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Findings from landscape analysis in Ebonyi on pre-eclampsia/ eclampsia

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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 deaths.

To appreciate the enormity of this problem at country and state levels, a landscape analysis was conducted by the Population Council in 2015 on PE/E in seven states in Nigeria. 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.
- Prescribing low-dose aspirin and calcium to at-risk women can prevent pre-eclampsia and eclampsia.
- 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 PE/E, and is one of 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.

FACILITY CAPACITY AND PREPAREDNESS

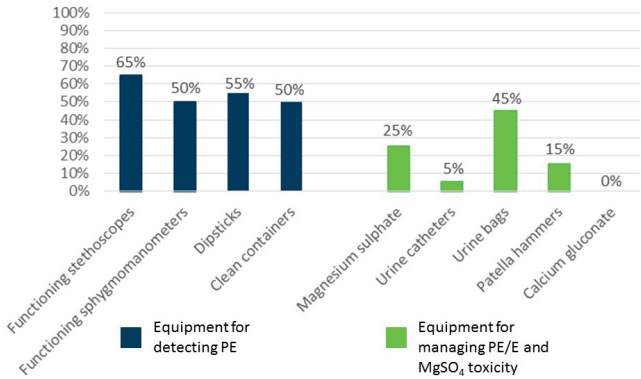
To assess institutional preparedness, researchers visited 20 facilities in Ebonyi State and recorded that two (10%) of the facilities had guidelines available for management of pre-eclampsia, five (25%) had all ANC equipment for the detection of PE/E and five (25%) use $MgSO_4$ for the treatment of eclampsia.

“It depends on the capacity of the staff in primary care center because $MgSO_4$ is not something anybody can administer... we only allow $MgSO_4$ to be administered by midwives and registered nurses.”

—POLICYMAKER, EBONYI

During facility assessments, researchers determined if the facilities had the key ANC equipment required to detect pre-eclampsia, to manage severe PE/E, and to monitor for $MgSO_4$ toxicity (figure 1).

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



Three (15%) of facility managers reported always using $MgSO_4$ to treat PE/E, three (15%) said it is sometimes used, and 14 (70%) reported that it is never used. When asked how they obtain $MgSO_4$ supplies at the facility, the Council found that 33% receive it routinely from central supply, 50% purchase it locally, and 17% said they procure it elsewhere (such as NGOs).

Although most of the hospitals assessed have capacity to provide basic signal functions for emergency obstetric and newborn care (EmONC), Table 1 shows that few have the capacity to provide parenteral anticonvulsants ($MgSO_4$) and only one hospital actually used $MgSO_4$ in the past three months preceding the survey.

Of concern is the limited capacity to provide cesarean section, neonatal resuscitation and blood transfusion. PHCs in Ebonyi also have a mixed picture in their capacity to provide EmONC with very few providing $MgSO_4$.

TABLE 1 Signal functions for Emergency Obstetric and Newborn Care (EmONC)

	Tertiary/Secondary health facilities (n=6)		Primary Health facilities (n=14)	
	Capacity	Done in the last three months	Capacity	Done in the last three months
Parenteral antibiotics	6	5	11	8
Parenteral oxytocics	6	5	12	11
Parenteral anticonvulsants ($MgSO_4$)	4	1	3	2
Manual removal of placenta	5	3	8	5
Removal of retained products	6	5	7	6
Assisted vaginal delivery	6	5	7	5
Blood transfusion	4	3	3	1
Caesarean section	2	1	1	0
Neonatal resuscitation	4	3	7	5

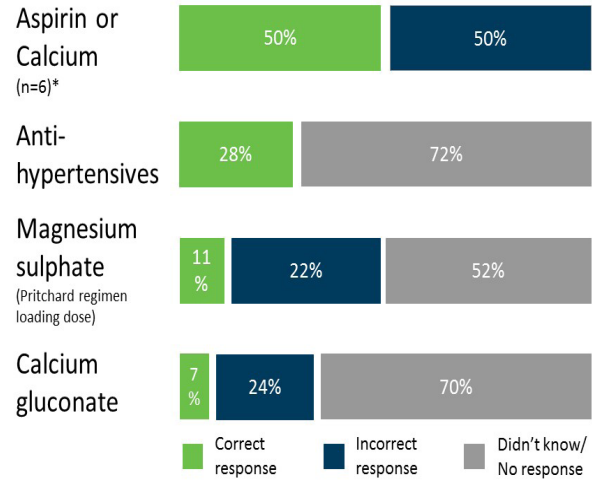
PROVIDER KNOWLEDGE AND SKILLS

Two-thirds and more than three quarters of providers knew the signs and symptoms of PE and eclampsia respectively. Only 52%, however, could correctly identify chronic hypertension and 9% could recall signs and symptoms of severe pre-eclampsia.

Researchers also assessed health care providers' knowledge of drugs used for preventing and managing PE/E as well as calcium gluconate to treat $MgSO_4$ toxicity (figure 2).

Figure 2 shows limited provider knowledge on prophylactic use of calcium and aspirin for women

FIGURE 2 Provider knowledge on drugs for prevention and management of PE/E (n=46)



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

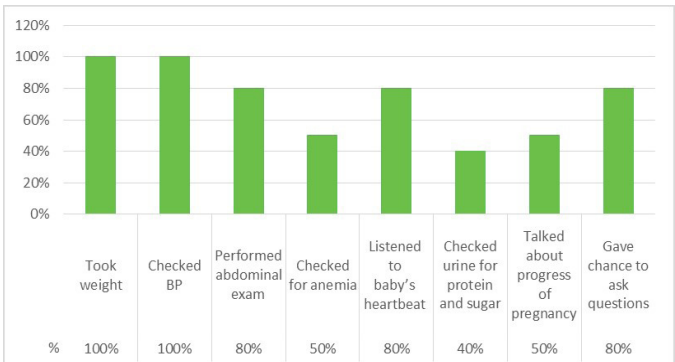
at risk of PE and which anti-hypertensives (aldomet or nifedipine) to use for managing high BP during pregnancy. The Pritchard regimen for $MgSO_4$ administration is considered the ‘gold standard’ for preventing and treating convulsions in severe PE/E, but few providers (11%) could accurately describe the appropriate loading dose of $MgSO_4$ or name the antidote for $MgSO_4$ toxicity, calcium gluconate (7%).

QUALITY OF CARE

Quality of antenatal care was assessed through observations of 10 client-provider interactions and 10 client exit interviews.

Clients should receive eight components of quality antenatal care at each visit, and researchers asked the 10 clients whether their health provider completed each component during the consultation (figure 3).

FIGURE 3 Percent of clients who received all eight components of ANC



In addition to the eight essential components of ANC, questions and tests should be conducted to assess a woman’s risk of developing PE/E, to detect PE/E, and inform clients of the signs of impending eclampsia.

During 30% of the observed ANC consultations, providers performed the necessary checks to detect women at risk of developing PE. These included history of high blood pressure (BP) and diabetes, date of last delivery, client’s parity, age and weight, edema of face, hands, legs, and ankles. In addition, 50% of providers observed in Ebonyi measured women’s BP and checked urine for protein and 30% of the providers 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 also conducted in-depth interviews (IDIs) and focus group discussions (FGDs) for qualitative information from PE/E survivors, community stakeholders and families affected by PE/E.

During FGDs with married men, participants reported poverty, lack of funds to take care of life during pregnancy, husbands’ waywardness, listening to stories of pregnancy worries, baby not in good position, self-medication, staying long before conception, and drinking alcohol as causes of high blood pressure, swelling, and bleeding in pregnancy. Men’s solutions to prevent these complications included: encouraging pregnant women to go for ANC early, identifying the problem and notifying health workers, government assistance, avoiding self-medication, and always eating a balanced diet.

Women also stated that high BP during pregnancy is caused by ‘over thinking’, age, early marriage, hardship, maltreatment from husbands, poverty, as well as the baby is not breathing well, engaging in stress-inducing activities, caring for husband, business and children, or seeking a male child. Women also discussed seeking help for high blood pressure from the hospital or the herbal homes.

“High blood pressure will make your legs rise and you will think whether you will die.”

—FEMALE FGD PARTICIPANT, EBONYI

“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

Overall, the qualitative findings showed that the signs and symptoms associated with PE/E are often attributed to other causes and that community members often seek care from either hospitals or herbal homes. 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, the availability and accessibility of essential services and commodities, and the outcomes of the pregnancy for mother and child. The quotation below describes one young woman's experience with PE/E:

"I am 23 years old. I saw my doctor, he attended to me and prescribed my routine drugs and there was no problem. My BP was measured as well as my urine. During that time, I suffered from severe headache, no blurred vision. I had swelling feet but no convulsion. My husband assisted me in the household activities so that I could rest; my mother-in-law was not around. They helped [me] through prayer and said it is good to go to hospital... They [Health providers] attended to me well. I paid for the drugs and treatment, and it wasn't high, [but] I lost that baby. "

—PE/E SURVIVOR, EBONYI

DISCUSSION & CONCLUSION

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

State-level policymakers are aware of some policies but there are differing opinions on task-shifting to lower cadres, especially concerning administering MgSO_4 loading dose at PHC level.

There is a mixed picture regarding the signal functions for EmONC. Facilities have shortages of equipment, drugs, and supplies to detect PE/E and few have MgSO_4 and calcium gluconate in stock. Very few hospitals appear to have the capacity to conduct cesarean sections or resuscitate newborns.

Provider knowledge is weak on the signs and symptoms as well as which drugs to use for prevention and treatment of PE/E.

Regarding quality of ANC, while all women interviewed said that the provider checked her blood pressure only 40% check for proteinuria. Providers do not check for women at high risk of developing PE/E nor give information for danger signs.

There is some knowledge on PE/E and other problems in pregnancy. Men seem willing to support their wives and encourage them to go for ANC and seek emergency care from hospitals. Women describe stress (by over thinking and hard physical work) as a major contributor to PE, but seem to seek care at herbal clinics for high blood pressure.

A multi-pronged approach is required to address the health system issues and community perceptions that create barriers to women accessing quality care during pregnancy and for complications of pregnancy. Early detection and management of PE/E is critical to improve maternal and newborn survival in Nigeria.

RECOMMENDATIONS

- Advocacy for streamlining state procurement and linking with existing distribution systems in Nigeria;
- Connect to work on the 13 UN Life-Saving Commodities for Women and Children: maternal drugs include MgSO_4 ;
- Review policy documents, guidelines, treatment protocols and algorithms to ensure alignment with global and national policies.
- Introduce task-shifting policy on MNH policy implementation plan for management of PE/E.
- Train all levels of providers on quality ANC: what, why, who, how, when and where; early detection of PE and management of severe PE/E (including anti-hypertensives and MgSO_4 loading dose at PHC level).
- Community awareness campaigns to encourage early ANC and health-seeking behavior for complications.

RESOURCES

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