



Delivering successful health infrastructure improvements

The Challenge

In Northern Nigeria, a lack of female health providers, including skilled birth attendants, is one of the key constraints to improving maternal and newborn health outcomes. The shortages are particularly evident and problematic in rural areas where cultural norms prevent women from being seen by a male health provider. As a result, a high 85% of women in the north deliver without skilled delivery care, compared to 35% in the south of the country.

The five-year UK aid funded Women for Health Programme (W4H) was established in 2012 to address the rural staffing shortages in five states in the north. The programme is being implemented by a consortium led by Health Partners International (HPI) with Save the Children and GRID Consulting. HPI has substantial experience of rehabilitating and equipping health facilities in a number of Nigerian states and other countries.

W4H aims to increase the number of 'front-line' female health workers (nurses, midwives, Community Health Extension Workers) and support their deployment to rural health facilities. Sixteen Health Training Institutions, including Colleges of Nursing and Midwifery and Schools of Health Care Technology, are being supported to train over 6,000 female health workers in Jigawa, Kano, Katsina, Yobe and Zamfara.

The programme focuses on:

- Improving **education and health training** for women and girls by making health training institutions more accessible and of adequate quality. Educational attainment in the region is generally of a low standard, and many parents have been reluctant to educate their daughters, especially in higher education. To scale up the numbers of women and girls enrolling in health training, W4H works to change attitudes to the education of young women and has established a Foundation Year Programme to help more rural women qualify for health worker training.

Key messages

- ✓ W4H successfully managed a large portfolio of construction works in a challenging and high risk environment
- ✓ Proactive risk management by programme staff meant that W4H was able to identify and address construction challenges without delay
- ✓ The construction works were used to leverage other improvements at health training institutions, in some cases considerably increasing government expenditure on these institutions
- ✓ W4H was able to successfully incorporate gender concerns in its health infrastructure improvement initiative

- Supporting the **recruitment and retention of midwives** in rural communities by addressing the political, socio-economic and practical barriers to their training, employment and retention. To make sure graduates return to work in their villages, W4H encourages community leaders and local government to draw up a written agreement (bond) with the young women who are selected for training, and, together with W4H, support them throughout their studies. The women are provided with training allowances, free childcare, counselling, books and medical treatment.
- Providing **management support and infrastructural improvements** to local health training institutions so that they are better able to cater for female students. W4H collaborates with these institutions, providing gender responsiveness training and supporting them to implement women-friendly measures.

When W4H started, only one of the training institutions had been granted full accreditation by national regulatory bodies such as the Nursing and Midwifery Council of Nigeria, which regulates Schools of Nursing and Midwifery, or the Community Health Practitioners Registration Board of Nigeria, which regulates Schools of Health Care Technology. To achieve full accreditation, training institutions are required to meet various criteria and standards across a number of domains (see Box 1). Since approximately 40 percent of the accreditation standards relate to the quality and appropriateness of infrastructure and building facilities, it was agreed that rehabilitation and new construction works would be a priority area for W4H.

Box 1 Buildings and Infrastructure Accreditation Requirements for Schools of Nursing and Midwifery

- ✓ At least 3 furnished and well ventilated classrooms to comfortably fit 50-100 students
- ✓ Minimum 3 tutorial rooms
- ✓ Large auditorium with a sitting capacity for at least 250 people
- ✓ Adequately furnished Principal's office with an attached Secretary's office
- ✓ Adequately furnished staff offices (maximum of 2 educators per office)
- ✓ Adequately furnished staff and student common rooms
- ✓ Library with minimum requirement of books
- ✓ Practical demonstration laboratory and adequately equipped basic sciences laboratory
- ✓ Computer unit with at least 24 work stations
- ✓ Adequately equipped hospital- and community-based clinical experience areas

A buildings needs assessment highlighted the absence of some structures, the high level of disrepair and dilapidation of existing buildings, and documented the improvements and investment that would be required to meet accreditation standards. The assessment also focused on the basic equipment (e.g. furniture, computer

equipment etc) that would be required to ensure that the facilities were 'fit for purpose'. The assessment identified that if training numbers were to increase in future, few of the institutions had the infrastructure and facilities to cope with the rising demand for training places. A separate assessment looked at the accommodation needs of trained midwives once deployed to rural primary health care facilities, and identified considerable gaps in the provision of adequate, safe and secure accommodation options.

Early in the programme, there were concerns about the high level of risk involved in supporting a large programme of infrastructure improvement in a fragile state in a context where fraudulent business practices were endemic. The challenge for W4H was how to manage this risk and achieve good value for money.

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A further challenge for the programme was how to ensure that the gender-specific needs of female students and tutors were reflected in the built environment at training institutions and health facilities. In the northern Nigerian cultural and religious context, it is vital to ensure that female tutors, students and health workers have the opportunity to teach, study and practise without compromising their family responsibilities and Islamic principles. Husbands and parents, whose support and encouragement are essential to the advancement of women and girls' careers, need to be assured of women's safety, security and moral well-being.



By October 2015, 155 separate construction projects had been completed

The Response

Infrastructure Improvement Plan

A multidisciplinary response was needed, with architects, building surveyors and building project managers working alongside gender advisers to devise culturally appropriate infrastructure solutions. To this end, four baseline studies were undertaken to inform the design of a suitable and appropriate infrastructure improvement plan:

1. A detailed buildings needs assessment, led by W4H's Facility Planner and an international consultant architect, was undertaken to assess the gap between accreditation requirements and what was on the ground.

2. A gender audit of training institutions¹ looked at all aspects of the institutions, including the built environment. Part of the gender audit comprised a transect walk where the audit team invited students to show them around the campus and tell them about their lives there.

By undertaking a transect walk around the campus, the gender audit team were able to "stand in the shoes of students" and see the institution, including the buildings, from their perspective

3. A knowledge, attitudes and practices study focused on the experiences of students who were already enrolled in the training institutions, including their attitudes towards the buildings and facilities.

4. A qualitative research study into the attitudes and motivation of midwives looked at the key factors that encouraged and motivated midwives to join and stay in the profession, including the working environment within which they operated.

The buildings needs assessment found the following:

- Absence of structures that were required to achieve full accreditation (e.g. classrooms; offices for tutors; laboratory and demonstration rooms; hostel accommodation for students etc).
- Inadequate services (e.g. electricity, lighting, water supply and sanitation).
- Existing infrastructure affected by differing levels of disrepair and dilapidation (e.g. leaking roofs, broken fence walls, lack of drainage, driveways, walkways, and faulty electrical fittings).
- Inadequate housing for midwives at rural health facilities.
- Absence of a building maintenance culture.

The gender audit of health training institutions and the research study into students' attitudes and motivations found the following:



A married women's hostel

- Severe overcrowding in some student hostels. Rooms designed for two people were sometimes utilised by as many as eight.
- Concerns about the safety and security of female students was a major issue in most of the health training institutions. Security fences were either missing or broken.
- Inadequate campus lighting made it difficult for female students to walk to locations where they could read / study at night, compromising the learning environment.
- None of the institutions had accommodation for married students or mothers with children. This meant that it was difficult for married students to meet with family members outside teaching hours, or to fulfil their family responsibilities by caring for small children.
- Many institutions had insufficient water supply and sanitation systems, which had a negative impact on both male and female students.
- Few institutions had adequate catering or self-catering facilities on campus. This meant that students had to prepare their meals in their rooms, along corridors or outside. This took up much of their time. Safety was also an issue as cooking in rooms or along corridors presented a fire hazard.

The qualitative research study into midwives' attitudes and motivation found the following:

- A deep-seated perception of sub-standard or inadequate accommodation options for midwives in rural health facilities.
- Inadequate security at rural health facilities at all levels, with midwives stating that they felt scared and vulnerable when on night shift.

Although undertaken separately, the findings of the studies were analysed together. This was followed by a series of

activities undertaken to ensure that the actual construction designs were adapted to reflect the gender-specific needs of female students²:

- The accreditation bodies' requirements concerning the adequacy of classrooms, types of hostels, hostel rooms, toilet facilities, dining areas, common room and relaxation areas were followed precisely. Female students were also consulted on these issues.
- An audit was conducted on the condition of the facilities as they were being utilised by the students.
- The circulation patterns of the students were studied from morning until evening, such as the route they followed from the hostels to the study areas in relation to their safety and security.
- A female architect was appointed who was able to understand the specific needs of female students and match these with the requirements of the accreditation bodies.

Through an iterative process, a final infrastructure improvement plan was developed. This balanced the need to achieve basic accreditation standards (see Box 1) with the need to reflect beneficiaries' practical and strategic gender needs in the works. This meant that some construction works were approved and prioritised even if not a specific accreditation requirement. Works that fell into this category included the construction of facilities for married students and nursing mothers, the provision of clearly defined walkways, the improvement of campus lighting, the construction and repair of security fences, and the construction of accommodation for tutors. Gender considerations influenced the location of buildings, the walkways between them, the lighting around them, and the provision of facilities for live-in matrons. Some construction activities were undertaken primarily to meet



A site visit by a Governor of one of the new facilities

accreditation standards (e.g. construction of staff offices for tutors), but by supplying a secure and comfortable workplace for female tutors, addressed the needs of female tutors, allowing them to focus less on their physical environment (practical gender needs) and more on their professional role and overall career (strategic gender needs).

A list of vital equipment to be supplied by the programme was also drawn up. This covered items such as office tables and chairs, filing cabinets, air conditioning units, refrigerators, and desktop computers.

Midwives' concerns about security at rural health facilities³:

"There is one security man....Once I asked him to escort me home when it was late and he refused probably because he was also afraid."

"I dislike the insecurity because everybody can just pass through the hospital at any time."



A newly completed nursing mother's hostel

Tendering and Construction

Within nine months of the programme starting, the first batch of contractors was ready to commence the first phase of work.

Following the needs assessment work, the W4H facilities planning team commissioned architectural and engineering drawings and Bills of Quantities were derived from these drawings. A pre-qualification exercise for contractors was undertaken by placing procurement advertisements in two national newspapers. International tendering standards were followed. Of the 159 responses received, 59 bidders who were able to demonstrate that they met procurement criteria (relevant construction experience; adequate personnel; and evidence that the company was on a firm financial footing) were selected and invited to tender for the various lots and locations.

In each state, the construction works were supervised by a team of consultants, usually architects or quantity surveyors, whose mandates were to regularly inspect the different stages of construction, give stage by stage approvals, and ensure quality and adherence to agreed budgets. Payment certificates were issued at different points in the construction process, with the final payment withheld until the works had been inspected and contractors had responded to all defects or oversights. No advance payments were made to contractors.

Challenges were met at each stage of the works. These included:

- Fraudulent submission of documentation by prospective bidders. Faked bank letters were discovered in the submissions of one particular contractor, and some bidders connived by submitting the same tax clearance certificates.
- Contractors with inadequate skills and construction ability won bids for pre-qualification and were selected to tender. These were companies that had submitted all the required documentation, including 'evidence' of their construction track record.
- It is probable that cost estimates for some of the works were disclosed to some of the bidders at the tender stage, with data leaked by some of the consultants working for the programme. For instance, one contractor won three out of four lots and submitted tender costs that were exactly five percent less than the estimated cost of the works.
- Poor quality construction was identified by some contractors, particularly those operating in hard to reach areas.

In all cases, immediate steps were taken to address these challenges. All bidders that were found to have submitted fraudulent documentation, and those suspected of gaining unauthorised access to confidential cost estimates were

Box 2 Using construction works to leverage support and resources from government

In Yobe, the School of Health Technology at Nguru was located on a temporary site. Although the school was doing well academically, it was unable to renew its accreditation status because the buildings fell below accreditation standards. Although a new permanent site for the school had been identified, and construction works had started, the work had come to a standstill. The state government was informed that a hundred million Naira had been reserved for construction works at the new site by W4H. Work would start once the government had mobilised its contractors back to the new building site.

The government responded positively. Unfortunately, however, the contractors' work was very poor quality and it is likely that the completed works would have failed to meet the required building standards. W4H again indicated that it could not begin construction unless the works were assessed and a new contractor appointed. Following several high level meetings with government, these changes have been agreed. W4H is now planning to begin its own construction works at the site, which will hopefully assist the school to obtain full accreditation.

In Kano, W4H rehabilitated hostel blocks with capacity to house 200 female students. When the works had been concluded it was discovered that the central sewage system that the hostels were connected to were no longer functioning. W4H engaged the state government on the issue and after a period of lengthy negotiations and promises the government went ahead and awarded contracts for the provision of sewage treatment pits.

disqualified from the tender process. Among the team of consultants hired to supervise the building works, any individual found to be failing to carry out their duties with due diligence were immediately removed and replaced. All payments to contractors were made after a physical visit to the building site by W4H's Facility Planner or his approved representative and formal confirmation that the works had been completed to the required standard. Proactive management of risk coupled with a practical problem-solving approach therefore enabled the programme to address even the most serious of challenges.

Results

By October 2015, 126 separate construction contracts had been issued and 155 separate construction projects concluded. This included 91 contracts that involved new buildings, renovations, water supply and landscape improvements at health training institutions, and 35 that focused on the provision of midwives' accommodation at rural primary health care facilities.

This was a large-scale operation, involving a large number of construction works across five programme states. 27 months into the construction process, Naira 1.355 billion (equivalent to GBP 4.927 million) had been disbursed by W4H. Eighteen new works are planned in the remainder of 2015, and further works scheduled for 2016.

155 separate construction works were carried out in five states by W4H contractors over a two year period

The fact that neither consultants nor contractors had previously been engaged by W4H, combined with the fact that multiple construction works were ongoing at the same time across five states, meant that there was potential for mistakes to be made. Yet an independent audit of the construction undertaken in May 2015, which involved a visual inspection of 25% of the building works across the five programme states, found that 57% of the works adhered completely to specifications and complied with Bills of Quantities, and therefore represented good value for money. The remaining 43% of works had not, at the time of the audit, fully executed their contracts. Most of these contractors were in the process of correcting defects or completing unfinished work, overseen by the W4H buildings consultants, before being transferred a completion payment based on final accounts statements and calculations. By October 2015, all contractors in this category had completed their works to the required standard and had received a final payment. Interestingly, the audit identified a number of contractors who had undertaken improvements to buildings and landscaping that extended beyond their original brief.

Despite the challenges faced by the programme, the checks and balances put in place by W4H meant that good value for money was achieved by the programme's construction component.

Achieving full accreditation at health training institutions is dependent on many factors, including staffing levels and capabilities, availability of teaching resources, and facilities provided. By July 2015, the construction works had made a significant difference to the accreditation status of the health training institutions. Six had achieved full accreditation (compared to only one in February 2013); 13 had achieved provisional accreditation (compared to ten in

Box 3 Students' Perception of Improved Facilities

"The management has provided us with rooms to sleep in with security, water and electricity and whenever there is a problem they send the necessary persons to fix it." (married student, School of Nursing, Birnin Kudu, Jigawa)

"The school has provided additional female hostel and practical rooms and there was an improvement regarding electricity supply." (unmarried student, School of Midwifery, Gusau, Yobe)

Positive changes noticed included improvement in water supply, and regular electricity. There is adequate classroom space for teaching and learning processes... (single student, School of Health Technology, Tsafe, Zamfara)

"Accommodation is well improved as we have two rooms with separate toilets and kitchen. The school also provides cleaning items." (married student, School of Midwifery, Dambatta, Kano)

"How I wish this hostel was finished before we finished our final year." (female student, School of Midwifery, Dambatta, Kano)

February 2013) and only one institution was in the position of having been denied or had its accreditation withdrawn (compared to five in February 2013).

By mid-2015, the School of Midwifery in Dambatta, Kano State, and four other training institutions, were able to offer hostel accommodation for married women students. At the School of Midwifery, Kano, three female student hostels were completely renovated with new kitchens supplied, and a student nursing mother's hostel had been constructed. In Jigawa, seven rural health facilities were able to provide secure accommodation for midwives. The School of Midwifery, at Birnin Kudu in Jigawa, was able to provide accommodation for female tutors and spacious, secure, hostel accommodation for 120 female students. These are just a few of the many women-friendly, gender-focused infrastructure improvements supported by W4H.

The programme used the planned infrastructure improvements and equipment provision to bargain with state



Construction sites were spread across five programme states

governments in order to leverage additional changes and improvements at the health training institutions. In Katsina, for instance, one training institution was reticent to absorb more than a small number of Foundation Year Programme students, compromising programme objectives. The planned construction works were put on hold while discussions and negotiations took place with the senior management of the training institution. Eventually, the institution conceded and increased the number of places available to Foundation Year students. The building work was allowed to continue (see Box 2 for other examples).

A recent survey of third year student perceptions⁴ showed that students already appreciated the changes in the institutions as illustrated in Box 3.

As these facilities receive greater usage, the programme will further assess and document how the renovations and new buildings have been received by the management of the institutions, the students, the tutors, the health workers, and, importantly, their families. It will also document the extent to which the changes have enabled female students, tutors, and midwives to focus more readily on their strategic gender needs (e.g. learning, employment, career development) in the knowledge that their practical needs have been met.



A classroom is made ready for the new students

Conclusions

W4H successfully managed a large-scale programme of infrastructure improvement in a high risk, implementation environment.

The programme experienced a multitude of challenges, including fraudulent business practices during the construction tendering process, and poor quality workmanship, albeit by a small number of contractors.

There were also considerable logistical challenges associated with managing a large portfolio of construction works across multiple sites. Careful planning and risk management meant that the programme was able to identify and respond swiftly to these challenges as they arose. The supervisory system for the construction works, provided by W4H's Facilities Planner who, in turn, managed a team of buildings consultants, allowed the programme to check the quality of workmanship on-site and demand repairs or remedial work where necessary. In the latter case, sub-standard construction work occurred primarily in remote rural locations where accommodation for midwives was being constructed at primary health care facilities. In all cases, remedial works were undertaken, and the quality of work assessed before contractors were paid. Managers

and staff of the health training institutions also reported any problems to W4H, thereby acting as a further check and balance for the construction process. The successful completion of 155 building projects by October 2015, with agreed construction standards reached in all but a small number of cases, means that W4H's infrastructure improvement work represents excellent value for money.

W4H also demonstrated that it is possible to integrate a gender perspective into a discipline that is rarely informed by social science perspectives. In the northern Nigerian context, the aspirations, life experiences and opportunities of women are heavily shaped by religious and cultural factors which reinforce women's reproductive role, place significant emphasis on the protection of modesty, and restrict women's mobility. The gender mainstreaming process was enabled by the strong gender team within W4H. The fact that the Programme Director has a long track record of working on women's empowerment issues in northern Nigeria gave visibility and voice to gender concerns within the programme. The integration process was also enabled by a responsive and flexible facilities planning team who demonstrated a willingness and readiness to translate gender concerns into building designs, and to follow these requirements through to building completion.



W4H is working hard to ensure that the new and rehabilitated buildings and facilities are maintained on an ongoing basis. This requires the establishment of a maintenance system coupled with attitudinal change in a context where a maintenance culture is largely absent.

Written by Cathy Green, W4H consultant, and Abdullahi Sada, W4H Facility Planner.

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