

**ESSENTIAL MEDICINES AND COMMODITIES FOR REPRODUCTIVE HEALTH:  
REPRESENTATION ON THE 2010 NIGERIA ESSENTIAL MEDICINES LIST**

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**ABSTRACT**

**Background:** Appropriately selected essential medicines lists target the prioritised health needs of any population. International standards have been set for such lists with Nigeria apparently complying with such standards. Nevertheless the country has a huge reproductive health burden which affects regional and global health statistics. An assessment of the essential medicines list in Nigeria specifically focusing on the representation of reproductive health is necessary to re-evaluate Nigeria's compliance with international standards. **Aim:** To determine the level of representation of reproductive health on Nigeria's essential medicines by comparing it with the WHO interagency list of essential medicines for reproductive health. **Methods:** This was a desk review of the 5th edition of Nigeria's Essential Medicines list comparing it with the 2006 revised World Health Organisation Interagency List of Essential Medicines for Reproductive Health. **Results:** Analysis of the Nigeria essential medicines list showed that reproductive health was not accorded a separate category and that out of a total of 149 medications/devices included on the Interagency List, the Nigeria essential medicines list had 133, giving an overall percentage representation of 89.3%. Some sub-categories were however not fully represented on the Nigeria essential medicines list. These include oxytocics (75.0%) and tocolytics (0.0%) and antibacterials (94.4%). **Conclusion:** The Nigerian essential medicines list has some shortfalls and further review of the list is necessary. The establishment of a national list of essential reproductive health medicines and commodities should further strengthen reproductive health programmes and services in the country.

**KEYWORDS:** Essential medicines, Reproductive health, Contraceptives, Nigeria.

**INTRODUCTION**

Essential medicines address the priority health care needs of a population and should always be available within the context of a functioning health system in adequate amounts and appropriate dosage forms, with assured quality and adequate information, and at a price the individual and the community can afford.<sup>[1]</sup> When used appropriately, essential medicines have in fact been found to be a highly cost-effective component of modern health care, second only to immunisation for common childhood illnesses.<sup>[1]</sup> When a country appropriately selects a limited list of essential medicines, there is better assurance among health workers and consumers that these medicines are not only safe and effective but that they are getting good value for money. In addition, more transparent selection, better quality assurance, cost

containment and reduction in irrational prescriptions are just some of the many other benefits of operating an essential medicines list.<sup>[2]</sup>

Essential reproductive health medicines and commodities include medicines to ensure healthy pregnancy and delivery, contraceptives and medicines for prevention and treatment of sexually transmitted infections (STIs) and HIV/AIDS.<sup>[3,4]</sup> Among these are four important life-saving drugs namely, oxytocin, ergometrine, misoprostol and magnesium sulphate. The uterotonic medicines, oxytocin, ergometrine and misoprostol are highly effective and recommended for the prevention and treatment of post-partum haemorrhage,<sup>[5]</sup> a major cause of death among women in Nigeria and other countries of Sub-Saharan Africa.<sup>[6]</sup> Magnesium sulphate on the other hand has been demonstrated to be cost-effective in

preventing and treating eclampsia,<sup>[7]</sup> another leading cause of death and disability among women in these countries.<sup>[6]</sup> Other essential reproductive health medicines include antibacterial drugs such as cefixime, haematinics such as ferrous sulphate, antimalarials, antihypertensives and so on.

For Nigeria, the importance of including medicines and devices for reproductive health on the national essential medicines list cannot be overemphasised in light of the inordinate burden of death, disease and disability attributable to reproductive health problems in the country. Maternal mortality in Nigeria is still high. With an estimated maternal mortality ratio of 576 maternal deaths per 100,000 live births,<sup>[8]</sup> Nigeria accounts for 14% of global maternal deaths.<sup>[9]</sup> Unfortunately, national essential medicines lists often do not give priority to reproductive health and as a result, reproductive health medicines and commodities are omitted from the list possibly because many national essential medicines committees focus more on therapeutic drugs and less on preventive ones.<sup>[10]</sup>

In 2006, the World Health Organisation (WHO) published the revised Interagency List of Essential Medicines for Reproductive Health.<sup>[11]</sup> This comprehensive list represents the current international consensus on rational selection of essential reproductive health medicines and devices and is intended to support production, quality assurance, national procurement and reimbursement schemes of these medicines and devices.<sup>[11]</sup> Nigeria's Federal Ministry of Health in 2010 published the fifth revision of the nation's essential medicines list (EML).<sup>[12]</sup> The list for the first time included misoprostol for the treatment of post-partum haemorrhage, which is a clear advantage the current revision has over previous ones.<sup>[12]</sup> That notwithstanding, in view of the prevailing reproductive health climate in the country, it is necessary to ascertain how much representation is given to reproductive health on the Nigerian EML. This study was therefore aimed at determining the level of representation of reproductive health on Nigeria's EML by comparing it with the WHO interagency list of essential medicines for reproductive health.

## METHODS

### Study design

This was a desk review of the 5<sup>th</sup> edition of Nigeria's Essential Medicines list comparing it with the 2006 revised WHO Interagency List of Essential Medicines for Reproductive Health.

### Data collection instruments

The data collection instrument consisted of a data extraction form designed by the authors for retrieving data from the revised WHO Interagency List of Essential Medicines for Reproductive Health<sup>[11]</sup> and the Nigeria EML.<sup>[12]</sup> The form was used to collect data on the different categories of medicines and commodities for

reproductive health on both lists, the names of medications and commodities included in each category using recommended international non-proprietary names (rINN) of drugs, and the dosing forms and strengths of the medicines/commodities.

### Data analysis

Data on both essential medicines lists was transferred to a Microsoft® Excel 2007<sup>[13]</sup> worksheet for analysis. The variables of interest were number of medications/commodities in each category of the Interagency List that were included on the Nigeria EML; percentage representation of reproductive health on the Nigeria EML overall and by reproductive health category. Frequency tables and charts showing relevant numbers and percentages were used to present the data.

## RESULTS

Analysis of the WHO interagency list of essential medicines for reproductive health showed that it has four broad categories of essential medicines namely (a) *maternal and neonatal health* which had 101 essential medicines listed under this category (b) *family planning* with eight medicines/commodities (c) *reproductive tract infections/sexually transmitted diseases* which had 19 medicines listed and (d) *HIV medicines* (which includes antiretroviral therapy (ART), medicines for preventing mother-to-child transmission of HIV (MTCT) and medicines for preventing and treating opportunistic infection) with 21 medicines (Table 1). Reproductive health medicines were not given a separate category on the Nigeria EML; rather the various medicines and devices on the Interagency List were dispersed throughout the Nigeria EML and had to be carefully sifted to enable comparison between the two lists.

In comparing both lists, the study found that most of the sub-categories on the WHO Interagency list were fully represented on the Nigeria EML; for example, general and local anaesthetics, analgesics, antimalarials, antihypertensives, medicine used in emergencies, injectable hormonal contraceptives and antiretroviral medications had 100% representation on the Nigeria EML. However, certain sub-categories were less than 100% represented (Table 1). Under the maternal and neonatal health category, the following sub-categories were not fully represented on the Nigeria EML namely, antianaemia (66.7%), antibacterials (94.4%), antituberculosis (62.5%), immunologicals and vaccines (83.3%), disinfectants and antiseptics (50.0%), oxytocics (75.0%) and tocolytics (0.0%) (Table 1). Specifically, as seen in Table 2, the oxytocic, mifepristone-misoprostol combination (200mg + 200micrograms) and the tocolytic, nifedipine (immediate release capsule 10mg) were among the essential medicines omitted from the Nigeria EML.

For the family planning category of medicines and commodities, oral hormonal contraceptives had 66.7% representation due to the omission of levonorgestrel oral

tablets; levonorgestrel was however included on the Nigeria EML as ethinylestradiol + levonorgestrel tablet, although this drug combination is also specified separately on the Interagency List. Cefixime, spectinomycin and procaine benzylpenicillin were three essential antibacterials for reproductive tract infections/sexually transmitted diseases omitted from the Nigeria EML (Table 2) giving this category a representation of 84.2% (Table 1).

The fourth broad category on the Interagency List is HIV medicines (ART, MTCT and medicines for opportunistic

infection). All sub-categories of antiretrovirals/MTCT had 100% representation on the Nigeria EML. Medicines used in opportunistic infections on the Interagency List include fluconazole, acyclovir, pentamidine, pyrimethamine, sulfadiazine among others. This sub-category obtained a score of 88.9% due to the omission of pyrimethamine tablets and sulfadiazine (tablet 500mg, injection 250mg/4ml ampoule) on the Nigeria EML. Overall, out of a total of 149 medications/devices included on the Interagency List, the Nigeria EML had 133 giving an overall percentage representation of 89.3%.

**Table 1: Comparison of WHO Interagency list with Nigerian Essential Medicines List.**

Category of essential medications/commodities for Reproductive Health on Interagency list	Number of medications/commodities in each category included on EML		Representation on NG EML (%)
	IA	NG	
<b>Maternal and Neonatal Health (n = 101)</b>			
Anaesthetics, general	7	7	100.0
Anaesthetics, local	3	3	100.0
Analgesics	3	3	100.0
Antianaemia	3	2	66.7
Antibacterials	18	17	94.4
Antimalarials	8	8	100.0
Antituberculosis	7	5	71.4
Anthelmintics	2	2	100.0
Anticonvulsants	4	4	100.0
Antihypertensives	2	2	100.0
Diuretics	1	1	100.0
IV Fluids	4	4	100.0
Plasma substitutes	1	1	100.0
Anticoagulants	3	3	100.0
Antidiabetics	2	2	100.0
Immunologicals and vaccines	6	5	83.3
Dermatologicals	1	1	100.0
Disinfectants and antiseptics	4	2	50.0
Oxytocics	4	3	75.0
Tocolytics	1	0	0.0
Sedatives	1	1	100.0
Antiallergics and medicines used in anaphylaxis	1	1	100.0
Medicines used in emergencies	10	10	100.0
Steroids	2	2	100.0
Others	3	3	100.0
Total	101	92	91.1
<b>Family Planning (n = 8)</b>			
Oral hormonal contraceptives	3	2	66.7
Injectible hormonal contraceptives	2	2	100.0
IUD	1	1	100.0
Barrier methods	2	1	50.0
Total	8	6	75.0
<b>Reproductive Tract Infections/Sexually Transmitted Diseases (n = 19)</b>			
Antibacterials/antichlamydial	15	12	80.0
Antifungal	4	4	100.0
Total	19	16	84.2
<b>HIV Medicines (ART, MTCT and Opportunistic Infections) (n = 21)</b>			

Nucleoside reverse transcriptase inhibitors	5	5	100.0
Non-nucleoside reverse transcriptase inhibitors	2	2	100.0
Protease inhibitors	5	5	100.0
Medicines used in opportunistic infections	9	7	77.8
Total	21	19	90.5

Key: **IA** – The Interagency list of essential medicines for reproductive health 2006; **NG** – Federal Republic of Nigeria essential medicines list, 5<sup>th</sup> revision 2010; **ART** – Antiretroviral therapy; **MTCT** – Mother-to-child transmission.

**Table 2: Essential medications/commodities for RH on Interagency List omitted from the Nigeria essential medicines list.**

Category of essential medications/commodities for RH	Medication/Commodities omitted from Nigeria EML
<b>Maternal and Neonatal Health</b>	
Antianemia	ferrous + folic acid combination
Antibacterial	procaine benzylpenicillin
Antituberculosis	isoniazid+ethambutol; rifampicin+isoniazid+ethambutol
Immunologicals and vaccines	diphtheria vaccine
Disinfectants and Antiseptics	calcium hypochlorite; ethanol
Oxytocics	mifepristone + misoprostol combination
Tocolytics	nifedipine (immediate release)
<b>Family Planning</b>	
Oral hormonal contraceptives	levonorgestrel oral tablets
Barrier methods	diaphragm
<b>Reproductive Tract Infections/Sexually Transmitted Diseases</b>	
Antibacterial	cefixime, spectinomycin, procaine benzylpenicillin
<b>HIV Medicines (ART, MTCT and Opportunistic Infections)</b>	
Medicines used in opportunistic infections	pyrimethamine, sulfadiazine

Key: **RH** – reproductive health; **HIV** – Human immunodeficiency virus; **ART** – Antiretroviral therapy; **MTCT** – Mother-to-child transmission.

## DISCUSSION

Reproductive health problems account for a substantial proportion of the global burden of disease. Sub-Saharan Africa ranks highest among all WHO regions in terms of total disability-adjusted life years lost due to reproductive ill health.<sup>[14]</sup> The inclusion of reproductive health medicines and commodities on national essential medicines list is therefore an important step towards alleviating the global disease burden and particularly in developing countries. Reproductive health services in Nigeria and many countries in Sub-Saharan Africa are largely donor-driven. Strong representation of reproductive health on the Nigerian EML should therefore help to maintain the visibility and perceived legitimacy of these medicines and commodities as well as attract and maintain the necessary funding required for their purchase and distribution.<sup>[10]</sup>

This study has shown that Nigeria has made considerable effort in representing reproductive health on its essential medicines list. However, the omission of certain medicines may call to question the process and criteria employed in selecting and including medicines on the list. The selection of essential medicines must be evidence-based and its process systematic, consultative and transparent.<sup>[1]</sup> Efficacy, safety and cost are a few guiding criteria. Others include cost-effectiveness,

linkage to existing WHO or other standard treatment guidelines, the availability of the product, availability of a pharmacopoeia standard as well as proven public health relevance of the product.<sup>[15]</sup>

With an overall cure rate of 96%, a single 400mg dose of the oral antibiotic cefixime can prevent long term complications of gonococcal infections such as infertility, chronic pelvic pain and ectopic pregnancy as well as prevent vertical transmission to the newborn.<sup>[3,10]</sup> Cefixime as a first-line treatment for uncomplicated anogenital gonorrhoea was added to the 2005 WHO 14<sup>th</sup> Model Essential Medicines List<sup>[16]</sup> but was omitted from the 2010 Nigeria EML despite available evidence of its efficacy, safety, relative cost-effectiveness and ease of administration.<sup>[3]</sup>

It is not surprising that the combination of mifepristone + misoprostol tablet was not included on the Nigeria EML. This combination medication is used for early pregnancy terminations which has cultural and legal implications in within the Nigerian reproductive health context. Abortion law is restrictive in Nigeria; terminations of pregnancy are acceptable only on grounds of saving a woman's life or preserving her physical or mental health.<sup>[17]</sup> The antiprogesterin, mifepristone however may be used in medical treatment of missed and incomplete abortions/miscarriages either alone or in combination

with misoprostol although this is not widely recommended.<sup>[18]</sup> Globally, puerperal sepsis is estimated to cause at least 75,000 maternal deaths annually, mostly in low-income countries<sup>[19]</sup> and can occur from missed or incomplete miscarriages. By not including mifepristone on the Nigeria EML, it may appear that Nigeria's policy makers are 'throwing the baby out with the bath water'. Research has shown however that there is no statistically significant difference in the effectiveness of using mifepristone plus misoprostol compared to using misoprostol only for medical treatment of incomplete and missed miscarriages.<sup>[20]</sup>

Reproductive health medicines were not given a category of their own on the Nigeria EML. This represents a missed opportunity for the Nigerian government to showcase reproductive health as "a top public health priority"<sup>[2]</sup> to the health care community. The government can take this a step further by establishing a national list of essential reproductive health medicines and commodities which will ensure that procurement of these medicines and commodities continues to receive funding in the national budget. Furthermore, a short list of selected essential reproductive health medicines and commodities can in turn, be used as input indicators for monitoring and evaluating reproductive health care programmes and service delivery at every health care level in the country.

## CONCLUSIONS

This study has shown that more work still needs to be done in Nigeria with regard to essential medicines and commodities for reproductive health. Further research is required to determine to what extent Nigeria's EML is being implemented in health care facilities at different levels within the reproductive health context. This is a logical next step to evaluating the impact of Nigeria's essential medicines policy.

## COMPETING INTERESTS

None

## AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. NNE defined the research theme, designed the methodology and collected the data. NNE and COE conducted the analysis and interpretation and drafted the manuscript. OFE, POUA, ASN, CCN and COI co-discussed analysis, interpretation and presentation and critically reviewed the article for important intellectual content. All authors have contributed to, seen and approved the final manuscript.

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