
ADDRESS OF HEALTH FACILITY_____			
_____			
NAME OF RESPONDENT_____			
AGE OF RESPONDENT (YEARS)_____			
SEX OF RESPONDENT___M_____F_____			
DESIGNATION OF RESPONDENT_____			

Introduction:

Hello, my name is…….. I am staff of Bauchi State Ministry of Heath. We are conducting a research survey designed to help us better understand the current state of Post abortion care services available in Public Health Facilities in Bauchi State. We would like to obtain your professional assessment of certain aspects of this practice.

We would greatly appreciate if you base your answers on your experience and knowledge, or if you lack actual experience, then on your perception of the situation.

Your responses to this questionnaire will be completely confidential and will be used for purposes of this research only. No personal reference will be made to your participation in this survey. We will combine your responses with those of other health care providers to describe the general picture of Post abortion care Services in Bauchi State.

Do I have your permission to proceed with the interview? _____Yes _____No

If you have any questions about this survey or the study please call Dr. HASSAN SaniBala, A.B.U Zaria. I can also be reached at 08035137046 or by email at sbhmisau@yahoo.com.

Thank you.

Name and signature of Interviewer: _____

Date of interview: __|__:__|__:__|__|__|___

Day Month Year

Time Started: ____|___|___|__

Interview outcome: 1. Completed □ 2. Refused □ 3. Incomplete □

4. Not available for interview□

A) Operations of the health facility

1. What type of primary health facility is this?

   1.1 Dispensary

   1.2 Health post

   1.3 Health centre

   1.4 Maternity/MCH clinic

   1.5 Primary Health Care centre

   1.6 Comprehensive health centre

2. What type of Secondary health facility is this?

   2.1 Cottage hospital

   2.2 General hospital

   2.3 Specialist hospital

3. Who owns the health facility in 1 & 2 above?

   Local government 1

   State government 2

(B) General Facility Information

I would like to ask you some questions about this Facility.

I. AVAILABILITY OF SERVICES

S/n	Availability of Service	Yes	No	Comment
1.	Does your facility provide post-abortion care service 24 hours a day?			
2.	Are PAC services free?			
4.	Do you have adequate staff to meet the need of post abortion clients?			
5.	Does the hospital officially offer family planning services in the immediate post-abortion period as part of PAC services?			
6.	Are contraceptive services available?			
S/N	Questions	Yes	No	Comments
7.	What types of contraceptive services are provided?			
	a. Counseling			
	b. Provision of contraceptive commodities			
8.	Is there an agreed contraceptive referral arrangement within the site?			
9.	Is STI risk assessment being conducted?			
10.	What are the major obstacles to providing contraceptive services to abortion clients? (check those that apply)			
	a) Staff not adequately trained in contraceptive services			
	b) Staff do not have time to counsel abortion clients			
	c) Contraceptive methods are not available at all times for abortion clients			
	d) Lack of private place for counseling			
	e) Lack of communication between contraceptive services clinic and other wards			
	f) Lack of commitment by administration, head of department, nurses etc.			

	g) Clients not interested in discussing contraceptive services			
	h) Other, specify:			

II. AVAILABILITY OF SPACE AND EQUIPMENT

S/n	Availability of space	Yes	No	Comment
12.	Where is abortion services currently provided in this facility?			
	a) In the Delivery Room			
	b) In the operating room			
	c) In special dedicated room			
	d) Other, specify:			
13.	Where do abortion clients recover after treatment?			
	a) Within the same place of emergency treatment			
	b) In a designated place within the facility			
	c)Discharge home immediately after treatment			
	d) Other, specify:			
14.	What is the average hospital stay for incomplete first trimester abortions?			
	a) 2 – 6 hours			
	b) 6 – 12 hours			
	c) 12- 24 hours			
	d) Other, specify:			
15.	Where is post-abortion family planning counseling and services offered?			
	a) Within the same place of emergency treatment			
	b) In a designated place at the maternity.			
	c) Where women recover after the emergency treatment			
	d) In the outpatient clinic			
	a) Other, specify:			
16.	Is there an adequate area (clean, private, and equipped with the basic elements needed to ensure the patient's safety) available to perform uterine evacuation and separate from the operating room?			
17.	Is the operating room equipped to provide timely emergency care to abortion patients with complications?			
18.	Is there enough privacy in the abortion area to provide family planning methods?			
	<u>Supplies and Equipment</u>			
19.	Are there logistic systems adequate to ensure appropriate ordering and storage?			
20.	Is there a locked storage area for medical supplies and equipment?			
21.	Does the facility have logistics, equipment or infrastructure problems to perform surgical sterilization or insert IUDs?			

22.	Is the facility as a whole experiencing problems in regards to availability of family planning methods?			
	STAFF AND TRAINING			
23.	Is there a coordinator/supervisor in charge of post-abortion care services?			
24.	What kinds of staff provide post- abortion services? (Check when those apply):			
	a) Doctor			
	b) Midwife			
	c) CHEW			
	d) Others, specify:			
25.	What kinds of staff counsel abortion clients for contraceptives? (Check when those apply):			
	a) Doctor			
	b) Midwife			
	c) CHEW			
	c) Others, specify:			
26.	Does the facility have providers trained in Manual Vacuum Aspiration (MVA)?			
27.	Does the facility have competent providers to perform D&C at any time of the day			
28.	Does the facility have providers that need training in family planning?			
29.	Do health providers know about other reproductive health services to which they can refer patients?			

RECORD KEEPING/ SYSTEM ACCOUNTABILITY

s/n	System accountability	Yes	No	Comment
30.	Are there adequate record keeping for abortion cases?			
31.	Are adequate procedures for record keeping, monitoring and evaluation in place?			
32.	Are there service delivery protocols or guidelines for post abortion care?			
33.	Is there a log book in which uterine evacuation procedures are recorded?			
34.	Is informed consent requested prior to IUD insertion?			
35.	Does the hospital have IEC materials on contraceptive methods?			
36.	Does the hospital have referral mechanisms for complicated abortion cases?			
37.	Are there referral or appointment cards given to clients prior to discharge?			

43. How much (average) do patients with uncomplicated first trimester incomplete abortion spend for treatment in this facility? (Range in naira)_____

Appendix B

Assessment of PAC Services in Public Health Facilities in Bauchi State

Service provider Awareness & knowledge of Post-abortion care

IDENTIFICATION	
LOCAL GOVERNMENT AREA(LGA) _____ LOCALITY NAME: _____ NAME OF HEALTH FACILITY_____. ADDRESS OF HEALTH FACILITY_____ _____ NAME OF RESPONDENT_____ AGE OF RESPONDENT (YEARS)_____ SEX OF RESPONDENT___M_____F_____ DESIGNATION OF RESPONDENT_____	

Introduction:

Hello my name is…… I am are carrying out a research project designed to help us better understand the current state of Post abortion care services available in Public Health Facilities in Bauchi State. We would like to obtain your professional assessment of certain aspects of this practice.

We would greatly appreciate if you base your answers on your experience and knowledge, or if you lack actual experience, on your perception of the situation.

Your responses to this questionnaire will be completely confidential and will be used for purposes of this research only. No personal reference will be made to your participation in this survey. We will combine your responses with those of other health care providers to describe the general picture of Post abortion care Services in Bauchi State.

Do I have your permission to proceed with the interview? _____Yes _____No

If you have any questions about this survey or the study please contact Dr. HASSAN SaniBala, A.B.U Zaria. I can also reached on 08035137046 or by email at sbhmisau@yahoo.com.

Thank you.

Name and signature of Interviewer: _____

Date of interview: __|__:__|__:__|__|__|___

Day Month Year

Time Started: ____|___|___|__

Interview outcome: 1.Completed□2.Refused□ 3.Incomplete□4.Not available for interview□

(A) Awareness and Knowledge of PAC

S/N	Question	Yes	No	Comment	Skip
100	Have you ever heard of Post-abortion care (PAC)?				If NO skip to 102
101	PAC is an approach for decreasing morbidity and mortality from complications of unsafe and spontaneous abortion				
102	Unsafe abortion is not a procedure for terminating unwanted pregnancy by an unqualified personal using minimal medical standards				
103	Spontaneous abortion is the natural loss of pregnancy before the gestational age of 28 weeks				
104	Unsafe abortion causes 13% of maternal deaths in Nigeria				
105	Unsafe abortion is commoner in women less than 20 years of age				
106	Lack of access to Family Planning services promotes unsafe abortion				
107	Carrying out a sexual transmitted infections (STI) risk analysis can promote abortion complications				
108	Male/Husbands involvement can promote abortion complications				
109	Post abortion care (PAC) can increase use of FP services				
110	Post abortion care (PAC) can increase illegal abortion				
111	In your understanding, which is best method for managing first trimester incomplete abortion?				
	1. D & C				
	2. MVA				
	3. MISOPROSTOL				
	4. DK				

112	Have you received any training on PAC?				
113	PAC has:-				
	1. Three (3) elements				
	2. Five (5) elements				
	3. DK				
114	Strict abortion Laws contributes to unsafe abortion in Nigeria				
115	Does post-abortion care encourage induced abortion?				
116	Unsafe abortion is a major cause of abortion sepsis in Nigeria.				
117	Do you think Manual Vacuum aspiration (MVA) can be carried out at the level of PHC to manage incomplete abortion?				
118	The best time offer contraceptive service after treatment of post abortion complication is IMMEDIATELY				
119	All modern contraceptive methods can be used for post-abortion FP				
120	Married women can be offered post-abortion contraceptive counseling.				
121	Should abortion patients be offered post abortion contraceptive counseling while they are still at the health facility?				
122	Should abortion patients be offered a contraceptive method while they are still at the health facility?				

Appendix C

FACILITY CHECKLIST

Instructions:

Check Yes if item is available, functioning and adequate

Check No if the item is not available, no functioning or not available

Note any comment about an individual item at the comment colunm

Facilities/ Equipment	Yes	No	Comments
Patient changing area			
Visual privacy			
Auditory privacy			
Exam table (with stirrups)			
Beds			
Chairs or benches			
Toilet for patients			

Sink			
Running water			
Adequate ventilation			
Locked storage area (for medical supplies/equipment)			

REUSABLE EQUIPEMENT AND SUPPLIES

Instructions:

Check yes if item is available, functioning and adequate

Check No if the item is not available, no functioning or not available

Note any comment about an individual item at the comment column

Reusable equipments and supplies	Yes	No	Comments
Clean linens (gowns, sheets, towels, etc			# of pairs_____
Exam gloves (note number of pairs)			# of Pairs_____
Cleaning gloves (note number of pairs)			
Reusable masks			
Eye protection (glasses, goggles)			
Surgical gowns or aprons			
Adjustable lighting			
Stool			

Instrument table, tray or shelf			
Sterilizer (autoclave)			
Stethoscope			
Blood pressure gauge			
Thermometer			
Vaginal speculum			
Sponge or ovum forceps			
Tenaculum			

DISPOSABLE SUPPLIES

Instructions:

Check USUALLY if the item is always or nearly always available, functioning and adequate

Check SOMETIMES if the item is sometimes or occasionally available, functioning and adequate

Check NEVER if the item is not available, not functioning and not adequate

Note any comment about an individual item at the comment column

Disposable supplies	Usually	Sometimes	Never	Comments
Disposable sterile gloves				
Disposable masks				
Disposable 10cc syringes with				

needles				
Cotton swabs				
Gauze				
Cotton				
Alcohol/spirit				
Disinfectant (Jik, etc.)				
Antiseptic (for cleaning vagina & cervix)				
Soap				
Sanitary pads				
IEC materials (for patients to keep)				

LABORATORY SERVICES AND TESTS

Instructions:

Check USUALLY if the item is always or nearly always available, functioning and adequate

Check SOMETIMES if the item is sometimes or occasionally available, functioning and adequate

Check NEVER if the item is not available, not functioning and not adequate

Note any comment about an individual item at the comment column

Laboratory Services and tests	Usually	Sometimes	Never	Comments
Haematocrit				
Haemoglobin				

Ultrasound				
Radiology				
Blood grouping & cross-match				
Transfusion				
Blood bank				
Microscope				
Gram-staining materials				
Culture media & supplies				

MEDICATION CHECKLIST

Instructions:

Check USUALLY if the item is always or nearly always available, functioning and adequate

Check SOMETIMES if the item is sometimes or occasionally available, functioning and adequate

Check NEVER if the item is not available, not functioning and not adequate

Note any comment about an individual item at the comment column

Medications	Usually	Sometimes	Never	Comments

General anesthesia (specify)				
Halothan				
Enflurane				
Local anesthesia (specify)				
Zylocaine				
Buvicaine				
Analgesia (specify)				
Diclofenac				
Felden				

CONTRACEPTIVE CHECKLIST

Instructions:

Check USUALLY if the item is always or nearly always available, functioning and adequate

Check SOMETIMES if the item is sometimes or occasionally available, functioning & adequate

Check NEVER if the item is not available, not functioning and not adequate

Note any comment about an individual item at the comment column

Contraceptives	Usually	Sometimes	Never	Comments

Male condom				
Female condom				
Diaphragm				
Combined oral contraceptive				
Progestin only pill				
Injectable				
Implant				
IUCD				
Female sterilization				
Male sterilization				
Other method (specify)				

Appendix D

POST-ABORTION CASE LOAD AND MORTALITIES IN THE LAST 12 MONTHS (JAN-DEC. 2010)

Month	Total Gyn/Obs Admission	Total Abortion Admission	Mortality/ Death	Comment
Jan				
Feb				

Mar				
Apr				
May				
Jun				
Jul				
Aug				
Sep				
Oct				
Nov				
Dec				
Total				