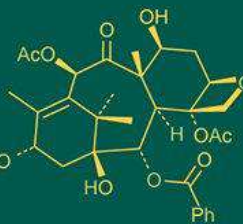
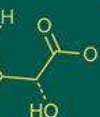
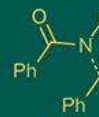
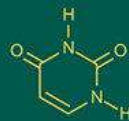
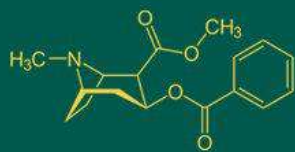


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## The role of POCT in delivery of standard care in war ridden and terrorized regions, in Nigeria

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### Abstract

**Background:** Thousands of Nigerians have either been displaced or killed owing to the violent conflict that has plagued the country over the years. This year alone, more than 70,000 people have been displaced from their homes in Borno and Yobe states alone. These people have medical needs. This need may be Combat or Non-combat related. However, rapid testing, early diagnosis and prompt treatment are needed advantages they all have in common. This is where Point-of-care-testing (POCT) comes in.

The aim of this paper is to discuss the role of POCT in the delivery of standard care in war ridden and terrorized regions in Nigeria.

**Discussion:** POCT can be implemented to improve the care of medical, infectious, geriatric, obstetric and pediatric cases. Due to endemicity in our region, other critical tests that can be done to ensure early diagnosis and prompt treatment are Malaria, Hepatitis, HIV and Typhoid rapid diagnostic tests. Some major limitations to be faced antagonizing improved POCT in these regions are availability, accessibility, skilled man power.

**Conclusion:** Increased POCT can improve rapid testing, early diagnosis and prompt treatments in these violent conflicts ridden regions in Nigeria. However, poor availability, accessibility and manpower are a major limitation.

**Keywords:** POCT, point-of-care-test, conflict, war, Nigeria, healthcare

### Introduction

Point-of-care-tests (POCT) are diagnostic tests performed close to the place or point where the specimens were collected, providing results within a shorter time in comparison to regular tests. They enable health workers or patients to perform tests without necessarily going through the laboratories directly. These tests are often molecular based, being antigens or antibodies-based tests but, are not limited to these <sup>[1-2]</sup>.

In Nigeria, many regions have been plagued by the bandit and terrorist attacks, and violent intercommoned clashes. These have led to morbidities, mortalities and displacement of affected residents <sup>[3]</sup>. This year, in one attack in Borno state in April, over 65,000 and another at Yobe state in May displaced over 4,500 people <sup>[3-4]</sup>. In these conflict-ridden regions, critical health needs range from combat to non-combat causes, with violent trauma and obstetric emergencies being the most prevalent causes, respectively <sup>[5]</sup>.

The aim of this paper is to discuss the role of POCT in delivering time sensitive standard care in war ridden and terrorized regions in Nigeria.

### Discussion

POCT can play a very crucial role in rapid test results turn around time, early diagnosis and prompt treatment of both indigenous and displaced persons. Be it a combat or non-combat health need. As regards combat and violent trauma injuries, military outposts can be equipped with the basics like blood glucose meters, small handheld analyzers for common biochemical tests <sup>[2]</sup>. Another very critical test is the blood genotype strip tests, that can come in handy in an emergency need for blood grouping and cross matching before transfusion <sup>[6]</sup>.

The non-combat impact of war affects the health of residents and displaced persons. POCT can be implemented to improve the care of medical, infectious, geriatric, obstetric and pediatric cases. However, the endemic non-infectious medical cases in the tropics are commonly cardiologic and/or Endocrine.

POCT can be used to test for Troponin T or I to rapidly diagnose Myocardia Infarction (MI) and a glucometer to diagnose impaired blood glucose levels in symptomatic person within a conflict ridden and movement restricted zone. While a urinalysis strip test may come in handy to test for proteinuria, bilirubinuria or even glucose and ketone in urine as a pointer to possible renal pathology, hepatic impairment, hematological pathology or even impaired glucose metabolism, like Diabetes Mellitus (DM). Also, POCT Machines for lipid concentration monitoring in DM and CVD patients can be used by health aids in these regions [2].

Furthermore, in the absence of a health facility, ladies of reproductive age can carry out a urine strip test to rule out or confirm pregnancy when experiencing nonspecific physiologic and menstrual abnormalities. Although obstetric emergencies like preeclampsia and eclampsia occurring in this region will find strip urine analysis very handy for maternal protein monitoring, facilities for an emergency Caesarean Section (C/S) may not be readily available, especially among the IDPs.

Moreover, a violent environment is not the best for maternal and child health. Discourse on complications of war on Prenatal, Natal and Postnatal periods is beyond the scope of this paper. However, POCT may be used in early diagnosis and management of early infant conditions like hyperbilirubinemia and hyper/hypo glycaemia.

Due to endemicity in our region, other critical tests that can be done to ensure early diagnosis and prompt treatment are Malaria, Hepatitis, HIV and Typhoid rapid diagnostic tests. With the STDs being of special interest, due to the high rate of rape and sexual assaults of women and young girls by the terrorists [7].

The major limitations to be faced against improved POCT in these regions are unavailability, inaccessibility and low skilled manpower. Crucial machines like blood gas analyzers are not readily locally available in low and rural settings. Internal displacement inhibits them access to a lot of essential health care services. While knowledge and skill on these equipments are in limited availability.

### Conclusion

Increased POCT can improve rapid testing, early diagnosis and prompt treatments in these violent conflicts ridden regions in Nigeria. However, poor availability, accessibility and skilled manpower are a major limitation.

### Recommendation

1. More funds should be poured into POCT machines/equipment in the rural and conflict-ridden regions
2. Basic trainings on the skill and knowledge of the equipment should be given to non-medically inclined citizens too
3. Medical Students can be recruited to hold these trainings.

### Abbreviations

POCT - Point of Care Testing  
 HIV - Human Immunodeficiency Virus  
 DM - Diabetes Mellitus  
 CVD – Cardiovascular Diseases  
 IDPs – Internally Displaced Persons  
 C/S – Cesarean Section

### Conflict of interest

The author declares no conflict of Interests.

### Authors' contribution

Research and Introduction writing = Otobo, D. Daniel  
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