# Elementary Tools of a Riverine and Rural Health Worker in Southern Nigeria

## Lessons from the Field

by Oritseweyinmi Erikowa-Orighoye*

**Abstract**
This article explores the essential tools and practices employed by health workers operating in riverine and rural areas of the Niger Delta. The article aimed to understand the roles, challenges, and experiences of these workers and derive valuable lessons from their fieldwork.
The article highlighted the primary tools utilized by riverine and rural health workers, shedding light on their crucial roles in delivering healthcare services to underserved communities. It included the importance of leveraging locally available resources and adopting culturally appropriate practices.
Furthermore, the article explored strategies to address the challenges faced by riverine and rural health workers. It emphasized the need for tailored support, improved infrastructure, and enhanced training programs to strengthen the healthcare system in the region.

**Keywords**
Universal health coverage, health worker, coastal areas, Niger Delta.

"Universal health coverage depicts the availability and ease of access to healthcare services for all individuals without suffering the risk of financial bankruptcy, while health systems strengthening involves the amalgamation of various practices, instruments and policies to improve the quality of a country's healthcare system" as stated by Dr. Tedros, the WHO director general, when speaking on Health systems strengthening, Universal health coverage, and Global health security [1]. The World Health Organization (WHO) estimated a projected shortfall of 18 million health workers by 2030, mostly in low- and lower-middle-income countries. However, many countries irrespective of the socioeconomic development they face, to varying degrees, difficulties in the education, employment, deployment, retention, and performance of their health workforce [2].

Despite the increased funding from donors like the UK, many countries still require support to supplement low resources in their health sectors, this is highlighted in several African

* Institute of Mangrove Ecology and Environmental Technology.

countries which are unable to meet the target of committing about 15% of their government's expenditure to healthcare due to chronic underinvestment and poor quality of healthcare systems [2, 3]. Owing to a wide range of economic and political factors, this has further worsened as African health professionals have been leaving for destinations within the region and abroad, searching for better living standards countries with better employment opportunities [4]. This is reported as the current brain drain, happening in countries like Nigeria, Ghana, Zimbabwe, with reports showing that, from Nigeria, the health workforce density is about 1.95 per 1000 population, which is complicated by inequities in the health workforce distribution, due to the lack of national policies guiding the posting and transfers of health workers, with the Covid-19 pandemic bringing this to the fore [4, 5].

In developed countries like Australia, Italy, and the UK, where healthcare workers from Africa are in high demand, especially with their aging population and the impact of Covid-19, the wages are higher [6]. The loss of staff through migration is leaving knowledge gaps in already fragile health systems, but global health security specialists believe that amid the trauma of the pandemic lies the opportunity to create policies that protect health staff and incentivize them to stay [7, 8].

The United Nations has proposed the Sustainable Development Goals to improve universal health coverage for all people and ensure quality of health coverage at all places including rural areas, although this is difficult, due to the inability of rural areas to attract and retain healthcare professionals (HCP) by reason of several factors [9]. Therefore, the search for innovative strategies that involve communities is very important for ensuring health. Like other African countries, Nigeria (alongside the exodus of health professional to developed countries), it is still faced with the poor distribution of the available healthcare workforce positioning in most areas of the country, especially the rural, riverine, and other underserved areas and, therefore, the primary care health facilities are facing a disadvantage. [10, 11] The deployment to and retention of health workers in the rural and riverine areas remains a challenge [11]. In Nigeria, for example, more than 82% of the rural population is excluded from health-care services due to insufficient numbers of health workers compared to 37% in urban areas, according to the International Labor Organisation [12].

Research has shown that low staff-to-patient ratio has been recorded in rural areas, the hospitals and clinics in the rural and riverine areas are often short-staffed because many healthcare professionals tend to seek better opportunities in the urban regions [13, 14]. In addition, there are inadequate facilities and equipment for effective diagnosing and treatment, untrained and inexperienced staff, as well as inappropriate diagnostic tools [13, 15]. There is also evidence of the government's neglect as there are inadequate policies in place and poor partnerships with various stakeholders [13-15].

The Niger Delta region is rated as one of the most oil spill vulnerable areas in the world, with about 123 gas-flaring sites [16]. Several oil facilities are located close to the homes, farmlands, and water sources of host communities in this region. Environmental pollutants, such as volatile organic compounds (VOCs), heavy metals, polycyclic aromatic hydrocarbons (PAHs), are released when oil is spilt, and gas flared with several reports

showing that living in areas polluted by oil have adverse effects on human health [16-18]. Studies have reported that oil pollution in the Niger Delta affects men and women disproportionately, with women being more exposed and vulnerable due to some cultural and socio-economic factors [19, 20]. With reports showing that women tend to bear the highest burden of environmental degradation, especially women of childbearing age who are often considered as a vulnerable group [21].

Reports of corruption, ethnicity and conflicts in the Niger Delta constitute serious barriers to the development of the Niger Delta region [13]. These factors tend to affect the collaboration of stakeholders (state and local government official, health boards, local leaders, and community members) and continuity towards healthcare delivery, with reports showing an increase in death rates, from preventable causes such as severe malaria, anemia, meningitis, tetanus, all due to unavailable emergency healthcare services, travel distance to available and functioning health centers and high cost of services [13, 21-23]. Water transport is the major mode of transportation for most of the communities and issues such as long travel distances, high cost of transportation, and lack of quick and ready means of transportation have posed challenges to acquiring necessary health treatment. Transport services are poor in the rural and riverine areas and not readily available, thus affecting access and schedules or planned movement [24, 25]. Owing to the barriers being experienced in accessing good healthcare services, such as emergency care, maternal and child healthcare; there is an increase in the patronage of traditional health centers that are not medically certified in the rural and riverine areas [26,27]. There is a limitation of a sustainable health care financing scheme in these areas and, thus, a high rate of out-of-pocket payments system for health care services exists. The people financially contribute or pay more for health care services than official care and funding programs [28,29].

How can sustainable support systems improve delivery of healthcare and quality of living in rural, riverine, and underserved communities? Countries in Africa, like Sierra Leone and Ghana, have implemented several strategies such as compulsory postings and incentives (20-30% increase in salary, staff vehicle hire) as motivators for health workers to accept rural practice [30, 31]. However, neither of these has yielded the desired results in addressing the lack of health professionals in rural areas [30,31]. A review of the literature on the attraction of health staff to rural areas in middle- and low-income countries and their retention points to poor working conditions, such as a lack of safe and clean water, poor sanitation of health facilities, limited career progression prospects, show a lack of management and community support and the absence of proper equipment and infrastructure at the health facility level, as reasons deterring health workers from practicing to rural and riverine areas [30-33]. Other reported varied factors influencing health workers' willingness to practice these settings, are socioeconomic status, rural background, gender, culture, and individual and curriculum characteristics [31, 32].

The local and state government and the problems of imbalances in the distribution of these health workers persist, with certain local government areas in the rural and riverine communities remaining at a disadvantage, as they slowly implement these ideas and many more. There is a need to

adopt sustained and innovative actions at an individual and community level to address the current health workforce problems in primary health centers located in rural and riverine communities. Studies have shown the important factors that are required for rural practice based on recruitment and retention, which includes understanding the setting, community engagement and leadership; yet, several health workers feel unprepared for some aspects of rural or riverine practice [34]. This paper sought to capture the breadth of possible strategies based on the experiences of a health worker in a riverine and rural area in Southern Nigeria.

1. Community engagement and tailored solutions: Every rural and riverine community is unique, facing peculiar challenges, and must shape its own solutions. It is helpful to work with a logic model that suits a community itself rather than working with a rigid pre-designed model that might not be effective. Some reports argue that a rural or riverine upbringing or some lived experiences might be a key requirement to practice in rural/riverine areas [22] although it is helpful for healthcare workers to identify and understand the value of a rural/riverine health career, what it means to them as it will determine how well they engage with communities and offer tailored healthcare delivery. It is helpful to be community centered, irrespective of the size of the community as communities can be clustered when it comes to healthcare services in rural/riverine areas and the spectrum of care might differ across communities.
A rural inland community might engage with the health center, promoting door-to-door health visits for immobile patients with an attempt to bridge the gap and ease the burden of transportation, while a riverine community with road access might opt for a different form of health promotion.
A health worker would need to consider the wider social determinants of the patients that have an impact on their health and wellbeing. To engage with communities, health workers need to lead and advocate, which includes finding champions in each community and helping them develop the skills they need to facilitate behavioral change. A health worker, in a rural/riverine area, needs to be aware of the vulnerable population, as those represent the people who need the most. As in the case of working in the Niger Delta, a health worker needs to be aware of the environment and its impact on vulnerable groups in the community. For example, mothers bringing in infants under 5 years with severe undernutrition, should trigger conversations not only about nutrition but water sources too, as most water sources are contaminated from the oil spills.
2. Building and empowering primary healthcare teams: Due to the shortage of healthcare workers performing in rural and riverine areas, various government and non-governmental organizations engage with communities to deliver healthcare. Such organizations work with local primary health centers by designing and delivering programs that seek the improvement of the utilization of PHCs in some of the riverine and rural areas of the Niger Delta. Being a health worker, it is important to know that con-

fidence and competence are developed through exposure in rural settings and skills building in rural competencies to fully engage with the communities and building strong teams, one must invest in understanding the political, socio and economic dynamics that involve the delivery of healthcare in these settings. For example, to carry out immunization in a community, a health worker would need to inform the stakeholders of the development and get the relevant approval from the leaders. The commitment and success of such program in these areas is dependent on teamwork and how the information is delivered.

3. Resilience and accepting uncertainty: Uncertainty is an accepted component of medicine; however, this is usually described within the context of a diagnostic dilemma and the clinical reasoning processes used to manage it [35]. In this context, as a health professional, uncertainty points to how often and to what extent one's own clinical skills will be stretched. For instance, having clinical courage on a midnight call with an obstructed labor on an island without the availability of boat transport to the nearest hospital, requires taking not only the initiative and pushing boundaries on acute care skills, but also these skills are required to appropriately manage patients with complex, less acute, problems, such as mental health, complications of diabetes and maternal cases. There is also a need to identify, understand and adapt the expertise of transferring skills used in different situations to a new situation, as well as figuring out what to do in real time in a life-threatening situation.
4. Managing technology innovations and current reality: There is a clear sense of not having the personnel and equipment that might be available in better resourced areas when managing patients in rural/riverine communities. Familiarity with the context of practice and relationships with the local leaders of a community, local team members and the available and accessible distance support and retrieval systems, will enable a health professional to maximize the available local resources for the benefit of their patients. Being unfamiliar with this context, such as managing a child with cerebral malaria and severe anemia, who needs to be referred to – but there's no Internet connection to make a direct call – might cause serious concerns with increased anxiety for the health workers as they might be less aware of the resources they could call on in challenging clinical circumstances. As much as we are in the times of smart phones, a simple phone without Internet might be effective in delivery healthcare as its battery might say long. There might be a need to use radio transmitters for emergencies. Currently, mobile phones are used as tools to improve and speed up access to healthcare systems in rural areas, and have been used in healthcare workers' training, prevention and access to health information, remote consultations, and patient monitoring. We can affirm that the adoption and use of mobile phones has obvious benefits for improving the health literacy of populations living in rural areas [36, 37]. One major challenge with this development is that the Internet quality available is

very poor and under political control. Poor Internet quality seriously hampers the success of the use of mobile phones in rural/riverine settings for a health worker. One might mitigate the above challenge if there's a provision of infrastructure; however, the equipment supporting connectivity (electricity) is not readily available, or unreliable when it exists. Apart from being an under electrified continent, untimely, frequent, and long periods of electricity cause cuts in health delivery both in urban and rural areas. As a health worker in the rural and riverine area, one needs to have alternative measures to manage and work with technology and the delivery of healthcare.

5. Literacy levels and language of the population: Although educational attainment is not an isolated factor in health literacy, the type of education system in which individuals are included plays a very important role. Reports reveal the differences between health literacy levels in urban and rural settings, showing that rurality alone is not a risk factor for low literacy; yet, when accompanied by the aforementioned factors and a health system that does not prioritize easy access to health care in rural areas, important disparities in health literacy may occur between urban, suburban, and rural areas [38, 39]. Thus, health workers in rural and riverine areas need to understand the literacy levels of the communities, as it requires plugging in and living there. There is a need to prepare for confidentiality issues that arise for a village doctor, nurse or community health worker who is aware of the patients with STIs, alcohol and substance abuse, mental health issues and how to interact with them outside care settings. It is helpful to understand the power and intimacy with patient, staff, and the community.
6. Lessons Learned: The self-assessment literature cautions of overconfident self-judgements are not uncommon, and that experience can increase confidence and, thereby, increase the risk of overestimating one's own skills [35]. Humility is not a passive process. These health workers, including doctors, working in low resource settings at a distance from tertiary care and, often, secondary care centers, do not conflict confidence with competence. Limits are sought through deliberate practice and testing, self-reflection and critical discourse with experts and peers, patients, and community members. As a society, we are into quick solutions. That approach will not work for most rural and riverine communities.

## References

1. Elebesunu E.E., Oke G.I., Adebisi Y.A., Nsofor I.M. (2021), *Covid-19 calls for health systems strengthening in Africa: A case of Nigeria*, «The International Journal of Health Planning and Management», 36 (6), pp. 2035-2043.

2. Riaz M.M.A., Ribeiro L.L.P.A., Brazil I.F.M.S.A. (2021), *IFMSA Policy Proposal Global Health Workforce.*

3. Kazeem A.A., Ayobami S.M., Adewale A.A., Moses O.O., Kunle S.K. (2021), *Comparative Analysis of Health Research Financing as a Veritable Tool for Achieving and Sustaining Universal Health Coverage in Nigeria and South Africa*, «International Journal of Health Economics and Policy», 6 (4), p. 100.

4. Azevedo M.J. (2017), *The state of health system (s) in Africa: challenges and opportunities*, «Historical Perspectives on the State of Health and Health Systems in Africa», Volume II, pp. 1-73.

5. Docquier F., Rapoport H. (2009), *Quantifying the impact of highly-skilled emigration on developing countries*, manuscript, May.

6. Poon Y.S.R., Lin Y.P., Griffiths P., Yong K.K., Seah B., Liaw S.Y. (2022), *A global overview of healthcare workers' turnover intention amid COVID-19 pandemic: a systematic review with future directions*, «Human resources for health», 20 (1), pp. 1-18.

7. Yadav S., Priya K.R. (2021), *Migrant Workers and COVID-19: Listening to the Unheard Voices of Invisible India*, «Journal of the Anthropological Survey of India», 70 (1), 62-71.

8. Ngamije J., Yadufashije C. (2020), *Covid-19 pandemic in Rwanda: An overview of prevention strategies*, «Asian Pacific Journal of Tropical Medicine», 13 (8), 333.

9. Tangcharoensathien V., Mills A., Palu T. (2015), *Accelerating health equity: the key role of universal health coverage in the Sustainable Development Goals*, «BMC medicine», 13 (1), pp. 1-5.

10. Oleribe O.O., Momoh J., Uzochukwu B.S., Mbofana F., Adebiyi A., Barbera T., Taylor-Robinson S.D. (2019), *Identifying key challenges facing healthcare systems in Africa and potential solutions*, «International journal of general medicine», 12, p. 395.

11. Adeloye D., David R.A., Olaogun A.A., Auta A., Adesokan A., Gadanya M., Iseolorunkanmi A. (2017), *Health workforce and governance: the crisis in Nigeria*, «Human resources for health», 15 (1), pp. 1-8.

12. More than half of the global rural population excluded from health care (2015), *Social Protection*, https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_362525/lang--en/index.htm.

13. Onyeme A. (2019), *Strategic measures for accessing effective healthcare delivery in rural Nigeria* (Doctoral dissertation, Loughborough University).

14. Olawole M. (2010), *The choice of health care facilities in rural areas of Nigeria: Analyzing the impact of distance and socio-economic factors.*

15. Oladepo O., Okereke E., Akinola A. (2018), *The rationale and relevance of existing cadres of frontline health workers and potential for new mid-level cadres.*

16. Nnaemeka A.N. (2020), *Environmental pollution and associated health hazards to host communities (Case study: Niger delta region of Nigeria)*, «Central Asian Journal of Environmental Science and Technology Innovation», 1 (1), pp. 30-42.

17. Abayomi O., Olayemi T.E., Ogungbade T. (2021), *Environmental pollution and its ecological consequences on the Niger Delta: A review of the literature*, «African Journal of Environment and Natural Science Research», 4, pp. 27-42.

18. Olufemi O.A., Andrew N.I.J.O., Akpejeluh I.U.R.P. (2020), *Review on the Fate of Contaminants in the Niger Delta Environment.*

19. Oghenetega O.B., Okunlola M.A., Ana G.R., Morhason-Bello O., Ojengbede O.A. (2022), *Exposure to oil pollution and maternal outcomes: The Niger Delta prospective cohort study*, «Plos one», 17 (3), e0263495.

20. Andrews N., Bennett N.J., Le Billon P., Green S.J., Cisneros-Montemayor A.M., Amongin S., Gray N.J., Sumaila U.R. (2021), *Oil, fisheries and coastal communities: A review of impacts on the environment, livelihoods, space and governance*, «Energy Research & Social Science», 75, 102009.

21. FAO (Food and Agriculture Organization of the United Nations) (2011), *Guidelines for measuring household and individual dietary diversity*, FAO, Rome.

22. Onyeme A., Price A., Edum-Fotwe F., *Influence of socio determinants on healthcare delivery in rural Nigeria.*

23. Okoroiwu H.U., Uchendu K.I., Essien R.A. (2020), *Causes of morbidity and mortality among patients admitted in a tertiary hospital in southern Nigeria: A 6 year evaluation*, «PloS one», 15 (8), e0237313.

24. Samuel D., Eyenghe T., Brown I., *Socioeconomic Effects on Household Access to Primary Healthcare Facilities in Selected Riverine Communities, Rivers State, Nigeria.*

25. Alphonsus C., Chukwu J.N., Pande T., Nwafor C.C., Meka A.O., Eze C.C. & Ukwaja K.N. (2020), *Investigating Barriers and Challenges to Tuberculosis Service Delivery in Hard-to-Reach Riverine Areas: A Mixed-Methods Study in the Niger Delta Region of Nigeria.*

26. Igboanugo G.M., Martin C.H. (2011), *What are pregnant women in a rural Niger Delta community's perceptions of conventional maternity service provision? An exploratory qualitative study*, «African journal of reproductive health», 15 (3), pp. 63-77.

27. Salami K.K., Dumbili E., Ezeah P. (2013), *Determinants of maternal and child healthcare service utilization among recently pregnant mothers in Ubulu-Okiti, Delta State Nigeria*, «International Journal of Sociology of the Family», pp. 115-127.

28. Dienye P.O., Brisibe S.F., Eke R. (2011), *Sources of healthcare financing among surgical patients in a rural Niger Delta practice in Nigeria*, «Rural and Remote health», 11 (1), pp. 107-115.

29. Eyo O.A., Ekpenyong N.O., Omoronyia O.E., Mkpanam N.E., Nwoha D., *Unhealthy Lifestyle and Poor Healthcare Access: A Cross-Sectional Study in Rural Cross River State, Niger Delta Region, Nigeria.*

30. Wurie H.R., Samai M., Witter S. (2016), *Retention of health workers in rural Sierra Leone: findings from life histories*, «Human resources for health», 14 (1), pp. 1-15.

31. Amalba A., Abantanga F.A., Scherpbier A.J., Van Mook W.N.K.A. (2018), *Working among the rural communities in Ghana-why doctors choose to engage in rural practice*, «BMC medical education», 18 (1), pp. 1-9.

32. Mullei K., Mudhune S., Wafula J., Masamo E., English M., Goodman C., Blaauw D. (2010), *Attracting and retaining health workers in rural areas: investigating nurses' views on rural posts and policy interventions*, «BMC health services research», 10 (1), pp. 1-10.

33. Chukwuemeka E., Ewuim N., Amobi D.S.C., Okechukwu L. (2013), *Niger delta crisis – a study of Evwerem and Otu-Jeremi communities: implications for Nigeria's sustainable development*, «International Journal of Accounting Research», 1 (4), pp. 1-19.

34. Mbemba G.I.C., Gagnon M.P., Hamelin-Brabant L. (2016), *Factors influencing recruitment and retention of healthcare workers in rural and remote areas in developed and developing countries: an overview*, «Journal of public health in Africa», 7 (2).

35. Koufidis C., Manninen K., Nieminen J., Wohlin M., Silén C. (2020), *Grounding judgement in context: A conceptual learning model of clinical reasoning*, «Medical Education», 54 (11), pp. 1019-1028.

36. Manyati T.K., Mutsau M. (2021), *A systematic review of the factors that hinder the scale up of mobile health technologies in antenatal care programmes in sub-Saharan Africa*, «African Journal of Science, Technology, Innovation and Development», 13 (1), pp. 125-131.

37. Mustapha B.M., Utulu S., Tyndall J. (2022), *Philosophical Dimensions of Research in M-Health-Based Disease Surveillance in Sub-Saharan Africa: A Systematic Literature Review.*

38. Ilesanmi O., Afolabi A. (2022), *Covid-19 Health Literacy in Rural and Urban Communities in Nigeria: A Key Strategy for Improving the COVID-19 Outbreak Response*, «Global Biosecurity», 4 (1).

39. Aljassim N., Ostini R. (2020), *Health literacy in rural and urban populations: a systematic review*, «Patient Education and Counseling», 103 (10), pp. 2142-2154.