REPUBLIC OF NAMIBIA

MINISTRY OF HEALTH AND SOCIAL SERVICES
NATIONAL HEALTH TRAINING CENTRE (NHTC)

# Post-Qualification Monitoring and Evaluation of Pharmacist Assistants Trained at the National Health Training Centre in Namibia

**December 2015**

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## About the NHTC

The NHTC is a Windhoek-based health training institution, one of seven training centers that form the National Health Training Network, a division under the MoHSS' Directorate of Policy, Planning and Human Resources Development. Training programs currently offered by the NHTC include those for enrolled nurses and midwives, radiography assistants, environmental health assistants, and pharmacist assistants (PA). The NHTC's overall goal, derived from the MoHSS' goal, is "to enhance the efficiency, effectiveness, and quality of health and social services through education, training, consultancy services, and networking." The NHTC is Namibia's only institution that trains PAs.

## About SIAPS

The goal of the SIAPS program is to assure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes. Toward this end, the SIAPS result areas include improving governance, building capacity for pharmaceutical management and services, addressing information needed for decision-making in the pharmaceutical sector, strengthening financing strategies and mechanisms to improve access to medicines, and increasing quality pharmaceutical services.

## Recommended Citation

This report may be reproduced if credit is given to the NHTC and SIAPS. Please use the following citation. Kutenda O, Leboea J, Kambyambya K, Mavu D, Kagoya H. R, Mazibuko G, Mbaziira N, et al. (2015). *Post-qualification Monitoring and Evaluation of Pharmacist Assistants Trained at the National Health Training Centre in Namibia*. Submitted to the US Agency for International Development by the MoHSS- NHTC with support from the SIAPS program. Arlington, VA: Management Sciences for Health.

## Key Words

MoHSS, NHTC, pharmacist assistants, HIV and AIDS, antiretroviral therapy, tracer study, Namibia

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AIDS | acquired immunodeficiency syndrome |
| ART | antiretroviral therapy |
| ARV | antiretroviral |
| CME | continuing medical education |
| Div: PhSs | Division: Pharmaceutical Services (of the MoHSS) |
| EDT | electronic dispensing tool |
| HPCNA | Health Professions Councils of Namibia |
| IT | information technology |
| MoHSS | Ministry of Health and Social Services |
| MSH | Management Sciences for Health |
| N$ | Namibian dollar |
| NHTC | National Health Training Centre |
| NQA | Namibia Qualifications Authority |
| PA | pharmacist assistant |
| PHC | primary health care |
| PSN | Pharmaceutical Society of Namibia |
| QMS | quality management system |
| RMU | rational medicine use |
| SHOPS | Strengthening Health Outcomes through the Private Sector |
| SIAPS | Systems for Improved Access to Pharmaceuticals and Services |
| SoP | School of Pharmacy |
| SPS | Strengthening Pharmaceutical Systems |
| SPSS | Statistical Package for the Social Sciences |
| SSV | supervisory support visit |
| STI | sexually transmitted infection |
| TA | technical assistance |
| TB | tuberculosis |
| TC | therapeutics committee |
| UNAM | University of Namibia |
| USAID | US Agency for International Development |

# EXECUTIVE SUMMARY

## Background

Namibia has a decentralized public health system with 14 administrative regions. It is challenged by a dual burden of HIV and AIDS and tuberculosis (TB) as well as by the persistent shortage of pharmaceutical personnel. Well-trained pharmacist assistants (PA) are central to ensuring that the correct medicines are available in sufficient quantities as well as for counseling patients on the proper use of medicines and monitoring patients' adherence to antiretroviral therapy (ART) and other treatments. The National Health Training Centre (NHTC) has conducted this first formal workplace assessment of PAs who have graduated from the institution since 2007 in response to support from the US Agency for International Development (USAID) for a series of systematic interventions to strengthen the capacity and quality of PA training. Broadly, the USAID-funded SIAPS program supported the NHTC to conduct a tracer study to inform strategies for improving the PA training program and its reaccreditation by the Namibia Qualifications Authority (NQA). Specifically, the study assessed: the proportion of NHTC PA graduates who are working in a PA role; the PAs' satisfaction with the training they received at the NHTC; employers'/supervisors' satisfaction with the PAs' services; and strengths and weaknesses of the PA training program. Stakeholders' recommendations for improving the PA training program were also obtained.

## Methodology

Three questionnaires were used to collect qualitative and quantitative data from 91 respondents, including 57 PAs, 26 employers and supervisors, and eight other stakeholders. Fifty-five percent (55%) of the respondents were female. Data were collected nationally from September to December 2014, from both rural and urban sites, and public and private facilities where the target PAs were working. Quantitative data were entered into Epidata v3.1 software and exported to the Statistical Package for the Social Sciences (SPSS) v.20 for analysis. Qualitative data were manually coded and thematically analyzed.

## Findings

Almost all (over 90%) of employers and supervisors were satisfied with the PAs' performance at work. Ninety-six percent (96%) of the PAs are working in the delivery of pharmaceutical services and 91% had ever worked in ART clinics. Currently, 58% of PAs serve in ART clinics, thereby contributing to the scale-up and provision of essential ART services in Namibia. The majority (75%) of the PAs reported overall satisfaction with their PA training at the NHTC. PAs' satisfaction was associated with age *(p=0.006)*, length in PA role *(p=0.039)*, compiling medicines-related reports *(p=0.001)*, scope of the PA curriculum *(p=0.002)*, usefulness of additional training *(p=0.002)*, and personal development *(p=0.007)*. Supervisors' satisfaction with the PAs' services was associated with PAs doing stock and inventory management *(p=0.046)*, promoting rational use of medicines *(p=0.003)*, ensuring safety within the pharmacy *(p=0.000)*, accomplishing assigned work in a timely manner *(p=0.000)*, having a positive attitude towards work *(p=0.003)*, ability to deal with unfamiliar situations at work *(p=0.000)*, working well in teams *(p=0.026)* and frequency of feedback *(p=0.009)*. Strengths of the PA program included satisfactory teaching for efficient work of

the PAs, facilitation of learning at the NHTC, and duration of the PA course. Key areas of improvement identified included curriculum review to address selected gaps in knowledge and skills, improving the learning environment at the NHTC, and resource materials and opportunities for PAs' personal development, including management skills. Stakeholders who participated in the study did not report any known cases of PAs being de-registered for disciplinary reasons. Many PAs (54.4%) reportedly received additional training, especially in HIV and AIDS service delivery aspects. A little over twelve percent (12.3%) of the surveyed PAs were already advancing their careers, while 82.5% of the PAs plan to study in the next one to three years.

## Conclusions and Recommendations

The PAs trained at the NHTC are satisfactorily accomplishing the delivery of pharmaceutical services. The majority are serving in the public sector and in ART clinics. The MoHSS should devise strategies for retaining the large number of PAs working in the public sector and in ART sites. The MoHSS should enhance the NHTC's capacity to provide continuing medical education (CME) for the PAs to increase their skills and confidence in ART service delivery. The NHTC should review the PA curriculum in light of the topics that the PAs and supervisors identified as skill gaps for efficient service delivery. In collaboration with the University of Namibia's School of Pharmacy, the NHTC should create awareness on opportunities for PAs' career advancement as this could also motivate PAs in their work.

# BACKGROUND

## About Namibia and the Health System

Namibia is situated in the southwestern part of Africa. It has a surface area of 824,116 square kilometers (km). As of 2011, the country's population was estimated to be 2,113,077, and it had a population growth rate estimated at 1.4% per annum (Namibia Population and Housing Census 2011). Having the second lowest population density in the world (2.6 inhabitants per square kilometer), distances pose serious challenges to the country's planning, organization, and logistics management for the response to HIV and AIDS, resulting in inadequate and unequal coverage of services.

Namibia has a decentralized public health system with 14 administrative regions. Its Ministry of Health and Social Services (MoHSS) manages approximately 341 public health facilities (one national referral hospital, three intermediate referral hospitals, 30 district hospitals, 46 health centers, and 261 clinics). The map in Annex 6 shows the spatial distribution of health facilities in Namibia. The majority of health facilities are located in the northern regions, where approximately 40% to 50% of the population lives (see Annex 5).

Namibia is challenged by a dual burden of HIV and AIDS and tuberculosis (TB). There was an HIV prevalence of 13.1% among adults (15-49 years) and 18.2% among pregnant women in 2012 (MoHSS, Directorate of Special Programmes 2014). The TB case notification rate is 529 per 100,000 population (Republic of Namibia, MoHSS, National Tuberculosis and Leprosy Programme 2013). Namibia has attained over 80% coverage of antiretroviral therapy (ART) services for its HIV-positive population through the rapid scale up of programs (MoHSS, Directorate of Special Programmes 2014). ART treatment requires pharmaceutical services and, therefore, pharmaceutical personnel to render such services. Well-trained pharmacist assistants (PA) are central to ensuring that the correct medicines are available in sufficient quantities as well as for counseling patients on the proper use of medication, monitoring adherence, and tracking treatment defaulters.

Namibia faces a persistent shortage of pharmaceutical sector personnel, including pharmacists, PAs/technicians, and lecturers, and has a significant dependence on pharmaceutical personnel from other countries (Phulu 2013; Sumbi 2013). The annual pharmaceutical supervisory support visits (SSV) showed that 67% of pharmacists' and 93% of PAs' posts were filled (Sumbi 2014). Twenty-four percent (24%) of the pharmacy personnel in the 35 hospitals visited during SSVs were non-Namibian. There are more PAs than pharmacists, creating the likelihood of PAs taking on additional pharmaceutical responsibility in facilities where there are no pharmacists. The presidential commission report (MoHSS 2013) stated that: "There are very few pharmacists employed in the MoHSS while some district hospitals have no pharmacists' posts at all, and that only PAs are available at district hospitals." A report on a Namibia private sector assessment (SHOPS 2010) indicates a disparity among PAs in the public and private sectors, with 47% of the 137 PAs registered in 2006/07 being employed in the public sector. This shows the dire need for PAs in Namibia, especially in rural facilities because most of the professionals tend to be employed in urban areas (SHOPS 2010). The inadequate pharmaceutical personnel in the country necessitate the training of PAs among the pharmacy cadres for pharmaceutical service provision.

## About the MoHSS National Health Training Centre

The National Health Training Centre (NHTC) of the MoHSS is Namibia's only public institution that trains PAs. The NHTC falls under the MoHSS' Directorate of Policy, Planning and Human Resources Development. The PA training program is only offered at the NHTC's Windhoek campus. With support from the US Agency for International Development (USAID), 160 PAs graduated from the NHTC between 2007 and 2015 (figure 1).

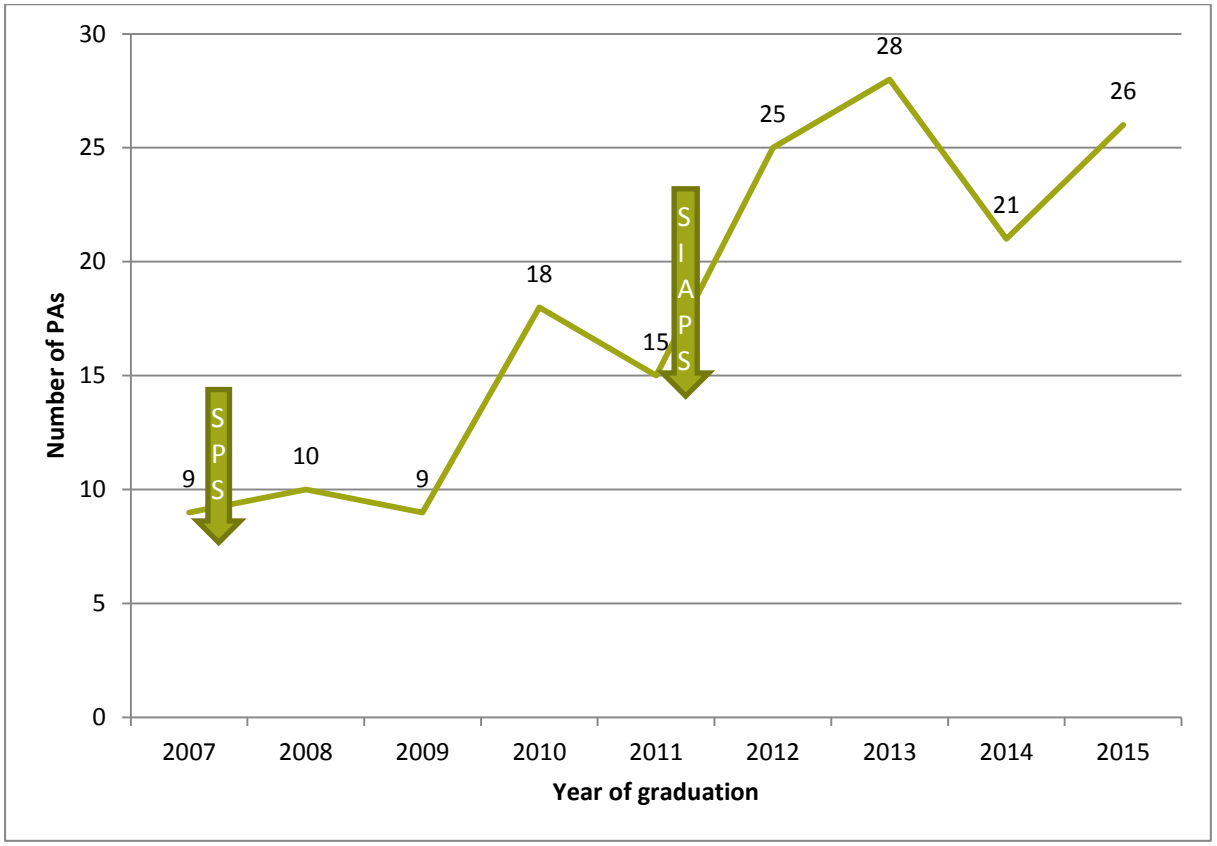


**Figure 1. Number of PAs graduating from the NHTC, by year of graduation**
*Source:* MoHSS, NHTC graduation lists (2007 to 2015).

The number of PAs graduating from the NHTC annually quadrupled, from six graduates in 2006 to an average of 25 over the last four years.

In 2007, the USAID-funded Strengthening Pharmaceutical Systems (SPS) project supported the NHTC. Technical assistance continued in 2011 under the USAID-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program, which continues to this day. The PA course was recommended by SPS/SIAPS as a feasible option for improving human resources for the delivery of pharmaceutical services overall, and ART services in particular, in Namibia. Both projects are implemented by Management Sciences for Health (MSH). Since 2007, SIAPS (and MSH) support to NHTC has included, among other activities:

- Improvement of the PA curriculum in 2009.

- Refurbishment of the PA skills laboratory and expansion of classroom size to accommodate a larger student intake at the NHTC.
- Recruitment, hiring, and seconding of pharmacy lecturers to the NHTC.
- Development of teaching materials.
- Installing the electronic dispensing tool (EDT) for ART management.
- Information technology (IT) (software and hardware) equipment and technical assistance (TA) to improve learning by: virtualizing the classroom environment and helping lecturers to deliver lectures; electronically managing student assignments, assessments, and course work; and conducting laboratory practical sessions and skills simulations.
- TA in basic pharmacy practice research and experiential learning through rotations in a community pharmacy, hospital pharmacy, pharmaceutical quality control laboratory, private sector pharmaceutical distributors, and the public sector central medical store.
- Support for reaccreditation of the PA course by the Namibia Qualifications Authority (NQA).
- TA for developing a quality management system (QMS), and a competency framework and scopes of practice for pharmacy technicians and PAs.
- Training NHTC tutors as facilitators, assessors, and moderators to enhance their capacity to design and deliver quality health care education.
- TA for the development of a database for students' records.

The TA was aimed at improving the teaching and training of PAs to ensure that those who graduate are competent to provide much-needed pharmaceutical services in Namibia. It is against this backdrop that the NHTC, with TA from SIAPS, conducted this assessment to monitor and evaluate the NHTC's PA graduates.

## Overview of the Assessment

Over the years, the NHTC has successfully trained PAs and added to the pool of human resources available for pharmaceutical service delivery in Namibia. Qualified and competent human resources are important for the delivery of pharmaceutical services. One of the requirements of the NQA is a review of the training the PAs received at the NHTC. It was therefore deemed necessary to conduct an assessment to trace and assess workplace performance of its graduates. Also, assessment of graduates is a prerequisite for the curriculum review process, which should happen every five years, according to international standards. The assessment aimed to determine:

- Where are the NHTC's PA graduates currently working?

- What services are PAs offering?
- The strengths and weaknesses of the PA training program:
    - What aspects of the training program are most/least useful?
    - What aspects of knowledge and skills are required in the workplace and that were missing from the training (for graduates from 2007 to 2013)?
- Student satisfaction with the PA training received at the NHTC.
- Employer/supervisor satisfaction with the services offered by the PAs.
- Recommendations for future training of PAs.

## Assessment Objectives

### *General Objectives*

- Review the quality of PA graduates and determine areas for improvement.
- Fulfill one of the requirements for NQA reaccreditation.
- Launch the curriculum review process.

### *Specific Objectives*

- To determine the proportion of NHTC PA graduates among the cohort that graduated from 2007 to 2013 who are working in a PA role.
- To determine the PAs' level of satisfaction with the training they received at the NHTC.
- To determine employers'/supervisors' level of satisfaction with the services provided by PAs.
- To determine the strengths and weaknesses of the PA training program.
- To obtain stakeholders' recommendations for improving the PA training program.

# METHODOLOGY

## Assessment Design

The assessment targeted the PAs who graduated from the NHTC program between 2007 and 2013. A questionnaire-based descriptive approach was used for the assessment. Three questionnaires were used to collect qualitative and quantitative data (Annexes 2, 3, and 4). Data were collected from September to December 2014.

The assessment questionnaires captured a variety of information from the various respondents, which is presented in table 1.

**Table 1. Assessment Variables by Respondent Category**

| Respondent category | Variables | | | | | |
|---|---|---|---|---|---|---|
| | Demographics | Work status | PA's knowledge | PA program strengths & weaknesses | Satisfaction | Recommen-dations for MoHSS/NHTC |
| 1. PAs | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 2. Employers/supervisors (MoHSS-public, private) | ✓ | | ✓ | ✓ | ✓ | ✓ |
| 3. MoHSS (Div: PhSs) | ✓ | | ✓ | ✓ | ✓ | ✓ |
| 4. Other stakeholders (HPCNA, Pharmacy Council, Pharmaceutical Society of Namibia [PSN], University of Namibia-School of Pharmacy [UNAM-SoP]) | ✓ | | ✓ | ✓ | ✓ | ✓ |

## Assessment Sites

The study was a national-level assessment, covering all types of facilities (public and private) where PAs work, in both rural and urban areas.

## Assessment Populations

i) All of the 114 PAs who graduated from the NHTC between 2007 and 2013 (table 2).
ii) Current employers/supervisors of the PAs.
iii) MoHSS (Division: Pharmaceutical Services [Div: PhSs])
iv) Other stakeholders: Health Professions Councils of Namibia (HPCNA), Pharmacy Council, Pharmaceutical Society of Namibia (PSN), University of Namibia's School of Pharmacy (UNAM-SoP).

**Table 2. PA Graduates of the NHTC, 2007-2013**

| Year of graduation | Total number of PAs graduated |
|---|---|
| 2007 | 9 |
| 2008 | 10 |
| 2009 | 9 |
| 2010 | 18 |
| 2011 | 15 |
| 2012 | 25 |
| 2013 | 28 |
| **TOTAL** | **114** |

## Data Collection and Management

- The assessment team consisted of eight technical personnel from the MoHSS (Div: PhSs), the NHTC, and the SIAPS project. The team provided oversight for conceptualization, design, implementation, and reporting, ensuring the quality of all processes for a reliable output.

- The USAID-funded SIAPS project provided technical assistance to the NHTC for developing and refining the assessment concept, the data collection tools, quality assurance, management of the data, and report compilation.

- The respondents' identities were kept anonymous during data analysis in line with the principle of confidentiality.

- All respondents gave informed consent before completing the questionnaire.

## Ethical Considerations

This assessment was a self-appraisal on the part of the NHTC for the purposes of program improvement, i.e., as a standard initial procedure in preparation for the upcoming five-year cycle of the curriculum review process. It was also conducted as a mandatory NQA quality assurance requirement with respect to the NHTC's impending application for reaccreditation. The assessment process and tools were approved by the NHTC's management team and the assessment team itself. As noted above, respondents gave informed consent. Their identities and affiliated institutions were not captured in aggregated data, however, such information was collected for the purposes of the NHTC alumni and stakeholder databases.

## Quality Assurance

The data collection tools were reviewed by the assessment team to ensure that they captured data that was of the highest possible quality. NHTC team members checked all completed questionnaires for completeness of information.

## Data Stewardship

All data collected for this assessment are kept by the NHTC.

## Data Analysis

Two NHTC lecturers entered the data into Epidata v3.1 software. Entry errors were controlled by setting checks in Epidata. The SIAPS technical team carried out the secondary checks on data captured in the database. Quantitative data were exported to the Statistical Package for the Social Sciences (SPSS) v.20 for analysis. Qualitative data were manually coded and thematically analyzed.

## Dissemination of Results and Knowledge Transfer

The findings and recommendations presented in this report were shared with pharmacists and other stakeholders during the 2015 annual national pharmacists' forum held in July 2015. The NHTC will disseminate the findings and recommendations to senior management of the MoHSS, NHTC management, the NQA, HPCNA, the Pharmacy Council, PSN, USAID, SIAPS, UNAM-SoP, and other stakeholders as the NHTC may deem necessary.

## FINDINGS

### Response Rates and Social Demographics of Respondents

#### *Response by Region*

Eleven (78.6%) of 14 regions were covered by this assessment (figure 2). A total of 57 PAs, 26 employers/supervisors, and eight (8) stakeholders responded to the assessment (figures 2 and 3).

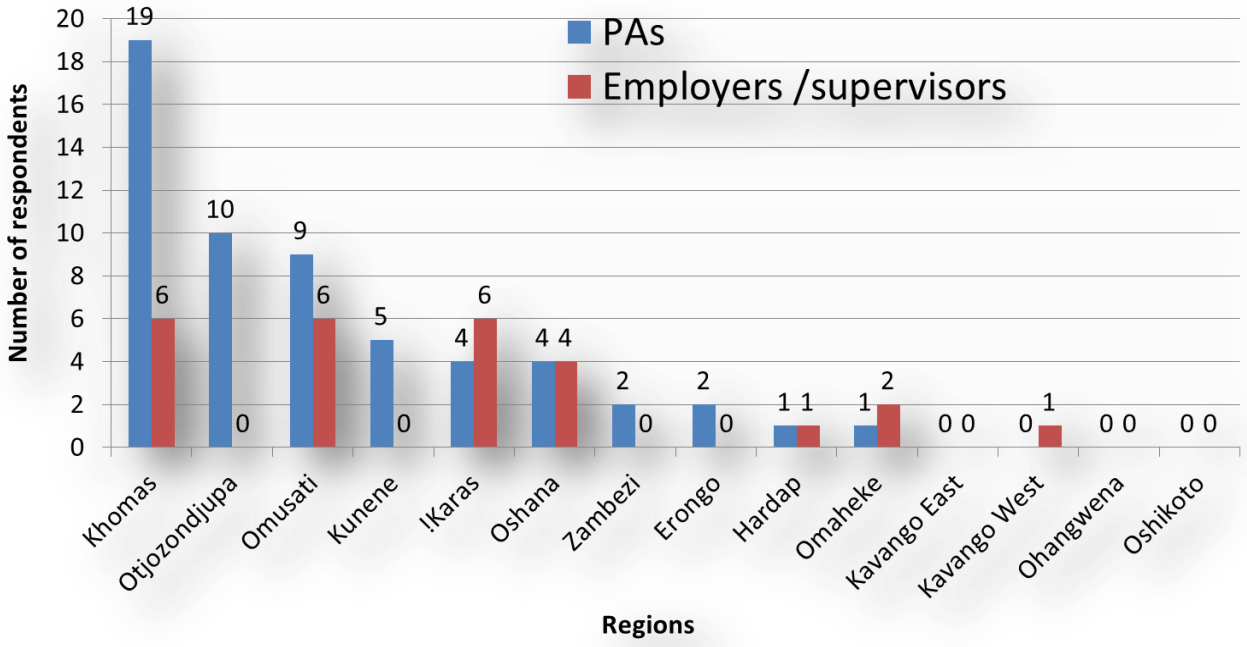


**Figure 2. Number of respondents by region**

#### *Respondents by Category and Gender*

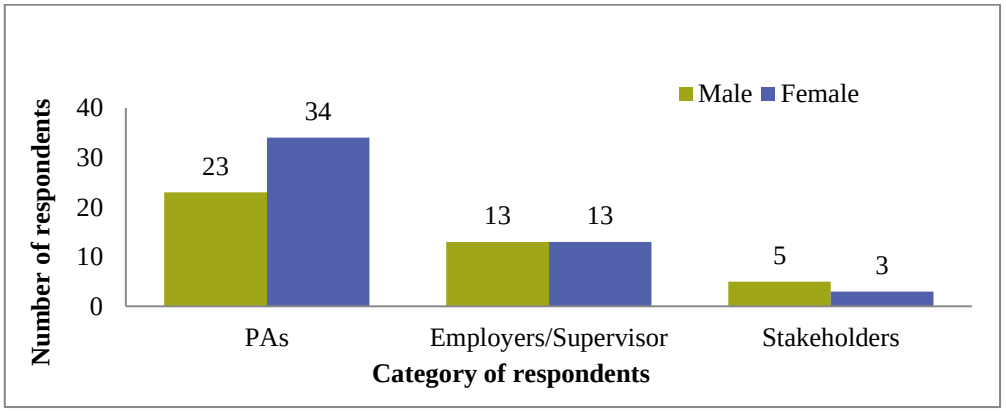


**Figure 3. Respondents by category and gender**

The eight stakeholders included respondents from the MoHSS, UNAM-SoP, and the Beulah pharmacy (representing the PSN).

### *PA Respondents by Workplace Type*

The majority (87.5%) of the PA respondents were working in public sector health facilities at the time of the study (figure 4).

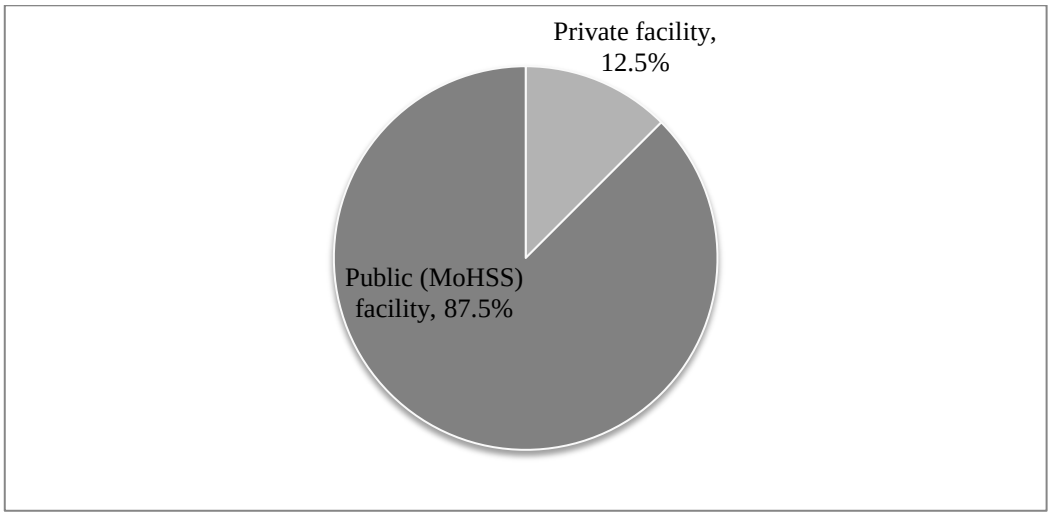


**Figure 4. PA respondents by workplace type**

### *PA Respondents by Year of Graduation*

Fifty-seven (50%) of the NTHC's PA graduates completed a questionnaire. The largest proportion graduated in 2009 (67%) (table 3).

**Table 3. PA Respondents by Year of Graduation**

| (Year of graduation) | Total NHTC graduates | Actual number of respondents | Percentage of respondents | Proportion of graduates | *p-value |
|---|---|---|---|---|---|
| 2007 | 9 | 3 | 5% | 33% | |
| 2008 | 10 | 2 | 4% | 20% | |
| 2009 | 9 | 6 | 11% | 67% | |
| 2010 | 18 | 4 | 7% | 22% | |
| 2011 | 15 | 9 | 16% | 60% | 0.23 |
| 2012 | 25 | 7 | 12% | 28% | |
| 2013 | 28 | 14 | 25% | 50% | |
| *Other/missing | N/A | 12 | 21% | N/A | |
| Total | 114 | 57 | 100% | N/A | |

*Other/missing included PA respondents who graduated in years other than those specified or did not indicate their year of graduation on the questionaire.

### *Respondents' Social Demographics - PAs*

Table 4 shows that more female (59.6%) than male PAs participated in the assessment. Almost all (98.2%) of the PAs who responded: had full-time employment; were within the age range of 21 to 30 years old (63.2%); ever worked in an ART clinic (91.2%); were currently working in an ART clinic (57.9%); participate in ART outreach (78.9%); and serve an average of 60 ART patients per day (min= 0, max >100 patients). The majority (52.6%) had been in their position for more than two years.

**Table 4. Respondents' Social Demographics – PAs**

| Characteristic | | Frequency | *Percent (%) |
|---|---|---|---|
| Gender | Male | 23 | 40.4 |
| | Female | 34 | 59.6 |
| Age (years) | 21-30 | 36 | 67.9 |
| | 31-40 | 13 | 24.5 |
| | >40 years | 4 | 7.5 |
| Current work status | Full-time wage employment | 56 | 98.2 |
| | Part-time wage employment | 1 | 1.8 |
| | Ever worked in ART clinic (Yes) | 52 | 91.2 |
| | Currently working in ART clinic (Yes) | 33 | 57.9 |
| | Participate in ART outreach (Yes) | 45 | 78.9 |
| Salary per month | N$ 3000 – 5000 | 1 | 1.8 |
| | N$ 7001 – 9000 | 19 | 34.5 |
| | N$ 9001 – 11000 | 21 | 38.2 |
| | ➢ N$ 11000 | 14 | 25.5 |
| Duration in current position | < 6 months | 5 | 8.8 |
| | 6 - 12 months | 2 | 3.5 |
| | 1 - 2 years | 20 | 35.1 |
| | > 2 years | 30 | 52.6 |
| Average # of patients attended to daily = 60 (Min= 0, max >100 patients) | | | |

**Percent calculated based on number that responded to that question in the questionnaire*

### Proportion of NHTC PA Graduates Who Are Working in a PA Role

Almost all (96%) of the PAs reported working in a PA-related role, the job for which they were trained (figure 5).

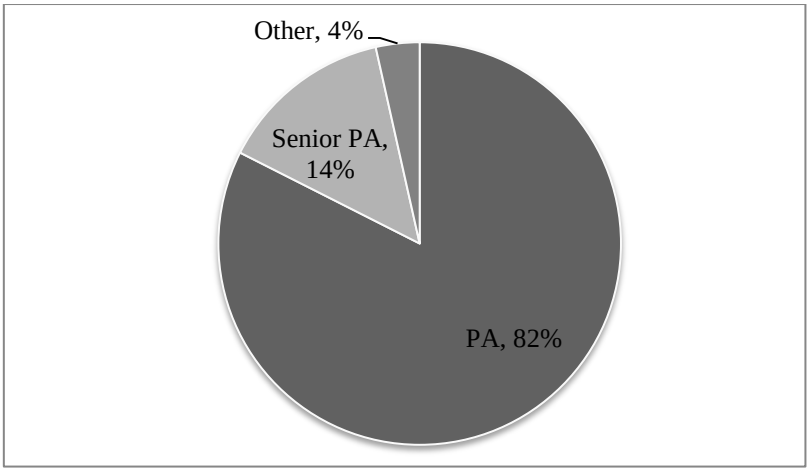


**Figure 5. Proportion of NHTC PA graduates who are working in a PA role**

Other included one PA working as a human resource manager, one working in the education sector, and one working with a municipal council (local authority council).

## PA Level of Satisfaction with the Training They Received at the NHTC

### *Satisfaction by Ability to Accomplish Key Functions*

Findings presented in this section are based on feedback from the PAs. The PA respondents were found to be doing comfortably well in the following areas: dispensing of medicines, stock and inventory management, pharmaceutical calculations, and promoting rational medicine use (RMU) (table 5). The PAs reported limited confidence or engagement in: compiling monthly pharmaceutical reports, participating in therapeutics committee (TC) meetings, and monitoring (reporting) side effects of medicines. The "No" responses (e.g., ensuring safety within the pharmacy) on pharmacy core duties could be attributed to PA graduates who have moved to non-pharmaceutical occupations.

**Table 5. Level of PA Satisfaction by Ease of Ability to Accomplish Key Functions**

| Level of satisfaction, by ability to accomplish different functions, based on training received | Yes, to a great extent | Yes, but to a small extent | No | N/A | Missing |
|---|---|---|---|---|---|
| Dispensing of medicines | 96.5 | 1.8 | 0 | 0 | 1.8 |
| Stock and inventory management | 82.5 | 17.5 | 0 | 0 | 0 |
| Conducting pharmaceutical calculations | 82.5 | 10.5 | 1.8 | 0 | 5.3 |
| Promoting RMU | 77.2 | 17.5 | 0 | 1.8 | 3.5 |
| Ensuring safety within the pharmacy | 77.2 | 17.5 | 1.8 | 3.5 | 0 |
| Counseling of HIV patients | 64.9 | 29.8 | 1.8 | 1.8 | 1.8 |
| Using computer software | 57.9 | 24.6 | 10.5 | 5.3 | 1.8 |
| Health promotion as part of primary health care (PHC) | 57.9 | 29.8 | 7 | 5.3 | 0 |
| Compiling pharmaceutical reports | 49.1 | 26.3 | 15.8 | 7 | 1.8 |
| Participating in TC meetings | 33.3 | 47.4 | 8.8 | 8.8 | 1.8 |
| Reporting on side effects of medicines | 26.3 | 56.1 | 10.5 | 1.8 | 5.3 |

### *Satisfaction with PA Teaching - PA Feedback*

The majority of the PAs were satisfied with: the duration of the NHTC's PA course (77.2%); facilitation for learning (79%); and the scope of curriculum content covered (75.4%). They were least satisfied with opportunities for personal development (57.9%) (table 6).

**Table 6: Satisfaction with PA Teaching - PA Feedback**

| Level of satisfaction with PA teaching | Very good (%) | Good (%) | Fair (%) | Poor (%) | Missing (%) |
|---|---|---|---|---|---|
| Duration of the PA course | 35.1 | 42.1 | 17.5 | 1.8 | 3.6 |
| Facilitation for learning | 24.6 | 54.4 | 10.5 | 8.8 | 1.8 |
| Scope of curriculum content coverage | 22.8 | 52.6 | 15.8 | 7 | 1.8 |
| Learning environment at NHTC | 12.3 | 45.6 | 24.6 | 14 | 3.6 |
| Resource materials | 8.8 | 35.1 | 38.6 | 15.8 | 1.8 |
| Opportunity for personal development | 8.8 | 49.1 | 24.6 | 15.8 | 1.8 |

### *PAs' Overall Satisfaction and Associated Factors*

The majority (75%) of the PAs reported overall satisfaction with their PA training at the NHTC (table 10). Six factors (age, length in PA role, compiling medicines-related reports, scope of the PA curriculum, usefulness of additional training, and personal development) were associated with satisfaction *($p<0.05$)* (table 7).

## Employers' and Supervisors' Levels of Satisfaction with PA Services

### *Satisfaction: Ability to Accomplish Functions, Based on Training Received*

Almost all (>90%) of employers/supervisors were happy with the PAs' dispensing of medicines, conducting pharmaceutical calculations, and managing medicines inventory. More than 80% of them were happy with the PAs' counseling of HIV patients and promoting rational medicine use (RMU), while over 70% were satisfied with the PAs' participation in TC meetings and compiling pharmaceutical reports (figure 6 and table 8).

During data collection, NHTC PA lecturers met with employers. One private pharmacy owner expressed concern during an informal verbal interview that PA graduates she employed in her pharmacy were less than satisfactory. She reported an incident where she had to dismiss a PA. The experiences of PA students who had just completed private practice rotations also showed that the preparation of students who may eventually find themselves employed by private practitioners may be inadequate. Private practice requires time to master.

**Table 7. PAs' Overall Satisfaction with Their Training at NHTC, and Factors Associated with Their Satisfaction**

| Characteristic | | Percentage of PAs who reported satisfaction | $X^2$ | *p-value |
|---|---|---|---|---|
| Gender | Male<br>Female | 83<br>69 | 1.273 | 0.259 |
| Age (years) | 21-30<br>31-40<br>>40 years | 78<br>100<br>25 | 10.295 | 0.006* |
| Ever worked in ART clinic | Yes<br>No | 73<br>100 | 1.444 | 0.229 |
| Currently working in ART clinic | Yes<br>No | 69<br>83 | 1.273 | 0.259 |
| Current job title | PA<br>Senior PA<br>Other | 76<br>75<br>50 | 0.698 | 0.705 |
| Length in PA role | < 2 years<br>2.1-4.0 years<br>4.1-6.0 years<br>> 6 years | 21<br>35<br>6<br>13 | 27.244 | 0.039* |
| Salary per month | N$ 3000 – 5000<br>N$ 7001 – 9000<br>N$ 9001 – 11000<br>>N$ 11000 | 100<br>75<br>75<br>71 | 0.762 | 0.943 |
| Compile medicine- related reports | Yes, to a great extent<br>Yes, to a small extent<br>No | 80<br>93<br>25 | 17.714 | 0.001* |
| Scope of PA curriculum | Very good<br>Good<br>Fair<br>Poor | 85<br>85<br>63<br>0 | 14.802 | 0.002* |
| Received additional training | Yes<br>No | 86<br>62 | 7.196 | 0.066 |
| Training usefulness | Yes<br>No | 86<br>100 | 14.735 | 0.002* |
| Opportunity for personal development | Very good<br>Good<br>Fair<br>Poor | 80<br>92<br>71<br>33 | 12.051 | 0.007* |

*****P-value is significant (p<0.05); P-value determined by Pearson's chi-squared test, at the 95% confidence interval.

Age, length in PA role, compiling medicines-related reports, scope of the PA curriculum, usefulness of additional training, and personal development were associated with satisfaction *(p<0.05)*.

Most supervisors (over 90%) were satisfied with PAs' conducting pharmaceutical calculations, using computer software, inventory management and dispensing medicines (figure 6 and table 8: *the sum of both "yes to a great extent" and "yes to a small extent"*).

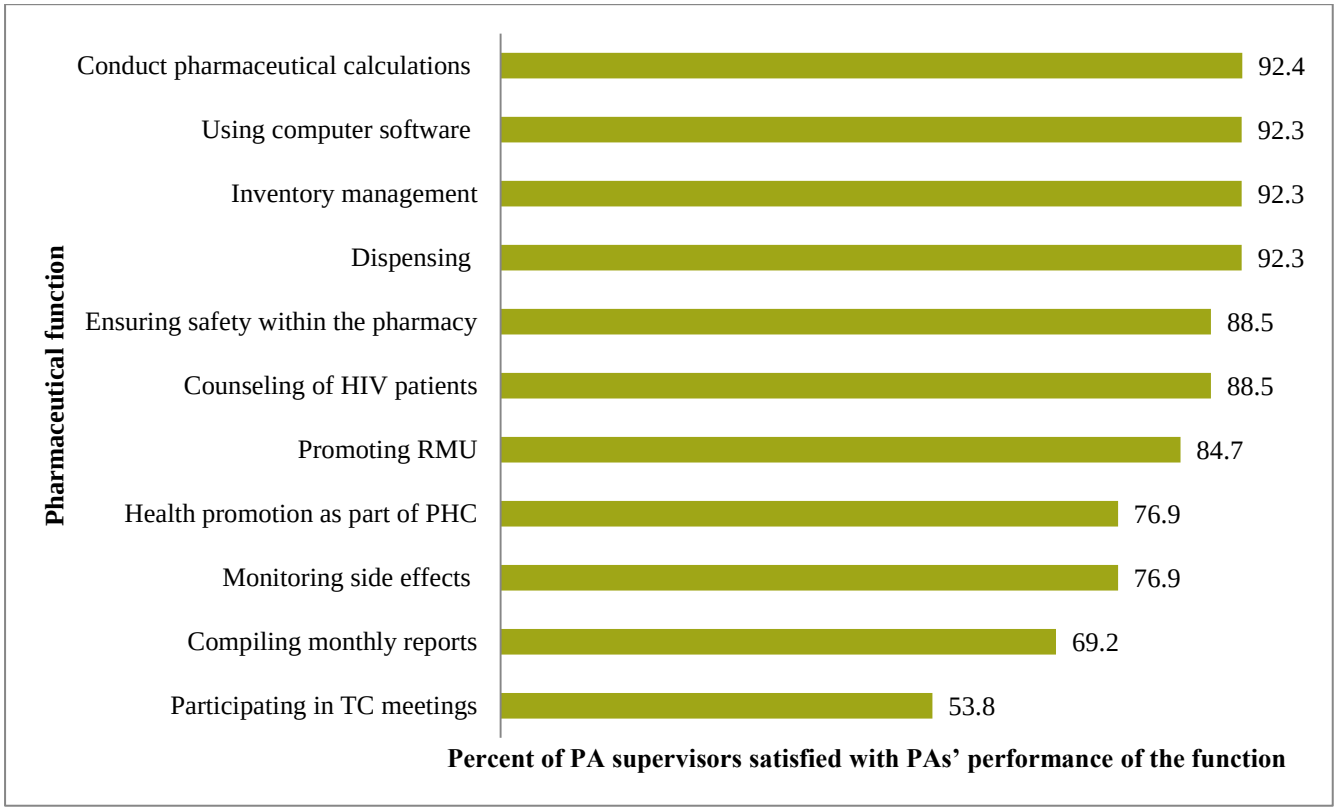


**Figure 6. Supervisors' satisfaction with PA work, by work tasks accomplished**

**Table 8. Employers' Satisfaction with PAs' Services, by Work Tasks Accomplished**

| Level of satisfaction, by ability to accomplish different functions, based on training received | Yes, to a great extent | Yes, but to a small extent | No | N/A | Missing |
|---|---|---|---|---|---|
| Dispensing of medicines | 92.3 | 0 | 0 | 0 | 7.7 |
| Stock and inventory management | 73.1 | 19.2 | 0 | 0 | 7.7 |
| Using computer software for pharmacy work | 69.2 | 23.1 | | 0 | 7.7 |
| Ensuring safety within the pharmacy | 65.4 | 23.1 | 3.8 | 0 | 7.7 |
| Counseling of HIV patients | 57.7 | 30.8 | 0 | 3.8 | 7.7 |
| Compiling pharmaceutical monthly reports | 53.8 | 15.4 | 15.4 | 7.7 | 7.7 |
| Conduct pharmaceutical calculations | 46.2 | 46.2 | 0 | 0 | 7.7 |
| Health promotion as part of PHC | 42.3 | 34.6 | 15.4 | 0 | 7.7 |
| Promoting rational medicine use | 38.5 | 46.2 | 7.7 | | 7.7 |
| Monitoring (reporting on) side effects of medicines | 19.2 | 57.7 | 3.8 | 11.5 | 7.7 |
| Participating in TC meetings | 19.2 | 34.6 | 23.1 | 15.4 | 7.7 |

### *Employers' Satisfaction with PAs Services, by Work Characteristics*

Over 80% of employers/supervisors strongly agree or agree that the PAs work with adequate knowledge, communication, and a positive attitude (figure 7 and table 9).

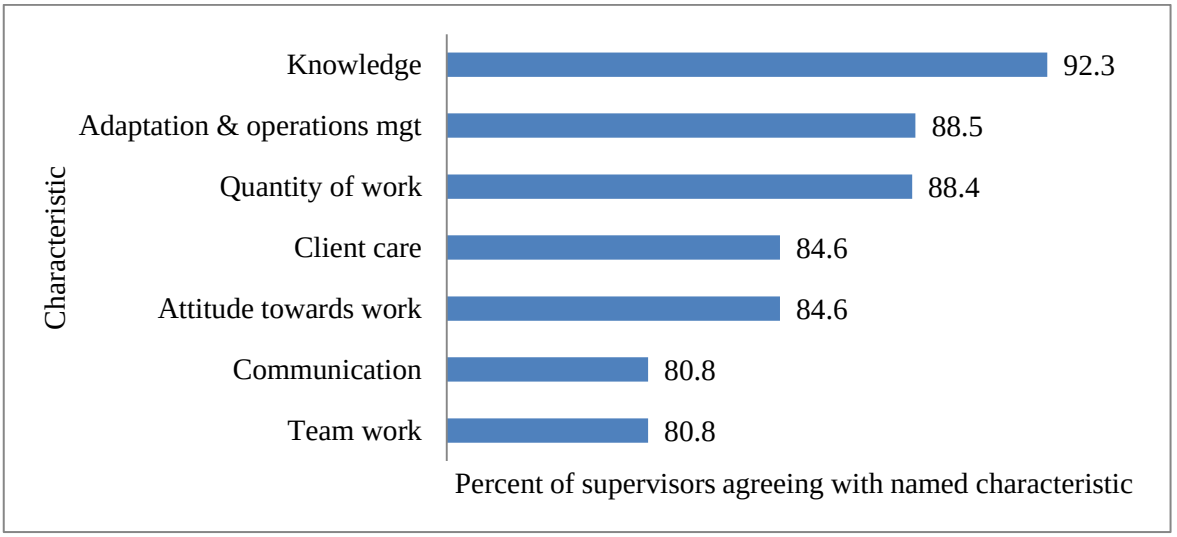


**Figure 7. Employers' satisfaction with PAs' services, by work characteristics**

**Table 9. Supervisors' Satisfaction with PA Work Characteristics**

| Work characteristics of PAs trained at NHTC | Percentage of employers / supervisors | | | | |
|---|---|---|---|---|---|
| | Strongly agree | Agree | Disagree | Strongly disagree | Missing |
| Understand their work (knowledge) | 34.6 | 57.7 | 0 | 0 | 7.7 |
| Accomplish assigned work on time (quantity) | 26.9 | 61.5 | 3.8 | 0 | 7.7 |
| Have positive attitude towards work | 30.8 | 53.8 | 7.7 | 0 | 7.7 |
| Able to deal with unfamiliar situations at work (adaptation & operations management) | 15.4 | 73.1 | 3.8 | 0 | 7.7 |
| Work well in teams (team work) | 34.6 | 46.2 | 11.5 | 0 | 7.7 |
| Have good oral and written communication skills | 23.1 | 57.7 | 11.5 | 0 | 7.7 |
| Have good client / customer care | 23.1 | 61.5 | 7.7 | 0 | 7.7 |

## *Overall Satisfaction: PAs and Supervisors Responses*

The majority (75%) of the surveyed PAs expressed satisfaction with the training they received at the NHTC. Almost all (96%) of the supervisors were satisfied with the PAs' performance in the workplace (table 10).

**Table 10. Overall Satisfaction: PAs and Supervisors' Responses**

| Rating | PAs* *(n=52)* | Supervisors** *(n=24)* |
|---|---|---|
| Score range 1-4 (=Not satisfied) | 25% | 4% |
| Score range 5-10 (=Satisfied) | 75% | 96% |

*PAs–overall satisfaction with PA teaching at NHTC.
**Supervisors–overall satisfaction with PAs' performance in the workplace.
n = Based on number of employers/supervisors who responded to the question on overall satisfaction.

### *Supervisors' Feedback to PAs on Their Performance*

PAs were asked to state what their supervisor's most recent remark was about their work. The majority (45.6%) of the PAs reported a remark of "very good" or "fairly good" (17.5%) (table 11).

### *Factors Associated with Employers'/Supervisors' Satisfaction with PAs' Services*

The assessment found eight factors associated with supervisors' satisfaction:

- PA does stock and inventory management *(p=0.046)*
- PA promotes RMU *(p=0.003)*
- PA ensures safety within the pharmacy *(p=0.000)*
- PA accomplishes assigned work in a timely manner *(p=0.000)*
- PA has a positive attitude towards work *(p=0.003)*
- PA is able to deal with unfamiliar situations at work *(p=0.000)*
- PA works well in teams *(p=0.026)*
- Frequency of feedback *(p=0.009)*

### *Other Stakeholders' Satisfaction with PAs' Services*

The assessment found minimal/unknown disciplinary cases for the PAs, implying that there are good PAs in the system, in general. Just three of the eight other stakeholders (38%) reported: ever hearing of disciplinary cases involving PAs; 12.5% ever got cases of PAs for disciplinary action; no known NHTC PA graduates from 2007 to 2013 were known to have faced disciplinary action; and none of the NHTC PA graduates were known to have been de-registered due to disciplinary actions.

### *Feedback on PA Services (Aspects of Satisfaction and Continuous Improvement)*

The study assessed whether supervisors give feedback to PAs, because feedback can be an aspect of satisfaction. More supervisors (84.6%) reported giving feedback, however, fewer PAs (68.4%) reported receiving feedback (table 11). Feedback is provided verbally more frequently, as opposed to in written form, and is primarily given anytime. Feedback therefore appears to be unstructured, can be missed by the target recipient (PA), has no documentation for future reference to assess progress of change made by the PA, and is hence a missed opportunity for continued learning by the PAs in the workplace.

**Table 11. Feedback on PAs' Services**

| Theme | PAs' responses | Supervisors' responses |
|---|---|---|
| Give /receive feedback | 68.4% | 84.6% |
| Characteristics of feedback | | |
| • feedback is verbal | 42.1% | 65.4% |
| • feedback sometimes written | 21.1% | 19.2% |
| • feedback given anytime | 42.1% | 69.2% |
| • feedback given at least monthly | 3.5% | 7.7% |
| • feedback given at least quarterly | 10.5% | 7.7% |
| • feedback given bi-annually | 3.5% | 0% |
| • feedback given at least annually | 8.8% | 0% |
| Most recent feedback | | |
| • Very good | 45.6% | No data collected |
| • Fairly good /satisfactory | 17.5% | |
| • Needs improvement | 3.5% | |
| • Missing | 33.4% | |

## Strengths and Weaknesses of the PA Training Program

### *Strengths of the PA Training Program*

The assessment revealed satisfactory teaching for efficient work of the PA, especially for dispensing medicines, stock and inventory management, conducting pharmaceutical calculations, promoting RMU, duration of the PA course, facilitation for learning at the NHTC, and scope of the curriculum content covered.

### *Areas for Review, Improvement in Teaching, and Involvement at Workplaces*

The assessment found that compiling monthly pharmaceutical reports, participating in TC meetings, reporting on side effects of medicines, the learning environment at the NHTC, resource materials, and opportunities for personal development are areas that need some improvement.

### *Skills/Topics Highlighted by Respondents as Missing from the PA Curriculum But Necessary for Their Work*

The PAs, supervisors, and other stakeholders highlighted a number of topics or skills as missing or insufficiently covered by the NHTC curriculum, yet they find such content relevant to their work (figure 8, figure 9, and table 12). These topics should be addressed to improve the PA training and to equip the PAs sufficiently for their work after graduation.

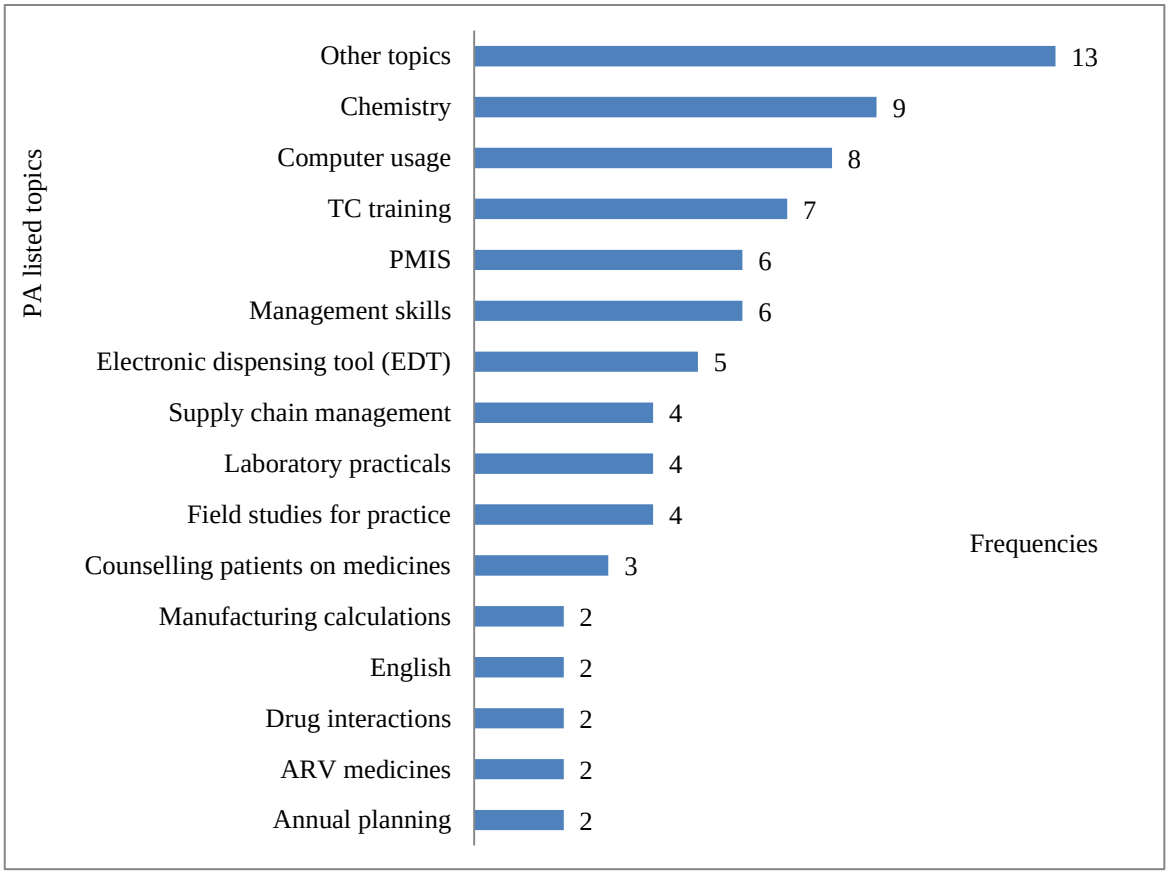


**Figure 8. Missing topics highlighted by PAs**

Other topics highlighted by the PAs included analytical skills, clinical supplies, communication, health education, infection control, molecular sciences, monitoring side effects of medicines, motivations for changes in the medicines list, pharmaceutical compounding, pharmacology, pharmacovigilance, therapeutic milk formula, and waste management.

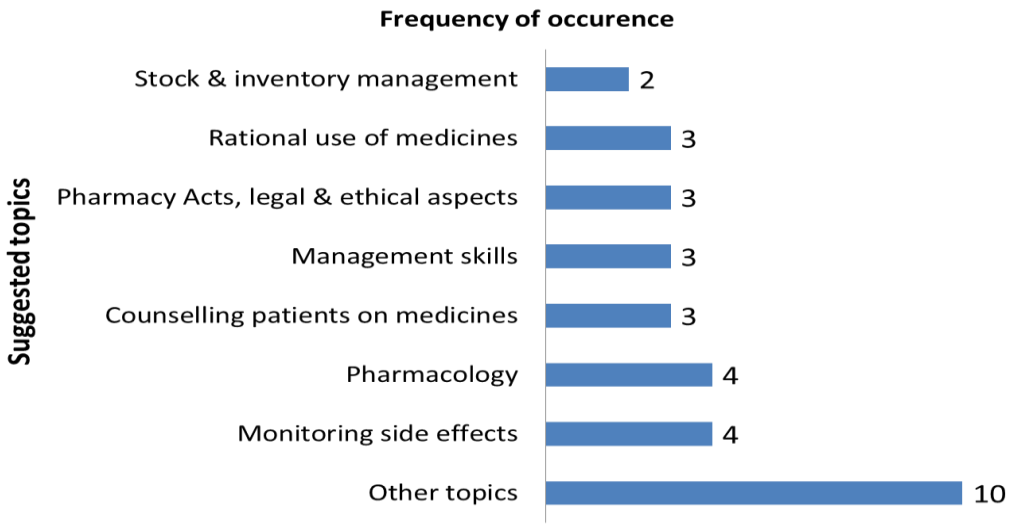


**Figure 9. Missing topics highlighted by supervisors/employers**

Other topics listed included **c**linical skills, clinical supplies, computer usage, field practice, HIV and AIDS counseling, medicine surveys, product names, professional conduct, TC training, and treatment guidelines.

**Table 12. Skills Missing – Other Stakeholders**

| Skills & knowledge missing* | Theme |
|---|---|
| Conducting medicine use evaluations | Medicine use evaluations |
| Discipline and ethics | Pharmacy Acts, legal & ethical aspects |
| Inventory management | Pharmaceutical supply chain management |
| Lab work in pharmacology (medicines) | Lab work in pharmacology |
| Managing TCs | TC training |
| Just need to practice once qualified | Field practice |
| Operational research skills | Operational research |
| Pharmaceutical care skills | Pharmaceutical care |
| Strengthen anatomy/physiology for core curriculum | Anatomy |
| Strengthen anatomy/physiology for core curriculum | Physiology |

***** The NHTC may consider these suggestions, but should also be realistic about the scope of the content that can be covered within the two-year duration of the PA course. Some topics may be covered in the technician course that the UNAM-SoP started offering in 2015.

## Respondents' Recommendations for Improving the PA Training Program

The top five recommendations offered by the PAs included: upgrade the PA course from a certificate to a diploma; increase the course duration to three years; improve the resource materials for teaching/learning; get more and permanent lecturers; provide more practicums, laboratory, and field work; and provide student accommodations (figure 10).

Employers/supervisors mainly recommended a curriculum review, introducing a diploma, increasing the PA course from two to three years, and longer structured field attachments for the PAs before graduation (figure 11).

Other stakeholder recommendations for improving the PA training program included: articulate the PA program with a diploma and degree at UNAM; include a focus on supply chain management, pharmacology, biomedical sciences, pharmacoeconomics, ethics, pharmacovigilance, and antimicrobial resistance (i.e., do a curriculum review); include management and leadership training, as well as discipline and ethics in the program; and include laboratory work on formulations and extemporaneous preparation.

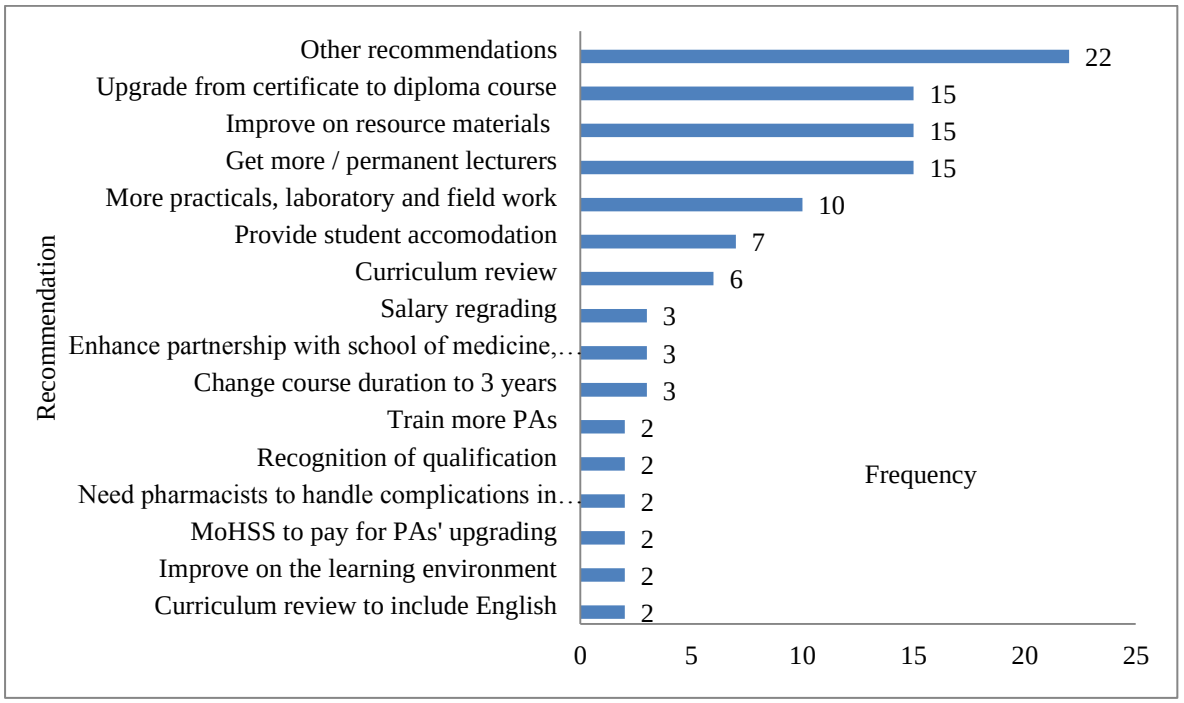


**Figure 10. Recommendations made by the PAs**

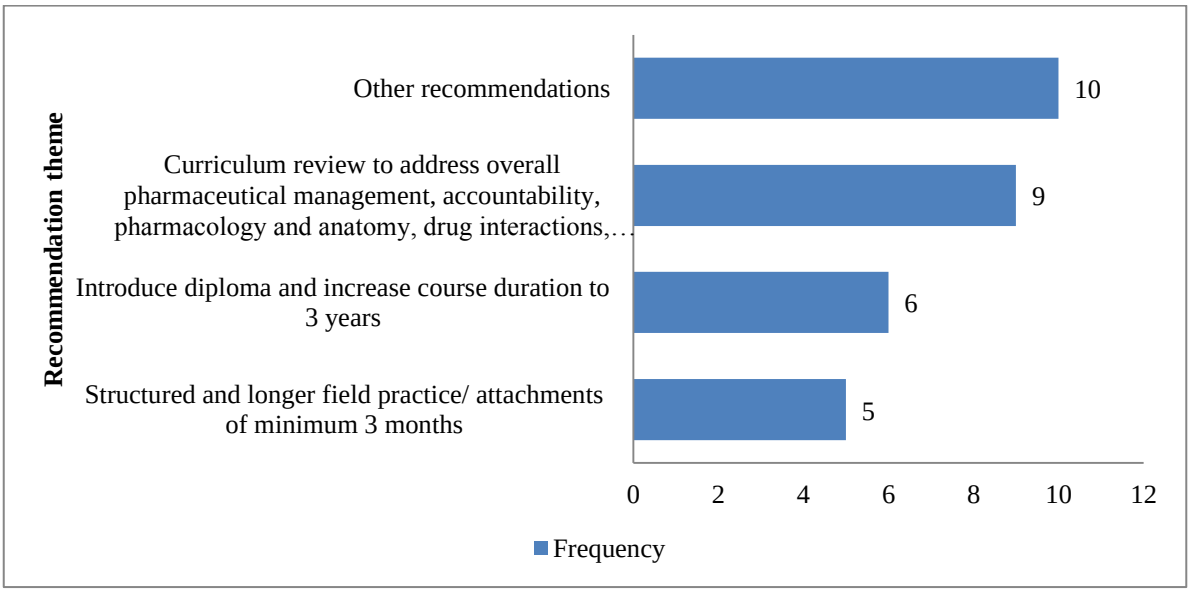

**Figure 11. Employers/supervisors' recommendations for improving the PA training program**

The assessment sought information from the PAs on whether they had engaged in any training after graduation for career enhancement. More than half (54.4%) reported receiving additional training, all of whom found the training to be useful for their work. The training lasted two to five days. The most frequently mentioned training topics/ themes were: HIV and AIDS and TB management, including pediatric ART and use of the EDT; and treatment guidelines, especially for ART, TB, and sexually transmitted infections (STI). The majority (82.5%) plan to study in the next one to three years, and 12.3% of the PAs were reported to be studying at the time of the assessment.

## DISCUSSION OF FINDINGS

The majority of the PAs surveyed were satisfied with the training that they had received at the NHTC, and almost all of the PAs' supervisors were happy with their work. The high level of satisfaction with NHTC's PA training and the PAs' output may be attributed, in part, to the series of systematic interventions implemented by SPS and SIAPS and supported by USAID to strengthen the capacity and quality of the PA training. Support included but was not limited to: improvement of the PA curriculum in 2009; assistance in strengthening human resource capacity by seconding tutors to the NHTC; development of teaching materials; technical assistance in basic pharmacy practice and research; and experiential learning through rotations in a community pharmacy, hospital pharmacy, pharmaceutical quality control laboratory, private sector pharmaceutical distributors, and the public sector central medical store, which enhanced the PAs' theoretical knowledge and imparted skills for actual PA work after graduation. The quality of the NHTC training and PA graduates will be further enhanced through: the QMS that was established in 2014 with SIAPS technical assistance; enhanced skills of the lecturers in facilitation; assessment and moderation of students' learning; and the virtualized classroom environment, which helps lecturers to deliver lectures, electronically manage student assignments, assessments, and course work, and the laboratory practical sessions and skills simulations. USAID support would not have yielded results without the commitment and support of the MoHSS under whose sole responsibility the NHTC falls. Thus, government commitment and support of partners, including donors like USAID, is critical to enhance the capacity of local institutions to train quality pharmaceutical personnel.

The persistent shortage of pharmaceutical sector personnel in Namibia, especially of pharmacists, has led to some PAs taking on roles that would otherwise be performed by pharmacists in the health facilities. Such gaps may have contributed to PAs' exposure to more roles, such as completing pharmaceutical reports, and participating in TC meetings, among others. PAs also reported receiving additional training, especially in aspects of HIV and AIDS and TB management, including pediatric ART and use of the EDT, and treatment guidelines, especially those for managing ART, TB, and STIs. The opportunities for work experience, by performing various roles with confidence and knowledge gained from additional training, may partly explain the high level of satisfaction in their work, in addition to the NHTC training that ably equipped them.

Many NHTC stakeholders, including PAs and supervisors, provided valuable suggestions for further improving the PA training at the NHTC. Feedback is always a key ingredient for continuous quality improvement. The positive feedback will serve as a motivation for the NHTC's continued quality training of PAs, motivate PAs already enrolled as well as those who may wish to join the cadre. The stakeholder-suggested areas for improvement provide evidence, on which the NHTC may improve and fill the gaps.

## CONCLUSIONS AND RECOMMENDATIONS

This assessment covered 50% of PAs that graduated from the NHTC over a seven-year period. The findings are therefore representative of the attributes and achievements of the PA training program in Namibia and may be used for decision making for the further improvement of the PA training and career development of PAs in Namibia. There was good interest and participation from employers/supervisors and other stakeholders. They provided positive feedback, implying a level of interest and the need for further engagement of supervisors and employers in the improvement of this course and career opportunities for PAs. Employers/supervisors are satisfied with PA work and selected work characteristics. The majority (75%) of PAs were satisfied with the training they received at the NHTC and are able to accomplish their pharmaceutical roles, which implies good content coverage for the work that the PAs are assigned to do in their workplaces. Almost all (96%) of the PAs work in jobs for which they were trained. The majority (87.5%) work in the public sector; 91.2% of the surveyed PAs ever worked in ART clinics; and 58% of the PAs serve in ART clinics, thereby contributing to the scale up and provision of essential ART services in Namibia. Therefore, the PA training program has been successful in providing critical human resources needed for the delivery of ART services in Namibia. Respondents suggested a number of topics for inclusion or greater emphasis in PA training, which the NHTC should consider in the PA curriculum review. The surveyed PAs had received additional training, mainly on HIV and AIDS and TB management, use of the EDT, and treatment guidelines, especially for HIV and AIDS and TB. The PAs found the additional training to be useful to their work. The PAs' engagement in compiling pharmaceutical reports and participating in TC meetings has room for improvement.

A summary of the conclusions drawn from the findings and applicable recommendations are presented in table 13.

**Table 13. Summary of Conclusions and Recommendations**

| Conclusions | Recommendations |
|---|---|
| • 96% work in a PA-related role; 87.5% in the public sector, serving Namibia as per their training. | 1. The **MoHSS** needs to devise strategies for retention of the large number of PAs working in the public sector. |
| • Many PAs either ever worked or currently work in ART clinics.<br>• Many PAs have received additional training, especially on HIV and TB management, treatment guidelines, and use of the EDT.<br>• Many respondents recommended curriculum review. | 2. **MoHSS** should enhance the NHTC's capacity, or the capacity of another relevant body, to provide CME for the PAs to enhance their skills and confidence in ART service delivery, including such tasks as compiling monthly pharmaceutical reports, participating in TC meetings, and monitoring the side effects of medicines. |
| | 3. **NHTC** should review the PA curriculum to enhance knowledge and skills in topics for which the PAs do not feel very confident, e.g., compiling monthly pharmaceutical reports, participating in TC meetings, monitoring side effects of medicines, as well as topics in which they have received additional training, especially HIV, AIDS and TB management and treatment guidelines. |
| • Limited written feedback<br>• Feedback seems unstructured | 4. **Employers/supervisors** should provide regular, written feedback to PAs for their continued learning and improvement on the job. |

| Conclusions | Recommendations |
|---|---|
| | 5. The **HPCNA** and the **MoHSS** should design and implement performance feedback forms to guide supervisors. |
| • 82.5% of the PAs plan to study in the next one to three years | 6. **UNAM-School of Pharmacy** may reach out to the over 82% of PAs who want to further their education for enrollment in the Diploma in Pharmacy program. |
| | 7. **UNAM-School of Pharmacy** should liaise with the MoHSS and private sector employers on how best the PAs may further their careers while still providing services. |

## DISSEMINATION OF REPORT AND IMPLEMENTATION OF RECOMMENDATIONS

The NHTC will disseminate the findings and recommendations to senior management of the MoHSS, NHTC management, NQA, HPCNA, the Pharmacy Council, PSN, USAID, SIAPS, UNAM-SoP, and other stakeholders. NHTC management will coordinate and facilitate stakeholder discussions and implementation of the recommendations. The NHTC may also share lessons learned from this assessment with wider audiences through publication of a manuscript.

The NHTC remains committed to producing quality PA graduates who will contribute decisively to enhance the efficiency, effectiveness, and quality of health and social services in Namibia. The vision can be achieved with support from all NHTC partners.

## CHALLENGES AND LESSONS LEARNED

A multi-stakeholder team set up to coordinate and implement the study ensured the appropriate use of skills and level of authority, both of which contributed to the success of the study. Reaching out to PAs at their workplaces enabled the completion of the questionnaires. A more intensified snowball sampling approach, enhanced by media notifications, could have expanded the tracing of more target PAs. Inclusion in the communication to target respondents and stakeholders of the benefits of providing feedback for improving the PA training at the NHTC motivated respondents to complete the questionnaires. Benefits to the stakeholders (PAs, employers, other stakeholders) included: improvement of the curriculum for future students; improved quality of training for better PA outputs; and NQA reaccreditation of the NHTC for PA training, thereby ensuring continued training of pharmaceutical personnel for Namibia.

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## ANNEX 1. MOHSS LETTER TO THE PAS, SUPERVISORS, EMPLOYERS, AND OTHER STAKEHOLDERS

9-0/0001

**REPUBLIC OF NAMIBIA**

*Ministry of Health and Social Services*


Private Bag 13198 National Health Training Centre Tel: (061) 2032586
Windhoek Mahatma Gandhi Street Fax: (061)232830
Namibia Windhoek email:jeanetteleboea@yahoo.com


**OFFICE OF THE PERMANENT SECRETARY**

Ref: 17/8
Enquiries: Ms. J. Leboea

Date: 08 September 2014

**TO:** **ALL REGIONAL DIRECTORS**
**ALL MEDICAL SUPERINTENDENTS**
**ALL CHIEF MEDICAL OFFICERS**
**ALL REGIONAL PHARMACISTS**
**ALL PRINCIPAL MEDICAL OFFICERS**
**THE REGISTRAR, PHARMACY COUNCIL OF NAMIBIA**
**THE PRESIDENT, PHARMACEUTICAL SOCIETY OF NAMIBIA**

**RE: TRACER ASSESSMENT FOR PHARMACY ASSISTANT GRADUATES OF THE NATIONAL HEALTH TRAINING CENTER (NHTC)**

Directorate: Policy Planning and Human Resource Development, Division National Health Training Centre (NHTC) has been training Pharmacist Assistants (PAs) since 1996. NHTC seeks information on work placements and performance of the PAs who graduated from the institution between 2007 and 2013.

This assessment is designed to assist NHTC to obtain recommendations from PAs, PAs' employers, supervisors and other stakeholders in order to improve the PA training program and produce competent PAs for quality pharmaceutical service delivery.

**Required action:**

- Allow the Regional Pharmacists to coordinate this activity
- Regional Pharmacists to distribute the questionnaire to all the PAs in their region.
- Regional Pharmacists to ensure that PAs in their respective Regions complete the forms
- Regional Pharmacists to collect the completed forms and submit to NHTC on or before 30 September 2014

*"Health for All"*

Your assistance in making this activity a success will be greatly appreciated. All information collected during the exercise will be kept strictly confidential and names will not be used nor identified in any way in the report.

Yours sincerely,

**MR. ANDREW NDISHISHI**
**PERMANENT SECRETARY**

Republic of Namibia
MINISTRY OF HEALTH AND SOCIAL SERVICES

## ANNEX 2. DATA COLLECTION FORM FOR PHARMACY ASSISTANTS

**REPUBLIC OF NAMIBIA**

Questionnaire
Serial No. _____

**MINISTRY OF HEALTH AND SOCIAL SERVICES**

**NATIONAL HEALTH TRAINING CENTRE (NHTC)**

**Data collection form for Pharmacy Assistants**

**Background to data collection: Refer to letter from the Permanent Secretary**

**Instructions:** Either fill in the blank space or check (✓) the box for a selected response.

| **A). PA (respondent's) profile.** | | | |
|---|---|---|---|
| 1. Sex: (1) □Male (2) □Female | | 2. Age at last birthday: _____ years | |
| 3. Year of graduation | (1) □2007<br>(2) □2008<br>(3) □2009 | (4) □2010<br>(5) □2011<br>(6) □2012 | (7) □2013 |
| **B). Current work status** | | | |
| 4. What are you doing right now?<br>*(Check ✓ only one option)* | i). Full-time wage employment | 1. □ | |
| | ii). Part-time wage employment | 2. □ | |
| | iii). Other (specify)_____ | 3. □ | |
| | iv). Unemployed and looking for work | 4. □ | |
| | v). Not employed and not looking for work | 5. □ | |
| 5. Have you ever worked in an ART clinic | (1) □Yes (2) □No | | |
| 6. Are you currently working in an ART clinic | (1) □Yes (2) □No | | |
| 7. How long have / did you work in an ART clinic | _____ Years. (Use fraction equivalent if less than one (1) yr | | |
| 8. Are you dispensing ARVs? | (1) □Yes (2) □No | | |
| 9. Do you participate / Have you ever participated in ART (HIV/AIDS) outreach services? | (1) □Yes (2) No□➔ skip to Qn 11 | | |
| 10. If yes to # 9, how frequently do you / did you participate in the ART (HIV/AIDS) outreach? | (1) □Weekly (2) □Monthly<br>(3) □Other. *Specify* _____ | | |
| **B.1. If you are working** | | | |
| 11. What is your current job title? | (1) □ PA (2) □ Senior PA<br>(3) □Other (specify) _____ | | |
| 12. How long have you worked in a PA role since graduation? ----------years----------months | | | |
| 13. Name of health facility/institution: _____ | | | |

| | | | |
|---|---|---|---|
| 14. How many other **pharmacist assistants** do you work with at your place of work? _____ | | | |
| 15. How many **pharmacists** do you work with at your place of work? _____ | | | |
| 16. Name of the town where you work: _____ | | | |
| 17. Region: | 1. □Zambezi<br>2. □Erongo<br>3. □Hardap<br>4. □!Karas<br>5. □Kavango East | 6. □Kavango West<br>7. □Khomas<br>8. □Kunene<br>9. □Ohangwena<br>10. □Omaheke | 11. □Omusati<br>12. □Oshana<br>13. □Oshikoto<br>14. □Otjozondjupa |
| 18. How long have you worked in your current workplace? | (1) □ Less than 6 months<br>(2) □ 6 months to 1 year | (3) □ 1-2 years<br>(4) □ More than 2 years | |
| **B.2. If you are NOT working as a PA or doing PA-related work** | | | |
| 19. What field / sector are you working in? e.g., legal, agriculture, mining, education, etc.)<br>_____ | | | |
| **C). Feedback on PA training received at NHTC**<br>*(information will be used in improvement of PA training* | | | |
| Have the knowledge and skills you acquired from NHTC enabled you to accomplish the following functions / tasks with ease? (Check ✓ the applicable response) | | | |

| Functions / Tasks | RESPONSES | | | |
|---|---|---|---|---|
| 20. Dispensing of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 21. Stock and inventory management | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 22. Counseling of HIV patients | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 23. Monitoring side effects of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 24. Promoting rational use of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 25. Participating in Therapeutics Committee (TC) meetings | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 26. Compiling pharmaceutical monthly reports | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 27. Using computer software for pharmacy work | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 28. Ensuring safety within the pharmacy/ health facility | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 29. Conduct pharmaceutical calculations, e.g., dosage calculations | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 30. Health promotion as part of primary health care | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 31. Which skills and knowledge do you feel you should have learned but they were **MISSING** from your training at NHTC? | i) _____<br>ii) _____<br>iii) _____ | | | |
| 31. On average, how many HIV patients do you attend to every day? (Estimate): _____ HIV patients/ day | | | | |
| **D). Student satisfaction with the PA course implementation** | | | | |

| **D.1. The teaching of the PA course at NHTC** | | | | |
|---|---|---|---|---|
| On a scale of 1 to 4 **(1=VERY GOOD and 4=VERY POOR)**, rank your satisfaction with the following aspects of PA teaching for the time of your study at NHTC. *Choose and check ✓only one option for each question* | | | | |
| *Aspect* | RESPONSES | | | |
| 33. Resource materials (e.g., books and printed materials, IT resources, specialized equipment, etc.) | 1. □ Very Good | 2. □ Good | 3. □ Fair | 4. □ Poor |
| 34. Facilitation for learning (e.g., lectures, assessments & feedback, academic support) | 1. □ Very Good | 2. □ Good | 3. □ Fair | 4. □ Poor |
| 35. Duration of the PA course | 1. □ Very Good | 2. □ Good | 3. □ Fair | 4. □ Poor |
| 36. Scope of curriculum content coverage | 1. □ Very Good | 2. □ Good | 3. □ Fair | 4. □ Poor |
| 37. Learning environment at NHTC | 1. □ Very Good | 2. □ Good | 3. □ Fair | 4. □ Poor |
| 38. Opportunity for personal development (e.g., oral & written communication, problem solving, life skills, etc.) | 1. □ Very Good | 2. □ Good | 3. □ Fair | 4. □ Poor |

| D.2. Overall satisfaction | |
|---|---|
| 39. On a scale of 1-10 **(1 being LEAST satisfied and 10 being MOST satisfied)**, write a figure representing your overall satisfaction with the PA program at NHTC | Ranking: _____ |

| E). Additional training / further studies | | |
|---|---|---|
| 40. Have you received any additional training since graduation? | (1) □Yes (2) □No➔ skip to Qn 46 | |
| 41. If yes, was the training useful for your work? | (1) □Yes (2) □No | |
| 42. What were the main topics / areas of the additional training received? (Include aspects related to PA work) | 1. _____<br>2. _____<br>3. _____ | |
| 43. What was the duration of the training received | (1) □ 2-5 days<br>(2) □ 1-2 weeks<br>(3) □ 2 weeks to 1 month | (4) □ 1-3 months<br>(5) □ 3-6 months<br>(6) □ More than 6 months |
| 44. What qualification was attained at the end of the training? _____ | | |
| 45. Name of training institution for **course upgrades lasting more than one year:**<br>45a. Institution: _____ 45b. Country: _____ | | |

| **F). Plans for career upgrade** | |
|---|---|
| 46. What are your plans for career enhancement? | (1) □Currently studying<br>(2) □ Planning to study in the next 1-3 years<br>(3) □No plans for further study |

| **G). Employer / supervisor feedback on your work** | |
|---|---|
| 47. Do your supervisors/ employers regularly give you feedback on your work? | (1) □Yes (2) □No➔ skip to Qn 51 |
| 48. If Yes to # 47, is the feedback verbal only or sometimes written? | (1) □Verbal only<br>(2) □ Sometimes written |
| 49. How regular is the feedback? | (1) □Any time<br>(2) □ At least monthly |

| | |
|---|---|
| | (3) □ At least quarterly (every 3 months)<br>(4) □ At least once in 6 months<br>(5) □ At least once in 12 months (annual) |
| 50. Generally, what was the most recent remark about your work by your supervisor / employer? | (1) □ Very good<br>(2) □ Fairly good / Okay / satisfactory<br>(3) □ Needs improvement |
| **H). Recommendations** | |
| 51. Provide any 3 recommendations to MoHSS/NHTC for improving the PA training<br>1. _____<br>2. _____<br>3. _____ | |
| **I). PA's profile.** ***Information needed for building a student alumni database at NHTC*** | |
| 52: Name & Surname: | Name(s)_____ Surname: _____ |
| 53. Cellphone number | |
| 54. Email address | |
| 55. How much do you earn **PER MONTH** in your current work?<br>(Gross salary) | (1) □ N$ 3000 - 5000 (2) □ N$ 5001 - 7000<br>(3) □ N$ 7001 – 9000 (4) □ N$ 9001 – 11000<br>(5) □ More than N$ 11000 |

**Thank you very much for taking the time to participate in this assessment. Once again, any information you have given will be kept completely confidential.**

**The management of NHTC wishes you a fruitful career**

## ANNEX 3: DATA COLLECTION FORM FOR EMPLOYERS AND SUPERVISORS OF PHARMACIST ASSISTANTS

**REPUBLIC OF NAMIBIA**

Questionnaire
Serial No. _____

**MINISTRY OF HEALTH AND SOCIAL SERVICES**

**NATIONAL HEALTH TRAINING CENTRE (NHTC)**

*Data collection form for employers / supervisors of the Pharmacy Assistants

**Background to data collection: Refer to letter from the Permanent Secretary**

Instructions: Either fill in the blank space or check (✓) the box for a selected response.

| **A). Respondent's / and employer's profile.** | | | |
|---|---|---|---|
| 1. Sex of respondent: (1) □Male (2) □Female | | | |
| 2. Name of health facility/institution: _____ | | | |
| 3. Town where the institution is located: _____ | | | |
| 4. Region: | 1. □Zambezi<br>2. □Erongo<br>3. □Hardap<br>4. □!Karas<br>5. □Kavango East | 6. □Kavango West<br>7. □Khomas<br>8. □Kunene<br>9. □Ohangwena<br>10. □Omaheke | 11. □Omusati<br>12. □Oshana<br>13. □Oshikoto<br>14. □Otjozondjupa |
| 5. Total number of pharmacy assistants (PAs) employed: _____ | | | |
| 6. Number of PA employees *who graduated from NHTC between 2007-2013)*: _____ | | | |
| **B). Current work status of the PA(s) employed**<br>**Please complete a separate form for each PA if he/she graduated between 2007-2013** | | | |
| 7. What is the current nature of employment of the PAs? *(Check ✓ the applicable option)* | i). Full-time wage employment | 1. □ | |
| | ii). Part-time wage employment | 2. □ | |
| | iii). Other (specify)_____ | 3. □ | |
| 8. What is the job title of the PA employee? | (1) □ PA (2) □ Senior PA<br>(3) □Other (specify) _____ | | |
| 9. How long has the PA employee worked in your institution? ------- years, ------- months | | | |
| 10. What is the average duration of stay by PAs employed by your institution? | (1) □ Less than 6 months<br>(2) □ 6 months to 1 year | (3) □1-2 years<br>(4) □ More than 2 years | |
| 11. Does the facility offer ART services | (1) □Yes (2) No□ ➔ skip to Qn 18 | | |
| 12. Does the PA currently work in the ART clinic | (1) □Yes (2) □No | | |

| | |
|---|---|
| 13. Has the PA ever worked in the ART clinic? | (1) □Yes (2) □No |
| 14. How long have / did the PA work in an ART clinic | _____ Years. (Use fraction equivalent if less than one (1) yr |
| 15. Does the PA dispense ARVs? | (1) □Yes (2) □No |
| 16. Does the PA participate / ever participated in ART (HIV/AIDS) outreach services? | (1) □Yes (2) No□➔ skip to Qn 18 |
| 17. If yes to # 9, how frequently did/ does he/she participate in the ART (HIV/AIDS) outreach? | (1) □Weekly (2) □Monthly<br>(3) □Other. *Specify* _____ |

**C). Feedback on PA training received at NHTC**

Does the PA trained at NHTC accomplish the following functions / tasks with ease? (Check ✓ the applicable response)

| Functions / Tasks | RESPONSES | | | |
|---|---|---|---|---|
| 18. Dispensing of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 19. Stock and inventory management | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 20. Counseling of HIV patients | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 21. Monitoring side effects of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 22. Promoting rational use of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 23. Participating in Therapeutics Committee (TC) meetings | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 24. Compiling pharmaceutical monthly reports | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 25. Using computer software for pharmacy work | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 26. Ensuring safety within the pharmacy/ health facility | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 27. Conduct pharmaceutical calculations, e.g., dosage calculations | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 28. Health promotion as part of primary health care | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |

| | |
|---|---|
| 29. Which skills and knowledge do you feel the PAs should have learned but they were **MISSING** from their training? | i) _____<br>ii) _____<br>iii) _____ |

**D). Employer / supervisor satisfaction with the PA performance at work**

| *Choose and check only one option for each question based on your opinion of the PA(s) currently employed* | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
|---|---|---|---|---|
| 30. The PA seems to fully understand his/her work | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
| 31. The PA is able to accomplish assigned work in a timely manner | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |

| | | | | |
|---|---|---|---|---|
| 32. The PA has a positive attitude towards work | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
| 33. The PA is able to deal with unfamiliar situations at work | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
| 34. The PA works well in teams | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
| 35. The PA has good oral and written communication skills | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
| 36. The PA has good client / customer care | 1.Strongly agree □ | 2.Agree□ | 3. Disagree □ | 4. Strongly disagree □ |
| 37.On a scale of 1-10 **(1 being LEAST satisfied and 10 being MOST satisfied)**, write a figure representing your overall satisfaction with the PA performance | | | Ranking: _____ | |

| **E). Employer / supervisor feedback on the PA's performance at work** | |
|---|---|
| 38. Do you as a supervisor / employer regularly give feedback to the PA about his/her work? | (1) □Yes (2) □No➔ skip to Qn 41 |
| 39. If Yes, is the feedback verbal only or sometimes written? | (1) □Verbal only (2) □ Sometimes written |
| 40. How regular is the feedback? | (1) □ Any time<br>(2) □ At least monthly<br>(3) □ At least quarterly (every 3 months)<br>(4) □ At least once in 6 months<br>(5) □ At least once in 12 months (annual) |

**H). Recommendations**

41. Provide any 3 recommendations to MoHSS/NHTC for improving the PA course and general PA training

i) _____
ii) _____
iii) _____

**I). Additional information (for NHTC's contacts of stakeholders)**

42. Age of respondent: _____ years

43: Name of respondent's (employer's / supervisor's) work **institution**

_____

| | | |
|---|---|---|
| 44. Work phone number | | |
| 45. Email address | | |
| 46. How much do you pay the PA(s) PER **MONTH**? (Gross salary) | (1) □ N$ 3000 - 5000<br>(2) □ N$ 5001 - 7000<br>(3) □ N$ 7001 – 9000 | (4) □N$ 9001 – 11000<br>(5) □ More than N$ 11000 |

**Thank you very much for taking the time to provide useful feedback about the Pharmacy Assistants and their training program implemented by NHTC.**

Best wishes

## ANNEX 4: DATA COLLECTION FORM FOR OTHER STAKEHOLDERS

**REPUBLIC OF NAMIBIA**

Questionnaire
Serial No. _____

**MINISTRY OF HEALTH AND SOCIAL SERVICES**

**NATIONAL HEALTH TRAINING CENTRE (NHTC)**

**Data collection form for stakeholders of NHTC**

**Background to data collection: Refer to letter from the Permanent Secretary**

Instructions: Either fill in the blank space or check (✓) the box for a selected response.

| **A). Respondent's / and employer's profile.** | |
|---|---|
| 1. Sex of respondent | (1) □Male (2) □Female |
| 2. Is your institution in any way associated with training, employment, monitoring, or ensuring quality of Pharmacy Assistants (PAs) in Namibia? | (1) □Yes (2) □No |

**B). Feedback on PA training received at NHTC**

Do the PAs trained at NHTC generally accomplish the following functions / tasks with ease? (Check ✓ the applicable response) – *as much as you are aware of the Pas' performance.*

| **Functions / Tasks** | **RESPONSES** | | | |
|---|---|---|---|---|
| 3. Dispensing of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 4. Stock and inventory management | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 5. Counseling of HIV patients | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 6. Monitoring side effects of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 7. Promoting rational use of medicines | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 8. Participating in Therapeutics Committee (TC) meetings | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 9. Compiling pharmaceutical monthly reports | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 10. Using computer software for pharmacy work | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 11. Ensuring safety within the pharmacy/ health facility | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |

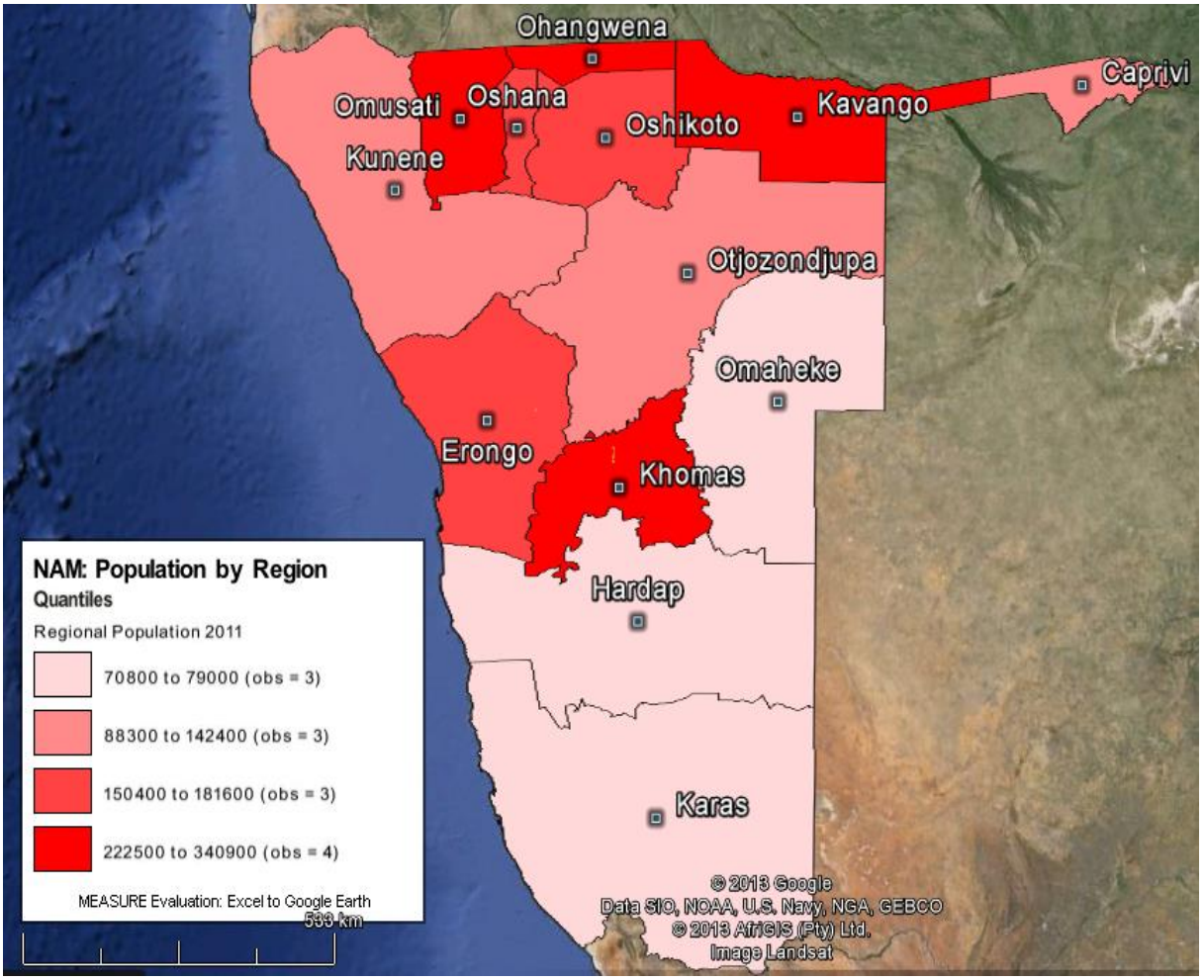
| | | | | |
|---|---|---|---|---|
| 12. Conduct pharmaceutical calculations, e.g., dosage calculations | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 13. Health promotion as part of primary health care | 1.Yes; to a **great** extent □ | 2.Yes; but to a **small** extent □ | 3.No □ | 4.N/A□ |
| 14. Which skills and knowledge do you think the PAs should have learned but they were **MISSING** from their training? | i) _____<br>ii) _____<br>iii) _____ | | | |

| | |
|---|---|
| **D). Stakeholder's satisfaction with the PA performance in Namibia.**<br>*Choose and check only one option for each question based on your role in PA training/ regulation* | |
| *15.* Have you heard of any disciplinary cases with PAs | (1) □Yes (2) □No |
| 16. Do you get some cases of PAs for disciplinary action? | (1) □Yes (2) □No |
| 17. If yes, how many from the PAs who graduated from NHTC between 2007 and 2013? | _____ |
| 18. How many of NHTC-trained PAs (2007-2013) were de-registered? | _____ |
| **E). Recommendations** | |
| 19. Provide any 3 recommendations to MoHSS/NHTC for improving the PA course and general PA training<br>i) _____<br>ii) _____<br>iii) _____ | |
| **I). Additional information (for NHTC's contacts of stakeholders)** | |
| 20. Age of respondent | _____ years |
| 21: Name of respondent's (stakeholder's) **institution** | |
| 22. Work phone number | |
| 23. Email address | |

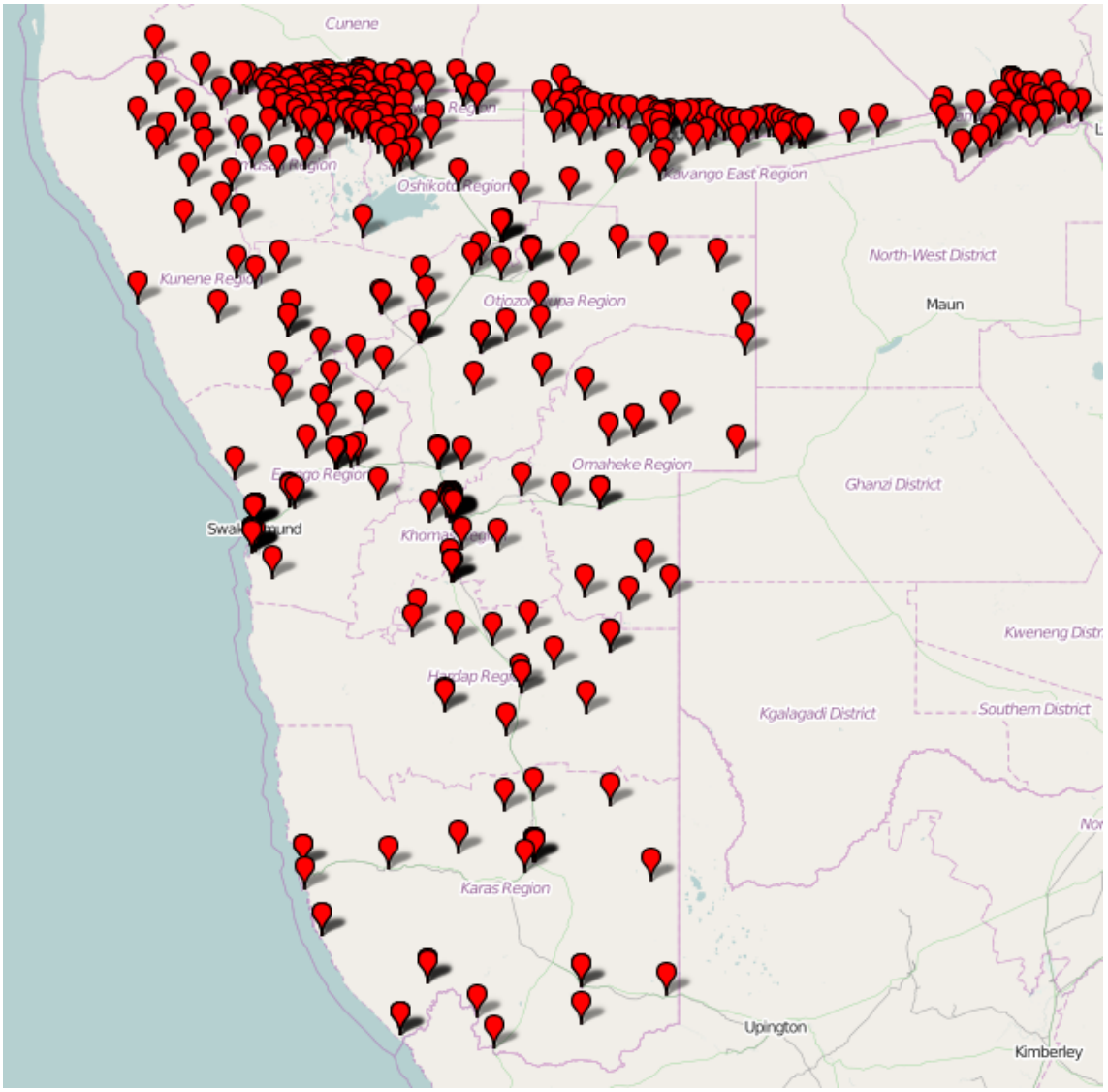
**Thank you very much for taking the time to provide useful feedback about the Pharmacy Assistants and their training program implemented by NHTC.**

Good day

## ANNEX 5: MAP SHOWING POPULATION BY REGION



## ANNEX 6: MAP SHOWING SPATIAL DISTRIBUTION OF HEALTH FACILITIES

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