REPORT DOCUMENTATION

Delta State Health Labour Market Analysis 2026

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Excel · Python · Node.js · Word · HTML

77	25	34	2035
pages in four parts and twelve chapters	Local Government Areas	policy questions in five areas	end year of the recruitment arithmetic

> This is a government report for the Delta 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 Delta 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 Delta State Health Labour Market Analysis 2026 is the State's first look at its health workforce as a labour market. It runs to 77 pages and follows the WHO framework, prepared for the Delta 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).

The scope is the public health workforce across all twenty-five Local Government Areas, the nine public and one private training institutions that produce it, and the public money that pays for it. Private-sector employment is outside the scope because no return recorded it.

02 MY ROLE

- Led the analysis and wrote the report.

- Tested, question by question, whether the State's returns can answer it.
- Recomputed every table from the data rather than from the summary panels in the workbook.
- Set one reference year so every density and per-capita figure shares the same base.

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

The national matrix groups thirty-four policy questions into five thematic areas. The table shows how many sit in each area. Part IV of the report is given over to testing whether the State's returns can actually answer them.

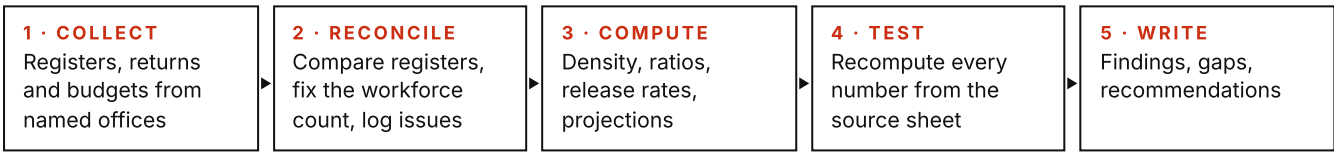
Thematic area	Questions	What the area asks
Population health need	6	What workload the population's health needs place on the workforce.
Economic demand	4	What posts the State funds, replaces and pays for.
Education and production	13	How workers are trained, accredited, admitted and absorbed.
Supply, distribution and retention	7	How many workers there are, where, and how long they stay.
Financing and investment	4	Fiscal space, partner funding and the price of closing the gap.

05 WHERE THE EVIDENCE CAME FROM

Returns came from the offices that hold them. Where a return needed figures from two offices, for instance the State and the local government payrolls, it was the one most often left empty.

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
Emergency and agencies	Ambulance service and the Local Government Service Commission returns.	Supply

06 HOW THE ANALYSIS WAS BUILT



Testing the evidence base first

Before writing any finding I tested every one of the thirty-four questions against the data actually entered, and counted a question as answerable only where its tables held enough numeric entries to support the metrics its own summary panel computes. This is why Part IV exists, and why the report can say plainly which half of the matrix cannot yet be answered.

Summary panels against tables

Several live summary panels in the workbook disagreed with the tables beneath them. In every case I computed from the table and recorded the disagreement in the report.

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

These are the issues that changed how a number was calculated or whether it could be calculated at all.

Issue	What I did	Why
Five live summary panels disagree with their own tables	Computed from the table and recorded each disagreement	The panel is a convenience; the table is the record
Three data errors in the returns	Recorded each one in the report instead of correcting it silently	The State can then see what was changed and why
Remuneration, amenities, replacement, absorption and employment budget returns are empty	Recorded each void as a finding and stated what conclusion it blocks	Without them the gap cannot be priced
Two counts of the workforce	Showed both and stated which one drives each table	Density needs one clear denominator
Figures from different years in the same table	Anchored everything on one reference year and labelled any exception	Mixed years make a comparison unfair

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	What it answers
1 Purpose, scope and the counts used	Which workforce counts exist and which one the report uses.
2 Population, geography, service estate	The setting: people, terrain and facilities.
3 Policy architecture and fiscal position	The instruments and the money behind them.
4 Size and shape of the workforce	Cadres, ages, sex and employer mix.

Chapter	What it answers
5 Where the workforce is	Distribution against population and service volume.
6 Conditions of work	Equipment, amenities and what the workforce has to work with.
7 Education and production	The training institutions and the pipeline.
8 Supply, outflows, retention	Exits, migration and what the records can say about them.
9 Financing the workforce	Budget, release and the cost of the workforce.
10 and 11 Trajectory to 2032, recruitment to 2035	Projections and what hiring would be needed.
12 What the evidence answers	The answerability of the matrix and the largest gaps.

10 CHAPTER BY CHAPTER

The table follows the contents page of the Delta 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	Purpose, scope and the counts this report uses	13	Why the report exists and what it covers
2	Delta State: population, geography and the service estate	17	Why the report exists and what it covers
3	Policy architecture and the fiscal position	22	The policy and fiscal setting
4	The size and shape of the health workforce	27	Supply: who works where, and who stays
5	Where the workforce is	32	Supply: who works where, and who stays
6	The conditions under which the workforce works	38	Who the workforce is and how it works
7	Education and production	44	Education: who is trained and how many qualify
8	Supply, outflows and retention	53	Supply: who works where, and who stays
9	Financing the workforce	56	Finance: what is spent and when it is released
10	The trajectory to 2032	60	Where the workforce is heading
11	Recruitment arithmetic to 2035	64	Where the workforce is heading
12	What the evidence answers and what it cannot	68	What the records cannot yet answer

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. Read Section 12, What the evidence answers and what it cannot (page 68), to see which policy questions the records could not answer and which document would answer them.
3. Go back to the pillar that matters most to your decision and read that section in full.

12 LIMITATIONS STATED IN THE REPORT

The economic demand returns are almost empty, so vacancies and replacement times cannot be reported. The remuneration returns are empty, so no pay comparison is possible. The exit register covers one cadre of twenty. The ward count was not entered for any Area. No field survey was run. About half of the thirty-four questions carry no usable data.

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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