REPORT DOCUMENTATION

Sokoto State Health Labour Market Analysis 2026

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Excel · Python · Node.js · Word · HTML

109
pages in five parts

23
Local Government Areas

66
cadres in the nominal roll

71
respondents across six field instruments

This is a government report for the Sokoto State Ministry of Health. This document explains how the report was produced. It does not reproduce the findings or figures in it. The full report is available on request where the Government allows it.

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01 THE STORY BEHIND THE REPORT

> *Imagine a commissioner of health is asked a plain question: how many health workers does Sokoto have, where are they, and how many more does the State need? Each office answers differently. The nominal roll gives one number, the establishment list another, the hospital board a third.*
>
> *A Health Labour Market Analysis is the attempt to answer the question properly. It puts the records side by side, decides which count to trust and says why, and then follows the workforce through training, hiring, posting, pay and exit.*

The Sokoto State Health Labour Market Analysis 2026 is the State's first look at its health workforce as a labour market. It runs to 109 pages and follows the WHO framework, prepared for the Sokoto State Ministry of Health with the analytical framework of the Federal Ministry of Health and Social Welfare, technical and financial support from UNICEF Nigeria, and technical implementation by the Innovative Hub for Research in Africa (IHfRA).

It covers the State's public health workforce, the institutions that train it and the money that pays for it, with 2026 field surveys across four Local Government Areas added to the administrative record.

02 MY ROLE

- Led the analysis and wrote the report.

- Worked the stakeholder-assembled policy questions into the analysis matrix, each scored for relevance, alignment, actionability, interest and equity.
- Built the stock-and-flow projection and set the field survey results beside the registers.
- Carried limitations through the report wherever they bear on a finding.

03 WORDS USED IN THIS DOCUMENT

Word	What it means
HLMA	Health Labour Market Analysis. It treats the health workforce as the product of two markets, one that educates people and one that employs them.
Pillar	One of the four parts of the WHO framework: supply, economic demand, population health need and financial space.
Thematic area	A chapter group of the report. The questions are sorted into five: population health need, economic demand, education and production, supply and distribution, and financing.
Policy question	A question the State asked the analysis to answer, for example "are staff posted where the people are?".
Clinical workforce	Doctors, nurses and midwives, community health cadres, pharmacy, laboratory, radiography and dental cadres. Densities use these cadres only.
Density	Clinical workers for every 10,000 people. It lets a small area and a large area be compared fairly.
WHO threshold	44.5 doctors, nurses and midwives per 10,000 people, the level the WHO links to the health goals of the SDGs.
Staff Availability Ratio	Workers the State has, divided by workers the threshold says it needs. A ratio of 1 means the need is met.
Register	A list kept by one office, such as a nominal roll, an establishment list or a training return.
Release	The money actually paid out against an approved budget. Approval is a promise; release is the cash.
Pace	A stated yearly growth in the clinical workforce used in a projection. It is a policy scenario, not a forecast.
Void	A register that exists but is empty. In this work a void is recorded as a finding and is never filled with a guess.

04 THE QUESTIONS THE STATE ASKED

Policy questions were assembled with State stakeholders and organised across five thematic areas: education and production, supply, distribution and retention, market demand and absorption, population health needs, and financing and investment. Each question was assessed for contextual relevance, alignment with State and national goals, actionability, stakeholder interest and equity, and then ranked by priority. Annex A records the questions under each area.

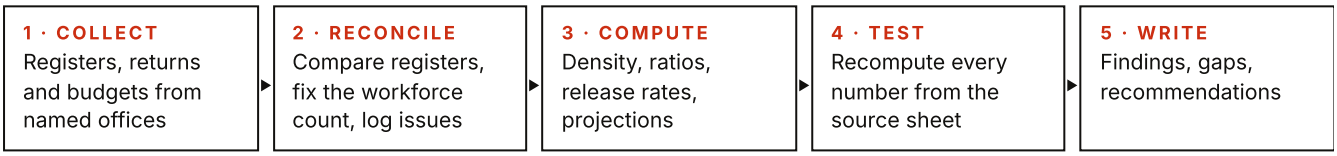
05 WHERE THE EVIDENCE CAME FROM

The nominal roll covers sixty-six cadres. The workforce total is recorded differently in four registers, so the report states which total each analysis uses.

Source	What it supplied	Feeds
Workforce registers	Nominal rolls, cadre and skill-mix registers, establishment (approved, filled, vacant posts).	Supply

Source	What it supplied	Feeds
Service statistics	DHIS2 returns: outpatient visits, antenatal care, deliveries, disease counts, by Local Government Area.	Need, supply
Budget records	Approved budgets, releases, spending and wage-bill lines, several years.	Demand, financing
Training returns	Admissions, enrolment, graduation, licensing, accreditation, faculty and internship, by institution.	Education
Surveys and national data	Population projections, household surveys, insurance enrolment, WHO and national benchmarks.	Need, financing
Ten-year training budgets	Approval and release records, 2015 to 2024.	Education, financing
Primary data 2026	Six instruments with 71 respondents in four Local Government Areas: facility managers, patients, students and graduates, training institutions, health workers and the finance desk.	All
Contributory scheme and inventories	Enrolment records and equipment inventories.	Financing, supply

06 HOW THE ANALYSIS WAS BUILT



A stock-and-flow projection

Supply projections to 2030 carry forward recorded training output and recorded exits under three scenarios: the current course, full release of the approved training budget, and a funded establishment path included as a policy target, not as a forecast.

THE FORMULA

```
stock(next year)  =  stock(year)  +  graduates hired  −  recorded exits
```

> **An everyday example.** A cadre with 400 workers, 40 graduates hired and 30 exits ends the year at 410.

The survivorship note

Exit interviews were done at facilities. People interviewed at a facility are the ones who reached one, so measures taken at the door understate the barriers facing those who did not. That consideration is carried through every exit-based finding.

Three conventions are applied throughout and stated in the method chapter of each report.

1. Where two registers disagree, show both, say which is used and why. Never choose silently.
2. Where a source table is empty, record the void as a finding and name the document that would fill it. Never substitute an estimate.
3. Where a figure is a lower bound because its source says it is incomplete, label it as a lower bound wherever it appears.

07 HOW THE KEY NUMBERS ARE WORKED OUT

Clinical density

Density is the first number every chapter leans on. It is simple, but it is easy to get wrong, so the rules are fixed before any table is built.

THE FORMULA

```
density  =  clinical workers  ÷  population  ×  10,000

Excel:   =ROUND( B2 / C2 * 10000 , 1 )
```

HOW IT WORKS, STEP BY STEP

1. Count only the cadres on the clinical list. Health information, environmental health and lay community workers are set aside.
2. Use one population figure, from one year, for every row, so that every density shares a denominator.
3. Divide the workers by the population, then multiply by 10,000.
4. Compare with the 44.5 threshold, and say which cadres the threshold was written for.

> **An everyday example.** A district with 1,200 clinical workers and 400,000 people has 1,200 ÷ 400,000 × 10,000 = 30 workers per 10,000. That is two thirds of the threshold.

Staff Availability Ratio and shortfall

THE FORMULA

```
requirement  =  population ÷ 10,000 × 44.5
ratio        =  workers available ÷ requirement
shortfall    =  requirement − workers available
```

> **An everyday example.** A State of 500,000 people needs 500,000 ÷ 10,000 × 44.5 = 2,225 workers. If it has 1,000, the ratio is 0.45 and the shortfall is 1,225.

Builds on: Clinical density. The same workers and the same population feed both.

Projection to the end year, by pace

A forecast needs a long history of the workforce. The States do not have one, so I did not fit a trend. I built scenarios, each with a stated yearly growth in clinical workers, and showed what each one does to density and to the gap.

THE FORMULA

```
workforce(year+1)   =  workforce(year)   × (1 + pace)
population(year+1)  =  population(year)  × (1 + growth)
density(year)       =  workforce(year) ÷ population(year) × 10,000
```

HOW IT WORKS, STEP BY STEP

1. Take the clinical workforce and the population in the base year.
2. Choose the paces: replacement only (no growth), the current pace, and an accelerated pace.
3. Grow the workforce by the pace and the population by the stated growth rate, year by year.
4. Read off density and the shortfall against the threshold for the end year.

An everyday example. Start with 1,000 workers and 400,000 people. At a pace of 10% for five years, the workforce is $1{,}000 \times 1.1^5 = 1{,}611$. With population growing 3% a year it is 463,710. Density is $1{,}611 \div 463{,}710 \times 10{,}000 = 34.7$.

Population growth is a stated assumption in every report. Where the State's own series contained a one-off rebasing step, I did not fit the growth rate across it, because that would have overstated future growth.

Release rate

THE FORMULA

```
release rate  =  amount released  ÷  amount approved
```

An everyday example. If 100 million naira is approved and 25 million is released, the release rate is 25%. The other 75 million was appropriated and never paid.

Testing a relationship

Where the question is whether staffing follows population or patient volume, I used a correlation coefficient and gave the p-value, so the reader can judge. With 11 to 25 areas the sample is always small, so the result is reported as indicative, not as proof.

08 PROBLEMS FOUND IN THE RECORDS AND WHAT I DID

Recorded in the method chapter and carried through the findings.

Issue	What I did	Why
Workforce total recorded in four registers	Stated which total each analysis uses	No single figure traces from budget to named staff
Attrition recorded only for facility staff and for recent years	Used a partial denominator and labelled it	A full exit rate cannot be computed
No payroll cost by cadre and grade	Limited the feasibility analysis to production costs	A hiring scenario cannot be priced in naira
Education returns incomplete or inconsistent (internship, accreditation)	Recorded the gaps and used what was consistent	Mixed returns give a false pipeline
Distribution table records only five clinical cadres by Area	Computed Area densities on those five and said so	A fuller cadre list is not recorded by Area
Small and urban-leaning field samples	Read as indicative testimony, not as measurement	They cannot be generalised

09 WHAT IS IN THE REPORT

Part	What it does
Part I	Context, framework, data sources, methods and the fiscal setting.
Part II	The five thematic areas in turn, each ending with the findings carried forward.
Part III	The workforce arithmetic: projections, the needs-based requirement and the cost of the additions.
Part IV	The evidence base: which questions the records answer and which they cannot.
Part V	Recommendations, with who leads, when, and how progress is monitored.

The report also contains three annexes: the pillars and questions, the finding against each question, and data sources, instruments and limitations.

10 CHAPTER BY CHAPTER

The table follows the contents page of the Sokoto State report. Page numbers are those printed in the report. A section starts on the page shown and runs to the start of the next one.

Section	Title	Page	The question it answers
1	Introduction	19	Why the report exists and what it covers
2	Methodology	22	How the analysis was done
3	The Political Economy and Fiscal Context	25	The policy and fiscal setting
4	Population Health Need and Workforce Requirements	28	Need: how many workers the population requires
5	Economic Demand for Health Workers	37	Demand: what the State can afford to employ
6	Education and Production of Health Workers	47	Education: who is trained and how many qualify
7	Health Workforce Supply, Distribution and Retention	62	Supply: who works where, and who stays
8	Health Workforce Financing and Investment	73	Finance: what is spent and when it is released
9	Clinical Workforce Projections to 2030	87	Where the workforce is heading
10	Needs-Based Requirements and the Staff Availability Ratio	93	How far supply meets need
11	Financial Feasibility of Workforce Investment	96	What closing the gap would cost
12	Exploratory Labour Market Analysis	99	Extra evidence on the labour market
13	Cross-Cutting Synthesis	103	How the findings fit together

11 HOW TO READ IT IN TWENTY MINUTES

A READING ORDER FOR A BUSY READER

1. Read the executive summary first. It gives the main findings, and the report is organised around five analytical pillars: need, demand, education, supply and finance.
2. Turn to Section 13, Cross-Cutting Synthesis (page 103), to see how the findings connect.
3. Go back to the pillar that matters most to your decision and read that section in full.

12 LIMITATIONS STATED IN THE REPORT

No return carries the payroll cost of a post by cadre and grade, so the cost of a hiring scenario cannot be stated in naira. Attrition is recorded only for facility staff. Several education returns are incomplete. Area densities use only the five clinical cadres the distribution table records. Field samples are purposive and small. Population growth of three per cent is a stated assumption.

13 OUTPUTS AND HOW THEY WERE USED

A written analysis the State can act on, with every finding traced to a named register, each gap in the evidence recorded as a finding, and prioritised recommendations built on the State's own data.

An analytical workbook that recomputes every figure in the report from the source sheets, so a reviewer can follow any number back to the office that supplied it.

Input to the consolidated six-state report, which sets the findings beside those of the other five States.

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