REPORT DOCUMENTATION

Nasarawa State Health Labour Market Analysis 2026

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Excel · Python · Node.js · Word · HTML

85	13	22	2035
pages in four parts	Local Government Areas	prioritised policy questions	end year of the projections

This is a government report for the Nasarawa 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 Nasarawa 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 Nasarawa State Health Labour Market Analysis 2026 is the State's first look at its health workforce as a labour market. It runs to 85 pages and follows the WHO framework, prepared for the Nasarawa 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 validated clinical workforce across its thirteen Local Government Areas, the training institutions and the money that pays for it, with a community survey and key informant interviews added to the administrative record.

02 MY ROLE

- Led the analysis and wrote the report.

- Worked from the prioritisation workshop's voting results to build the question matrix.
- Rebuilt the analysis in the validation round from the agreed baseline of 22 July, and rebased the supply projection on the all-sector workforce.
- Classified every record by cadre title so densities use the clinical workforce only.

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

State stakeholders listed candidate issues by pillar, merged duplicates and restated each issue as an answerable question. They then voted on each question and the results were read back and debated before priority levels were fixed.

> *The voting record produced a useful surprise. Education questions drew the strongest agreement. Two questions that later gave some of the most informative findings, the availability of shortage cadres and compliance with the Abuja budget commitment, were voted low and very low priority. What stakeholders wanted to know first and what the evidence taught most did not coincide.*

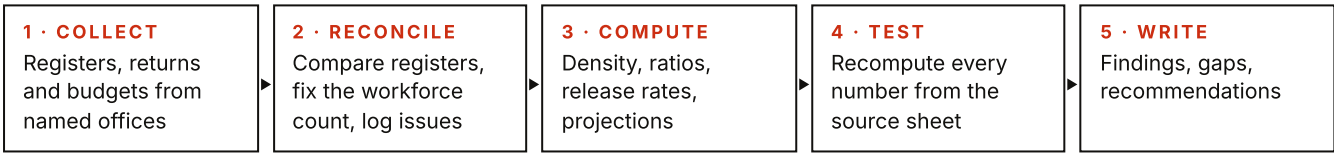
Each prioritised question was then given a named method, data sources and responsible stakeholders, with contact details recorded so data requests could be followed up. That matrix was the project management tool for the data phase.

05 WHERE THE EVIDENCE CAME FROM

DHIS2 supplied service statistics for all thirteen Local Government Areas, and its completeness held up in practice: monthly reporting was available for every area and every indicator requested.

Source	What it supplied	Feeds
Workforce registers	Nominal rolls, cadre and skill-mix registers, establishment (approved, filled, vacant posts).	Supply
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
Community survey and interviews	Verbal informed consent; no identifying information is reproduced.	Need, supply
Bursary and security records	Repeated visits to institutions; security data needed clearance from the Secretary to the State Government.	Education, supply

06 HOW THE ANALYSIS WAS BUILT



Analytical approaches named in advance

- Fair-share modelling: each Area's population share against workforce stock. It was specified, but final Area estimates are not shown because the validated dataset did not keep a reliable geographic identifier.
- Gap and funnel analysis: establishment against filled posts, applicants against seats, stock against needs-based norms, and hire-now against train splits.
- Projection: supply of clinical workers on recorded hiring under three attrition assumptions, set against need and funded-post trajectories to 2035.

Attrition is assumed, not measured

The State keeps no leavers' register, so the supply projection uses three stated attrition assumptions with a 5 per cent annual baseline, and says so wherever it is used.

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 × 1.1^5 = 1,611. With population growing 3% a year it is 463,710. Density is 1,611 ÷ 463,710 × 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

The validation round changed the baseline, so the report was rebuilt from the agreed file and not from the earlier return.

Issue	What I did	Why
Two population bases in use	Stated both and used one throughout	Densities need one denominator
An establishment anomaly for one cadre	Flagged it in the supply chapter	A wrong establishment inflates the apparent vacancy
Validated dataset lacks a reliable Local Government Area identifier	Withheld Area-level fair-share estimates	A wrong Area assignment misplaces workers
No sex, date of birth, entry date or exit reason in the records	Withheld gender and age analyses	They cannot be measured, so they are not guessed
Several financing tables with key columns blank	Recorded the blanks and used what was complete	Partial tables cannot support a total
Stakeholder priority and evidential value did not match	Reported both rather than dropping low-priority questions	The least wanted questions gave useful answers

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.

Chapter 2 holds the full method, including the workshop in detail, the use of digital systems, ethics and the limitations. Annex A reproduces the question matrix.

10 CHAPTER BY CHAPTER

The table follows the contents page of the Nasarawa 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	16	Why the report exists and what it covers
2	Implementation process and technical methodology	23	How the analysis was done
3	Political economy and macroeconomic factors influencing the health labour market	30	The policy and fiscal setting
4	Thematic Area 1: Population Health Need and Service Utilisation	42	Need: how many workers the population requires
5	Thematic Area 2: Economic Demand for Health Workers	51	Demand: what the State can afford to employ
6	Thematic Area 3: Education and Production of Health Workers	58	Education: who is trained and how many qualify
7	Thematic Area 4: Health Workforce Supply, Distribution and Retention	65	Supply: who works where, and who stays
8	Thematic Area 5: Health Workforce Financing and Investment	71	Finance: what is spent and when it is released
9	Cross-Cutting Synthesis	78	How the findings fit together
10	Workforce projections to 2035	81	Where the workforce is heading

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 9, Cross-Cutting Synthesis (page 78), 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

Private-sector data are partial: private wages, vacancies and dual practice are not recorded. Attrition is assumed at a 5 per cent annual baseline. Sex and age were unavailable, which rules out gender and retirement analyses. Some financing tables were incomplete at source.

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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