

Profile

Obiageli Nnodu: sickle cell disease in Africa's largest nation

With a current population quickly approaching 230 million, Nigeria is Africa's largest nation and has the world's highest incidence of sickle cell disease. Each year, about 150 000 Nigerian children are born with the condition. For a long time, the country did not have a well articulated plan to contend with sickle cell disease. But this changed about 14 years ago when Obiageli Nnodu was invited to help articulate a strategy for the control and management of the disease. Preparing for this endeavour led her to the First Global Congress on Sickle Cell Disease in Accra, Ghana, in 2010 where she observed a lack of coordination and communication among various individuals and non-governmental organisations involved with sickle cell disease in Nigeria. Her continuing efforts in combating the disease now see her serving as the Founding Director of the Centre of Excellence in Sickle Cell Disease Research and Training at the University of Abuja, where she is a professor in the Department of Haematology and Blood Transfusion at the College of Health Sciences.

Nnodu—who speaks the Igbo and Hausa languages—fondly remembers growing up in Vom in Nigeria's Plateau State. She would proceed to obtain her medical degree from the University of Jos in central Nigeria, undertake residency training in haematology and blood transfusion at the Jos University and Lagos University Teaching Hospitals, and later receive an MSc in clinical cytopathology from Imperial College London as a UK Foreign Office Chevening Scholar. In the first part of her career, she worked at the National Orthopaedic Hospital Lagos, where she eventually headed the multidisciplinary pathology department and where she worked with the orthopaedic oncology team to set up early diagnosis of bone tumours with a fine needle aspiration cytology service, using skills she obtained through fellowships in Sweden at Karolinska University Hospital in Stockholm and University Hospital, Lund (which later merged into Skåne University Hospital).

Seeing a need in the field of sickle cell disease research and care, Nnodu made it her focus. Along with other African researchers like Julie Makani (Tanzania), Ambroise Wonkam (University of Cape Town), and Solomon Ofori-Acquah (University of Pittsburgh), she represented Nigeria in Sickle CHARTA, as well as the [SickleInAfrica Consortium](#) and SickleGenAfrica. As Nnodu knows all too well, the disease burden in Nigeria is high. People born with sickle cell disease in Nigeria have a far higher chance of childhood mortality, due largely to their heightened susceptibility to bacterial infections. Nnodu—who has endeavoured to integrate newborn screening for sickle cell disease into existing primary health-care programmes—relates that some regions of Nigeria have a

sickle cell disease prevalence lower than 1%, whereas other regions have a prevalence up to 3%.

Nnodu says that, in areas with comparatively limited resources, methods to identify and treat patients with sickle cell disease typically include haemoglobin electrophoresis followed by high-performance liquid chromatography and isoelectric focusing for confirmation of test results. She adds that more recent times have seen the arrival of such point-of-care tests as SickleSCAN, HemoTypeSC, and the Gazelle, which have increased both convenience and diagnostic reach. This development is especially welcome amid the growing problem of “brain drain” among Nigeria's medical workers, many of whom are leaving the homeland to seek employment opportunities abroad. The ongoing exodus of professionals had been an issue for many years but has recently “reached alarming proportions”, says Nnodu, who admits it has “profoundly” impacted the field of haematology. This concerning trend, however, has only strengthened her resolve to remain active teaching haematology to medical students and residents at the University of Abuja, where she also mentors research training of staff at the Centre of Excellence for Sickle Cell Disease Research and Training. Aside from serving as director at this centre, she also has significant roles with several transnational sickle cell disease organisations.

Outside of work, Nnodu enjoys spending time with her husband and four adult children, along with reading, walking, and personal devotion and reflection. At work, she contends with current challenges related to funding and the loss of young doctors to emigration but does not hesitate to acknowledge several reasons for optimism about the future. She expects that, 10 years from now, Nigeria will see the implementation of universal newborn screening for sickle cell disease, along with increased access to disease-modifying drugs and more clinical trials of novel treatments and curative therapy through stem-cell transplantation and gene therapy. She additionally expects the establishment of a national sickle cell disease registry, more widespread testing to identify sickle cell disease carriers, and improved knowledge about sickle cell disease among health-care workers, including those at primary health-care centres that cater to the majority of the population. Beyond that, she foresees local manufacturing of point-of-care tests and more people trained in genetic counselling, leading to a lower rate of babies born with the disease and a higher rate of diagnosis and treatment for those who already have the condition.

Ray Cavanaugh



For more on the [SickleInAfrica Consortium](#) see <https://www.sickleinafrica.org/>
For more on [SickleGenAfrica](#) see [Comment Lancet Glob Health 2020; 8: e1255-56](#)

For more on [childhood mortality from sickle cell disease in Nigeria](#) see [Articles Lancet Haematol 2021; 8: e723-31](#)

For more on [newborn screening for sickle cell disease](#) see [Articles Lancet Haematol 2020; 7: e534-40](#)