

UNITED NATIONS CHILDREN'S FUND

Request for Proposal for Services (RFPS) from qualified service providers of newborn clinical decision support software and services to strengthen provision of newborn care, and management of hypoxemia in Nigeria

TERMS OF REFERENCE

Duration of contract:	2 years	
Start date and end date	From: TBD	To: 31 st , Aug 2024
Funding Code: SM220059 and SC210592	Grant: WBS: 3210/A0/06/001/001/013	

**SECTION A
5TERMS OF REFERENCE**

Request for proposal: Newborn clinical decision support software and services to strengthen provision of newborn care, and management of hypoxemia

Assignment: Supply clinical decision support software to improve the provision of care in level-2 newborn units, build capacity for the management of hypoxemia and analyze countrywide and state level hypoxemia management data to develop hypoxemia prevalence estimates and inform decision making

Location: At the state level. Initially in Oyo, Kano, Kaduna and River states but other states could be added

Duration: 2 years

Start date: September TBD

End date: August 31st , 2024 (tentative)

Reporting to: UNICEF Health Manger

Closing date for proposals: 16th September, 2022; 2.30pm

1. Background

The fundamental mission of UNICEF is to promote the rights of every child, everywhere, in everything the organization does — in programs, in advocacy and in operations. This includes that all children including newborns, can access and benefit from goods and services that provide an opportunity to survive, thrive, develop, and transform to reach their full potential, without discrimination or bias.

In Nigeria, approximately 7 million babies are born annually. Unfortunately, about 250,000 of these newborns die by the first month of life, with nearly one third dying on the day of birth. Nigeria has the highest number of newborn deaths in Africa, contributing about 8% of the world's annual neonatal deaths. The newborn mortality rate increased from 37 deaths per 1000 live births in 2013 to 39 deaths per 1000 live births in 2018, accounting for 32% of all under-five deaths. Furthermore, the country has a high number of stillbirths at nearly 314,000 annually. Expanding access to quality maternal and newborn health services to reduce newborn deaths in Nigeria will have positive implications for Africa and the world.

UNICEF supports the efforts of the Federal Ministry of Health (FMOH) and State Ministries of Health to improve access to quality maternal and newborn care through the implementation of Reproductive Maternal Newborn Child and Adolescent Health strategies and the Nigeria Every Newborn Action Plan (NiENAP). One of the key indicators of ENAP is that 80% of district hospitals should have a functional level-2 newborn care unit. This involves procuring and installing equipment, and equipping healthcare workers to improve the provision of essential newborn care at birth and care for small and sick newborns in level-2 newborn care units (aka Special Baby Care Units (SBCUs) at secondary health facilities).

One component of care, respiratory support, involves management of hypoxemia and timely provision of oxygen which can be the difference between life and death for small and sick newborns, children with pneumonia and COVID-19 patients. Pulse oximetry and multi-modal pulse oximetry-respiratory rate devices help health care providers identify which patients have hypoxemia, an abnormally low level of oxygen in the blood which can be fatal if untreated. Healthcare providers manage hypoxemia utilizing these devices to monitor oxygen therapy, alerting when to initiate, increase, decrease, or discontinue the provision of oxygen. Hypoxemia management is critically important where oxygen supplies are limited. Hypoxaemia prevalence is an important input into country oxygen demand quantification ([Oxygen System Planning Tool](#)) and oxygen system resiliency planning.

To respond to increasing and ongoing country needs, UNICEF is looking to contract the services of a qualified entity to 1. supply clinical decision support software to improve the provision of care in newborn corners and level-2 newborn units, 2. strengthen the management of hypoxemia to improve quality of care, and 3. analyze countrywide and state level hypoxemia management data to develop hypoxemia prevalence estimates and inform decision making.

2. Programme ID & Specific Project Involved:

Outcome 1: Children, adolescents and women have equitable access to, and use improved and quality, high-impact maternal, neonatal and child health interventions and adopt healthy life practices.

Output 1.1: The health system at all levels have strengthened capacities and improve utilisation of essential high-impact maternal, newborn, child, and adolescent health interventions.

3. Objective

The objective of this Request for Proposal for Services (RFPS) is to establish a contract with a qualified service provider with demonstrated experience 1. implementing clinical decision support software on tablets in a context with unreliable power, intermittent internet and security constraints, 2. training healthcare workers on hypoxemia management and 3. analyzing countrywide and state level hypoxemia management data to develop hypoxemia prevalence estimates, inform decision making around oxygen system planning and improve quality of care. These services will assist UNICEF, the FMOH, and State Ministries of Health in implementing states.

The service provider is expected to provide technical support and fully engage with UNICEF, the FMOH, State Ministries of Health and partners in the planning and implementation of the software solution and delivery of services.

4. Scope of Work

The selected service provider will work within the framework of the established contract under the supervision of UNICEF to deliver the services to the implementing health facilities per UNICEF's specified needs. UNICEF has a nationwide presence, but not all services will be implemented nationwide.

5. Requirements: description of the standard service areas

The selected service providers should have the requisite expertise in and be able to deliver services that respond to the requirements of all four service areas outlined below.

5.1 Service area 1: Clinical Decision Support Software

Objective: Improve the provision of essential newborn and small and sick newborn care through the use of a clinical decision support solution at the point of care in level-2 newborn units

The clinical decision support solution is needed to support fidelity to evidence-based clinical guidelines, facilitate dissemination of guideline updates, and provide a realtime feedback loop in newly established level-2 newborn units in a way that traditional approaches cannot (e.g. training workshops, clinicians providing clinical mentoring for a couple months, periodic supportive supervision visits, printing guideline documents, etc).

- 5.1.1 Scope of Services:

The clinical decision support solution must will provide data from the point of care in real time, follow the evidence-based clinical guidelines and consider patient and facility-specific factors

1. Support bedside decision making and guide nurses and midwives through complex point-of-care assessments based on clinical guideline documents. Such support is needed because newborn guidelines are complex to follow for multiple reasons and doctors, pediatricians and neonatologists are not available 24/7. The software must consider patient and site specific factors.
 - **Patient specific factors:** For example, the medication dosing depends on the baby's gestational age in weeks and the dosage and delivery (e.g. IV drip) must be calculated. Clinical decision support software can do the math. Different aspects of the guideline interact based on patient specific factors and this is where it becomes very complex for the nurses. For example, if a nurse has started respiratory support with bCPAP, the guidelines specify multiple additional interventions that should be urgently considered because the baby is sick. A baby's condition can deteriorate very quickly. Clinical decision support software can guide the nurse provider through the needed assessments and support the initiation of all the needed interventions in a timely manner.
 - **Site specific factors:** Every neonatal care intervention is not available at every site by design. For example, many clinics and hospitals cannot provide level 3 care for a baby by design. However, there are emergencies where people show up and timely provision of care available at that site or referral is required. Clinical decision support software should consider site specific factors (which interventions are provided at this site by design). Clinical decision support can guide the nurse or midwife through the clinical assessments to initiate needed care, potentially reducing unnecessary referrals, or to provide appropriate pre referral care and initiate the referral when required quickly.
2. Improve dissemination of evidence-based guidelines and lower associated costs of rolling-out updates by pushing updates through the app/software. Costs associated with printing paper-based guideline documents and refresher training workshops can be reduced by utilizing the software/app, supportive supervision visits can be targeted based on feedback data gathered by the app and version control challenges to remove outdated paper documents from circulation can be mitigated.
3. Provide a feedback loop with data gathered in real time from the point of care identifying
 - a. Is it there - where technologies, accessories or consumables need re-stocked,
 - b. Does it work – which technologies need repair,
 - c. Is it used - where additional clinical training, supervision and mentoring is needed to support the provision of care

- 5.1.2 Type of Delivery

The solution type of delivery should be Out of the Box or Configurable by UNICEF and partners with easy-to-use tools provided by the Proposer. If any customization is necessary, the Proposer shall specify the approximate number of man-hours that will be required to complete the customization, account for all phases of the project implementation lifecycle, including testing and integration, when providing time estimates.

The following definitions of Type of Delivery apply:

- **Out of the Box:** Fully supported, standard functionality and technical requirements can be fulfilled with the MDM solution that the Proposer is offering, without any additional work (i.e., configuration or programming).
- **Configuration:** Fully supported, requirements cannot be fulfilled “out of the box” but it can either be configured with parameters or easy-to-use tools provided by the Proposer or the functionality needs to be developed by a programmer or a technical consultant specialized in the product without additional cost to the education section; Light to medium configuration required; Potential additional costs.
- **Customization Required- additional cost:** Requirements cannot be fulfilled “out of the box” and cannot be easily configured. To fulfil these requirements the functionality needs to be developed by a programmer or a technical consultant specialized in the product. Proposer should specify the estimated man hours and hourly rate. If man hours cannot be provided, at least the hourly rate should be given.
- **Available in a future release**
- **Not Available:** The requirement cannot be easily configured or customized.

- 5.1.2 Functions and Features

The clinical decision support solution requirements include

- Harmonization with Nigeria newborn clinical guidelines.
- Online/offline capability, data analytics, custom branding management, visibility dashboard, geo locations, communications management, admin roles, and identity and access management.
- Device set up and ongoing support services, maintenance and upgrades to improve the user experience.
- A comprehensive up-to-date knowledge base that is available to support users and administrators and trouble shooting support.
- Online technical training for the UNICEF Nigeria Team and Government stakeholders in all aspects of maintenance and administration, operating and troubleshooting the solution. Training shall also cover the basic and advanced functionalities.
- Support for design and implementation of a device (tablet) management plan per clinical site participating.

- 5.1.3 Platform and Infrastructure Architecture

The health section requires a Software as a Service (SaaS or subscription-based model) hosted and managed by the Proposer utilizing the Proposer’s servers.

- 5.1.4 Support of Devices and Operating Systems (OS)

The clinical decision support software will be installed onto 35 tablets in 4 units per the below technical specification (e.g., Samsung Tab A8). Specifications will evolve based on programme learnings and evolution

of common devices. UNICEF requests the option to add additional tablets and newborn care units during the contract period.

Screen Size: 8 inches

CPU multi-core 1.6 GHz

RAM: 2GB

ROM: 64GB

Main Camera: 8 MP

Selfie Camera: 1 MP

MicroSD card slot: 500GB capacity

Screen Resolution: 800 x 1280 pixels

Operating System: Android 9.0

Output: 3.5mm Jack

Comms: WLAN Wi-Fi 802.11 a/b/g/n, Bluetooth Ver. 4.x

Battery: 4500maH

Protection: Casing with screen cover

Operating system: Android

5.2 Service delivery area 2: hypoxemia management training to improve the quality of care

- Build capacity of health workers on hypoxaemia management in 9 states (Oyo, Kano, Kaduna, Bauchi, Cross River, Ebonyi, Ogun, Rivers, and Sokoto States)
- Conduct Training for trainers in the states

5.3. Service delivery area 3: analysis of nationwide and state level hypoxemia data

Conduct analysis of national and state level data on hypoxaemia management as part of the ongoing nationwide oxygen assessment to inform decision making around hypoxaemia management and quality of care improvements:

- Conduct comprehensive analysis of data on hypoxaemia management from the ongoing national oxygen assessment and write final survey report on hypoxaemia management
- Prepare Power Point presentation and support the dissemination of the report
- Develop a manuscript from the report for publication

5.4 Service delivery area 4: provision of additional newborn care and hypoxemia management services

UNICEF may request add-on services to improve quality care and hypoxemia management. The scope of add on services would be to support of the implementation of Reproductive Maternal Newborn Child and Adolescent Health strategies, the Nigeria Every Newborn Action Plan (NiENAP), and oxygen system strengthening.

6. Deliverables and timelines

Work Assignment Overview			
Tasks/Milestone:	Deliverables/Outputs:	Final Deliverables	Timeline
1. Customize electronic clinical decision tool in accordance with clinical guidelines for Nigeria and tested.	Electronic clinical decision tool aligned to clinical guidelines for newborn care in Nigeria is available and ready to be used by health care workers.	Electronic clinical decision tool customized to Nigeria standards for newborn care	End of November 2022
2. Health workers have capacity and implement electronic clinical decision tool in 4 level-2 newborn care units	Health workers have capacity to use the electronic clinical decision tool, the tool reflects individual site specific factors, and device management SOPs are implemented.	Electronic clinical decision tool is utilized in 4 level-2 newborn units and initiation report is submitted	December 2022- May 2024
6. Health workers utilize electronic clinical decision tool in 4 level-2 newborn care units	Trouble shooting and device management SOP refinement are supported. Selected firm will provide a publication proposal, support iterative reviews (3 max), and incorporate input from UNICEF and stakeholders in the development of the publishable manuscript.	Electronic clinical decision tool is utilized in 4 level-2 newborn units, and quarterly reports and a publishable manuscript submitted to UNICEF	Jan 2023- May 2024
7. Develop manuscript on use of clinical decision support software in Nigeria to inform scale up	Publishable manuscript developed with a publication proposal (e.g., which journal(s)). Selected firm will support iterative reviews (3 max) and incorporate input from UNICEF and stakeholders	Manuscript submitted	May 2023
3 Capacity building for health workers on hypoxaemia management	Health workers have enhanced capacity on hypoxaemia management	Report on the number of health workers trained	September - December 2022
4. Analyze data from hypoxaemia management survey	-Evidence generated on the status of hypoxaemia management from the national survey	Final report and slide deck submitted	End of October 2022
5. Develop manuscript on hypoxaemia management	At least one manuscript developed with a publication proposal (e.g., which journal(s)). Selected firm will support iterative reviews (3 max) and incorporate input from UNICEF and stakeholders	Manuscript submitted	December 2022

7. Mandatory Documentation to Be Submitted for Assessment

Desired firm will demonstrate a proven experience in the three service areas. Suppliers will need to submit both a technical and a financial proposal based on the Terms of Reference describing the related clinical decision support solution and approach they are proposing and linking it with the respective costing in the commercial proposal.

7.1 Technical proposal detailing (70 points)

Suppliers should have the requisite expertise in and be able to deliver services that respond to the requirements of all three service areas.

The proposal should describe the proposed clinical decision support solution and methodology for providing all three services Areas requested per the deliverables and timeline, including a project plan and resources to be used (resources are only to be included in the commercial proposal).

The firm will be evaluated against below criteria:

- Clinical decision support solution offered (30)
- Device management plan (10)
- Training plan (15)
- Methodology proposed for hypoxemia management analysis and publication (15)

Please also provide at least two client references or case studies of previous experiences in providing the required services. Reference Nigerian States and countries where the firm has experience in delivering the services.

6.2 Financial proposal (30 points)

UNICEF has defined the Service Areas that suppliers can bid against.

Financial proposals should preferably include average/estimated all-inclusive lump sum for the respective Service Area in line with the deliverables as defined by UNICEF. Alternatively, a realistic and operational cost range per defined Service Area can also be accepted, as long as the supplier defines which factors influence the price within the provided range. In addition, For service area 1, financial proposals should include the subscription cost per quantity of devices.

The estimated cost break-down for each Service Area will provide UNICEF with visibility and understanding of the cost structure for each Service Area. UNICEF may have additional requirements during the contract period e.g., need for services in additional newborn units, additional Nigerian states, or under service area 4. In case of additional requirements, the Proposer shall provide a separate quotation for each requirement per the cost structure provide for each Service Area.

8. Location and Duration

2 years, to mid-2024

Service area 1: Oyo, Kano, Kaduna and Rivers States

Service area 2: 9 states, Oyo, Kano, Kaduna, Bauchi, Cross River, Ebonyi, Ogun, Rivers, and Sokoto States

Service area 3: 9 states receiving the oxygen plants and nationwide

UNICEF requests the flexibility to expand the services to additional newborn units and states within the duration of the contract.

9. Payment Schedule

Payment terms 30 days net upon receipt of approved invoice.

- 2022: 15% after the completion of each of deliverables 1, 2, 3, 4, and 5
- 2023:
 - 10% after the completion of deliverable 6 or cost monthly subscription cost consistent with the subscription model pricing offered
 - 15% after the completion of deliverable 7

Instruction to bidders:

1. All proposals should be made with a forwarding letter on your letter headed paper containing your contact details e.g name, phone number, email address etc. **Proposal (technical and financial) made without this details on letter head shall be disqualified. Be guided**
2. All proposals should be submitted to : ngrsupply@unicef.org - dont copy anybody
3. This is "Request for Proposal" therefore, Technical and Financial should be separately made and clearly indicated while submitting them online to the email provided above.
4. The RFP number starting with 9177439 should be quoted on the subject matter of your forwarding email. Submission without this RFP number will NOT be opened.
5. Read the ToR and the Instructions to bidders carefully before making your proposals.

10. Signatures

Requested by:	Reviewed by:	Reviewed by:	Endorsed by:	Approved by:
Health Manager	Innovation Manager	OIC Chief of Supply	Chief of Health	Deputy Representative