

Despite global efforts to reduce preventable maternal and neonatal mortality, Nigeria's maternal mortality ratio is estimated at 576 deaths per 100,000 live births and neonatal death is estimated at 37 per 1,000 live births¹.

Maternal and newborn deaths due to pre-eclampsia and eclampsia (PE/E) are preventable, yet in Nigeria this is the most significant direct cause of maternal mortality.

Population Council conducted a landscape analysis on PE/E in 2015 in seven states in Nigeria (Bauchi, Cross River, Ebonyi, Katsina, Kogi, Ondo, Sokoto). The main objectives of the landscape analysis were:

- To understand the level of programmatic and policy support for PE/E prevention and treatment;
- To analyze the gaps in providers' knowledge and competence in preventing, detecting, and managing PE/E;
- To determine primary health care (PHC) facilities' capacities to manage PE/E;
- To assess community awareness, beliefs, and experiences around PE/E;
- To understand the volume of research on PE/E in the last 15 years; and
- To determine priority areas for research and programmatic interventions around PE/E.

The Ending Eclampsia project seeks to expand access to proven, underutilized interventions and commodities for the prevention, early detection, and treatment of pre-eclampsia and eclampsia and strengthen global partnerships.

PE/E IN BRIEF

- Pre-eclampsia is a condition in pregnant women marked by an increase in blood pressure and protein in urine after 20 weeks gestation.
- Providing high quality antenatal care improves the prevention and early detection of pre-eclampsia and can prevent its progression to eclampsia.
- Eclampsia is a life-threatening condition characterized by convulsions in women with PE.
- Women in developing countries are 300 times more likely to die from eclampsia than women in developed countries.
- Pre-eclampsia and eclampsia can be managed by administering anti-hypertensive drugs and magnesium sulphate (MgSO₄).
- MgSO₄ is the safest and most effective treatment for severe pre-eclampsia and eclampsia, and is one of the 13 UN Life-Saving Commodities for Women and Children.
- PE/E and other hypertensive disorders in pregnancy increase the risk of pre-term births, which can lead to low birth weight, anemia, and stunting.
- Improved prevention, increased detection, and effective treatment of PE/E can prevent unnecessary maternal and newborn deaths.

NATIONAL POLICY AWARENESS

Policymakers appear to understand the enormous burden of PE/E and its consequences for maternal and newborn survival. Though a majority of stakeholders interviewed understood the importance of antenatal care (ANC) for early detection of PE/E, few were aware of national guidelines on the diagnosis and management of PE/E.

“Studies have shown MgSO₄ is the best option [...] but I have not seen a national protocol written as such.”

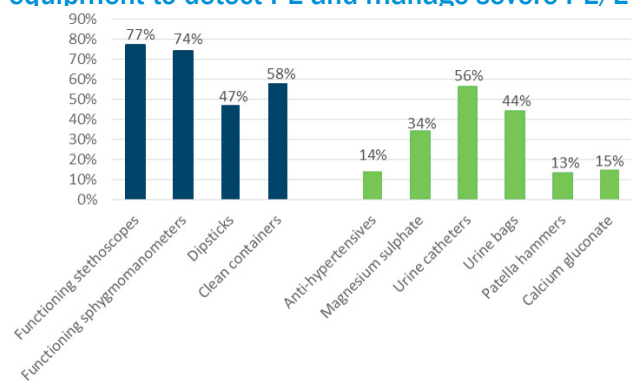
—POLICYMAKER, ONDO STATE

FACILITY CAPACITY AND PREPAREDNESS

To assess institutional preparedness, researchers visited 96 facilities in seven states in Nigeria and recorded that only 17% of the facilities had guidelines available for management of pre-eclampsia, 31% had all ANC equipment for detecting PE/E and 34% use MgSO₄ for treating eclampsia.

During these facility assessments, researchers determined whether the facilities had the key ANC equipment required to detect pre-eclampsia, manage severe PE/E, and monitor for MgSO₄ toxicity (figure 1).

FIGURE 1 Proportion of facilities with key equipment to detect PE and manage severe PE/E



When asked, 42% of facility managers reported always using MgSO₄ to treat PE/E, 20% said it is sometimes used, and 39% reported that it is never used. When asked how they obtain MgSO₄, 36% of managers said they receive it routinely from central supply, 17% said the facility purchases it from the market, 39% ask clients to purchase it, and 9% said they procure it elsewhere (such as NGOs).

“The drugs are not always in stock. It is not available the way it supposed to be; we have not attained the ideal situation yet.”

—ASST. DIRECTOR MEDICAL SERVICES, CROSS RIVER STATE

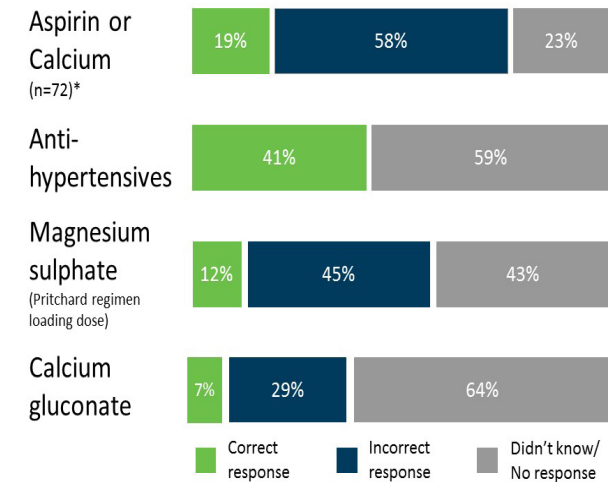
Hospitals have the capacity to perform most components of emergency obstetric and neonatal care (EmONC), but the landscape analysis showed limited capacity at PHCs for conducting even basic EmONC.

PROVIDER KNOWLEDGE AND SKILLS

Providers had good knowledge on signs and symptoms of PE (64%) and eclampsia (81%), but only 48.5% could correctly identify signs and symptoms of chronic hypertension and 9% could identify severe PE correctly.

Researchers also assessed health providers’ knowledge related to drugs used for preventing and managing PE/E, as well as calcium gluconate to treat MgSO₄ toxicity (figure 2).

FIGURE 2 Provider knowledge of drugs for PE/E prevention and management (n=379)



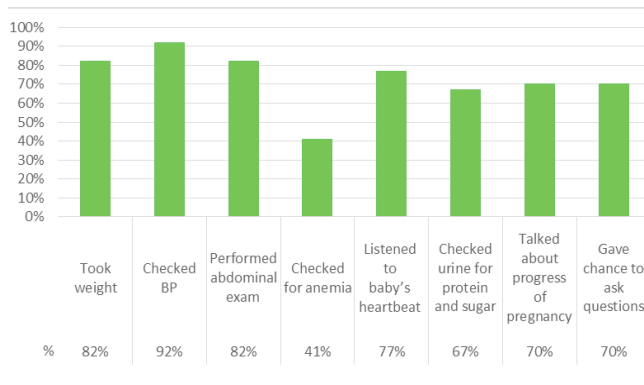
*Number of providers who had reported awareness of prophylactic drugs for PE/E

Figure 2 shows limited provider knowledge on prophylactic use of calcium and aspirin for women at risk of PE and which anti-hypertensives (aldomet or nifedipine) to use for managing high BP during pregnancy. The Pritchard regimen for MgSO₄ administration is considered the ‘gold standard’ for preventing and treating convulsions in severe PE/E, but few providers (12%) could accurately describe the appropriate doses of MgSO₄ or name calcium gluconate as the antidote for MgSO₄ toxicity (7%).

QUALITY OF CARE

Quality of care was assessed through observations of 136 client-provider interactions and 136 client exit interviews with the same pregnant women. Researchers assessed eight essential components of quality ANC. Figure 3 describes the components the clients received during observations.

FIGURE 3 Percent of clients who received all eight ANC components



In addition to the eight essential components of ANC described above, there are specific questions and tests that help to assess a woman's risk of developing PE/E, to detect PE/E, and inform clients of the signs of impending eclampsia.

During 15% of the observed ANC consultations, providers performed the necessary checks to detect women at risk of developing PE: history of high blood pressure (BP) and diabetes; date of last delivery; client's parity, age, weight, and edema of face, hands, legs, and ankles. Fifty-three percent of providers observed measured women's BP and checked urine for protein.

Eleven percent of the providers, however, advised the clients on the symptoms of impending eclampsia (severe headache, blurred vision, and pre-eclampsia with generalized body swelling).

COMMUNITY KNOWLEDGE AND PERCEPTIONS

The study included in-depth interviews (IDIs) and focus group discussions (FGDs) with PE/E survivors, community stakeholders, and families affected by PE/E.

Married men reported witchcraft, economic problems, fear, spiritual attacks, self-medication, drinking alcohol, death of a loved one, and 'over thinking' as causes of high BP, swelling, and bleeding during pregnancy. The

men also said that to prevent these complications, they should encourage their wives to register early in their pregnancies for ANC, help them with house chores, turn to prayer, eat a balanced diet, notify health workers, give them support so they don't 'over think,' and make them happy all the time.

Women stated that high BP during pregnancy is caused by 'over thinking', shocking events, maltreatment from husbands, and poor diet. When a woman has high BP, communities blame witchcraft, unrest in the household, or an attack from family. Women's solutions to prevent these complications included seeking spiritual or traditional help from imams and herbalists before going to a hospital and using vegetables, fresh eggs, cocoa seeds, and aloe vera.

"If you have hypertension, the herbalist will tell you to do things, but where there is no money to do it, the high BP will continue.

If you go to pray, prayer can help a little, but it can't finish the high BP. High BP is the worst sickness in our town."

—FEMALE FGD PARTICIPANT, KOGI STATE

"They will put charcoal into the pot with other medicine and a child will be placed in between, believing this will cool the sickness."

—FEMALE FGD PARTICIPANT, EBONYI STATE

Overall, the qualitative findings show that the signs and symptoms associated with PE/E are often attributed to other causes and community members often seek traditional or spiritual healing before medical care. Misconceptions, myths, and mistrust between communities and health providers negatively influence care-seeking behaviors.

SURVIVORS' EXPERIENCES

Interviews with survivors documented their care-seeking pathways, including their PE/E experience, availability and accessibility of essential services and commodities, and the outcomes of the pregnancy

for mother and child. Survivors' experiences provide insights that inform strategies to work more closely with communities and health facilities, and as a result, improve access to, and use of, quality care.

The women interviewed were similar in age, ages at marriage and first pregnancy, and education. The following quotation demonstrates lack of awareness and poor health seeking behavior in a young woman during her first pregnancy.

“I lost the baby. It took a while before my blood pressure eventually normalized. The same headache was there, discomfort, and swelling of the legs was there for quite a long time after the baby died.”

—PE/E SURVIVOR, CROSS RIVER STATE

DISCUSSION & CONCLUSION

This landscape analysis identified the gaps in facilities' and providers' capacities for preventing, detecting, and managing PE/E. It assessed community awareness, beliefs, and experiences of PE/E, and determined the gaps and priority areas for research and programs to improve access to prevention and treatment.

It is clear, at the state policy level, that there is limited knowledge of what has been developed nationally, there is confusion about how policies, guidelines, and protocols reach primary health care facilities.

For effective PE/E management, health facilities need to stock necessary drugs and ANC equipment, and institutionalize guidelines for PE/E treatment. Researchers noted irregular supply of basic drugs, equipment, and supplies, particularly MgSO₄, patella hammers and, calcium gluconate, which no facilities stocked.

Providers' knowledge is generally poor. Health care providers need to be trained and re-trained on PE prevention—including when to administer prophylactic drugs such as calcium supplements and aspirin—and early detection, and treatment using anti-hypertensives and MgSO₄.

In addition to ensuring providers are adequately trained to administer MgSO₄ at the right time, and with

the proper doses, they also need to know the warning signs for MgSO₄ toxicity and how to treat it with calcium gluconate, if necessary. There is also limited capacity for newborn resuscitation.

The final, essential component to reduce mortality from PE/E is community awareness. Community members need to know the signs of PE/E and understand the danger it poses for mothers and babies so they can seek medical care promptly.

A multi-pronged approach is required to address the systematic issues that create barriers to women's access to health care during pregnancy. Detecting and managing PE/E early can reduce preventable maternal and neonatal deaths in Nigeria.

RECOMMENDATIONS

- Advocacy for streamlining state procurement and link to a national or central distribution system;
- Connecting with United Nations Commission on Life-Saving Commodities (UNCoLSC) for Women and Children, especially for maternal drugs which include MgSO₄;
- Training on quality ANC;
- Introduce a task-shifting policy focusing on MNH “policy implementation plan” that includes anti-hypertensives and MgSO₄;
- Train PHC workers to detect and provide loading dose of MgSO₄;
- Community awareness campaigns on the importance of ANC and seeking care early; and
- Engage men to encourage their support of their wives.

RESOURCES

1. National Population Commission (NPC) [Nigeria] and ICF International. 2014. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria and Rockville, Maryland, USA: NPC and ICF International.
2. Oladapo OT, Adetoro OO, Ekele BA, et al., Nigeria Near-miss and Maternal Death Surveillance Network. When getting there is not enough: a nationwide cross-sectional study of 998 maternal deaths and 1451 near-misses in public tertiary hospitals in a low-income country. BJOG 2015; DOI: 10.1111/1471-0528.13450.

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