

## Cost of Training of a Pupil Nurse in Northern Sri Lanka - Case Study Report

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### **Abstract:**

*The objective of this case study is to conduct costing of training of pupil nurses at nurses training school of Vavuniya in Northern Province of Sri Lanka. The pre-service training for the above workforce is unique in its governance mechanism as they are trained entirely by the training schools under the purview of the central unit, the Directorate of Training under Education, Training and Research (ET & R) Unit of Ministry of Health. There are 18 nurses training schools all over Sri Lanka. These schools of training are technically supervised by the Directorate of Training yet function under the administrative supervision of the respective health institutions. The intake for pre-service training is determined by the Administrative Sections of the Ministry of Health in consultation with ET&R Unit and the management development and planning unit (MDPU) of the Ministry of Health Sri Lanka. Nursing training school Vavuniya (NTS Vavuniya) is unique compare to other training school because this is the only training school which is administratively comes under the regional director of health services (RDHS) of Vavuniya district in Northern Province of Sri Lanka. i. e under the provincial ministry of health, Northern Province. All the schools are coming under central ministry institutions. This is the 1<sup>st</sup> unit costing study conducted at NTS Vavuniya and it reveal that producing a nursing officer from NTS Vavuniya is costing higher than NTS Colombo.*

**Keywords:** Costing, Basic training, Nursing officers, Nurses training school

### **1. INTRODUCTION**

The Directorate of Training of the Education, Training and Research Unit of the Ministry of Health is responsible for capacity building of the health work force through pre-service and in-service training programmes.

The Directorate of Training coordinates with Ceylon Medical College Council, University Grants Commission and other relevant academic and professional institutions and organizations in Sri Lanka in strengthening human resource capacity of the health sector. This Directorate is responsible for providing technical guidance and the coordination of pre-service training programmes for the health workforce except Medical Officers and Dental surgeons.

The pre-service training for the nursing officers is unique in its governance mechanism as they are trained entirely by the training schools under the purview of the central unit, the Directorate of Training.

There are 18 training schools and seven regional training centers. The schools are mainly located at National Hospital of Sri Lanka, National Institute of Health Sciences, Medical Research Institute, few other teaching hospitals which all comes under central ministry except NTS Vavuniya which administratively comes under preview of provincial ministry of health, Northern Province.

The limited budgets assigned to health care mean that health planners and medical administrators must be able to account for the resources used in health care facilities as well as use them efficiently. Therefore, it is important for a medical administrator to be aware of unit cost data of preservice training.

For the costing study of pre training, All the 18-nursing school should have been taken into account when calculating cost per nursing student, but for the purpose of the study, NTS Vavuniya was selected because of time and resource constrains and unit costing of pre training at NTS Vavuniya was not done in past.

For the purpose of the study, Colombo Nurses Training School was selected.

NTS Vavuniya was built in 2007/2008 financial year and cost of construction was 50 million Sri Lankan rupees including the hostel facilities for the students.

Administration of the NTS Vavuniya is by the two administrative structures. One is RDHS Vavuniya and another is DDG of Education, Training and Research (ET&R) Unit of Ministry of Health, Sri Lanka. Under the DDG ET&R, Director/ Nursing - Education is the immediate administrative head from the ET&R unit. At the operational level, Principal/NTS is the head of the NTS Vavuniya.

In the academic year of 2017, there were 168 nursing students from three batches (2014, 2015 and 2016) underwent their pre services training. From the initiation of this NTS, all the expenditures are born by the Provincial Ministry of Health, Northern Provincial Council of Sri Lanka. The student allowance was reimbursed by the ET&R unit of central ministry.

After 2015, due to political reasons the provincial ministry of health not allowed the RDHS Vavuniya to pay the students allowance. As a result, since 2016 the student allowances for NTS Vavuniya is paid through TH Anuradapura by Central Health Ministry of Sri Lanka.

### 1.1 Objective

- To costing the training of pupil nurses at Nurses training school Vavuniya in Northern Sri Lanka

### 1.2 Methodology

- The scenario building technique of costing.

The Scenario building methodology involves four steps.

**Step 1:** To list out all the known relevant physical or personal characteristics.

**Step 2:** Adopting list of assumptions (based on experiences of other countries from the literature or expert opinions) has to be explicitly stated.

**Step 3:** Combining empirical information and assumptions to reach cost estimates.

**Step 4:** Validation of the cost estimates derived in this manner and the understanding of the limitations arising from the use of assumptions in the Scenario building technique.

As stressed by A de Silva et al (1997) this method of costing is obviously prone to the idiosyncrasies of the researcher, but its virtue lies in the practicality of this approach and this has made it a popular costing technique in recent times in Sri Lanka.

## 2. PROBLEM ANALYSIS

### Staff

Principal - 01

Senior Tutor - 04

Tutors - 01

Librarian – 0

Development Officer - 01

Management Assistant -01

Health Service Assistants (SKS)- 08

House wardens - 03

Diet steward - 0

Driver – 1

Cook - 1

Outsourced Security service and cleaning service - 4

Total staffs of forty-four (24) were worked in the Nursing school of Vavuniya in year 2017.

There are two type of expenses such as recurrent expenditure (Table 1) and capital expenditure (Table 2) from the two sources namely central and provincial (RDHS Vavuniya) ministries (figure 1).

**Table 1: Recurrent Expenditure**

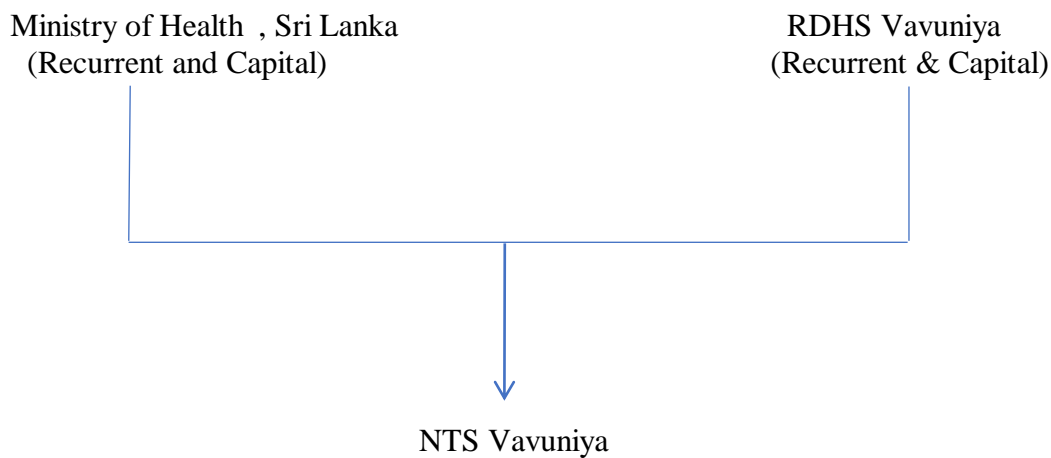
Expenditure Type	Funding Source
Salaries	Provincial Ministry of Health through RDHS Vavuniya
Student allowances	Central Ministry of Health through TH Anuradapura
Students uniform allowances	Provincial Ministry of Health through RDHS Vavuniya
Electricity	Provincial Ministry of Health through RDHS Vavuniya
Telephone	Provincial Ministry of Health through RDHS Vavuniya
Gas	Provincial Ministry of Health through RDHS Vavuniya

Source: Finance Division, RDHS Vavuniya

**Table 2:** Capital Expenditure

Expenses Type	Funding Source
Minor repairs	Provincial Ministry of Health through RDHS Vavuniya
Major repairs	Central Ministry of Health through ET&R
Constructions	Central Ministry of Health through ET&R
Purchasing equipment's	Central Ministry of Health through ET&R
Purchasing furniture	Central Ministry of Health through ET&R
Purchasing vehicles	Central Ministry of Health through ET&R
Purchasing books	Central Ministry of Health through ET&R

Source: Finance Division, RDHS Vavuniya



**Figure 1:** Sources of fund for NTS Vavuniya, 2017.

Annual activity plan of RDHS Vavuniya is including recurrent expenditure and capital work plans for NTS Vavuniya for recurrent and capital expenditure.

Annual activity plan of the ET&R unit including capital work plan of the all the nursing training schools in the country, including NTS Vavuniya. This capital allocation is used for major repairs, construction, purchasing of equipment, books, furniture and vehicles. This allocation could be through budget lines from government of Sri Lanka (GoSL) fund or funds from donor agencies like World Health Organization (WHO).

The scenario building technique of costing was adopted to perform the costing study at NTS Vavuniya.

All the items which were included as the cost items were obtained from the respective authorities according to the check list. Every item was taken separately for the cost calculation.

The identified items and sources of cost data are given below:

**a. Land, building, furniture and equipment**

It was maintained and renovation was done partly by RDHS Vavuniya and the central Ministry of Health, Sri Lanka through the ET&R unit. Cost of these items was added to the cost after depreciation of the original purchased value. It was not considered due to the time constrain and the numerous renovations and the repair and replacement were done during the past ten years. Compare to the period of study and land area of the NTS can be refraining from taking into the calculation.

**b. Electricity**

Total electricity cost for year 2017 was taken. From that, a proportion was taken for the hours of active training period.

**c. Water**

Total cost of the water usage was taken for the year 2017. From that, a proportion was taken similar way to electricity.

**d. Telephone**

Total cost for telephone facility was taken in the similar way as of the water and electricity. A proportion was calculated.

**e- Gas** – Total cost was taken in the similar way of the water and electricity. A proportion was calculated.

**f. Staff** – 44 in number

1. Principal - 1
2. Senior Tutor - 1
3. Tutors - 14
4. Librarian – 1
5. Development officer - 1
6. Health management assistants - 3
7. House wardens - 5
8. Diet steward - 1
9. Driver – 1
10. Cook - 1
11. Health Assistance - 11
12. Minor staff – 4

Above detailed staffs were deployed in full time basis at the TNS Vavuniya. The total expenditure for their salaries and wages for all 12 months in 2017 obtained from RDHS Vavuniya.

In the academic year of 2017, total 67,476,326.84 Rupees provided as monthly allowance for the nursing students at NTS Vavuniya (Table 3).

**Table 3: Total expenditure for student allowance in Year 2017**

Allowance given by the Ministry of Health <u>per nursing student per month</u> was Rs. 33,408.00 Rupees		
Year of student	Numbers present	Cost for allowances in Year 2017
3rd Year (2014 Batch)		34,206,863.26
2nd Year (2015 Batch)		22,246,708.26
1st Year (2016 Batch)		11,022,755.32
<b>Total</b>		67,476,326.84

At a given year there are 3 batches in the Nursing School. They are in 1 year, 2 year and the 3 year.

Source: Finance Division, RDHS Vavuniya

As the utility components, electricity, water, gas and the telephone were taken into consideration for the calculation. As per following table 4, recurrent cost was taken to the consideration for the calculation.

**Table 4: Recurrent Expenditure in the year 2017**

Expenditure Type	Total Cost
Salaries and wages	17,069,548.99
Extra duty	516980.00
Student allowances	67,476,326.84
Students uniform allowances	82800.00
Electricity	11,157,036
Telephone	14,400
Gas	120,000
<b>Total</b>	96437091,83

Source: Finance Division, RDHS Vavuniya

As per following table 5, capital cost was taken to the consideration for the calculation.

**Table 5:** Capital cost

Expenditure type	Total Cost
Minor repairs	5,000,000.00
Major repairs	Not applicable
Constructions	Not applicable
Purchasing equipment's	500,000.00
Purchasing furniture	300,000.00
Purchasing vehicles	Not applicable
Purchasing books	100,000.00
Total	5,900,000

**Source:** Finance Division, RDHS Vavuniya

Electricity and water expenses should be appropriate with the time of training. Training session will be conducted in the classrooms for the full day from 7am to 5 pm for the first years and other two years of students are using the NTS classrooms along with the clinical training at the hospitals. In this scenario, only considering the NTS cost is not adequate to calculate the exact cost for the training. But, due to the time constrain and the complex exercise of calculation, few important cost components were only considered for the calculation.

Therefore, we considered the pupil nurses of all three batches at NTS Vavuniya who were in training at a time of costing study. Total of pupil nurses was 168. Table 6 shows the calculation of approximate annual cost to train a pupil nurse:

**Table 6:** Approximate annual cost to train a pupil nurse

Cost Centers (Direct and Indirect)	Per year spending (Rs)
Total cost for the salaries, wages and extra duty payments for the staff	17,586,528.99
Total of utility Electricity, telephone, water and Gas	11,291,436.00
Allowance for the pupil nurses (Including Uniform allowance)	67,476,326.84
Uniform allowance to the pupil nurses	82,800.00
Total capital expenditure	5,900,000
Total expenses (approximately)	102,337,091.83
Average approximate cost per pupil nurse for a year	102,337,091.83/ 168= <b>609,149.36</b>

**Source:** Cost study data

At NTS Vavuniya, to train a pupil nurse approximate annual cost is Rs 609,149.36. So, average approximate cost to produce a Nursing officer by giving three-year training at Vavuniya NTS is 1.8 Million Rupees (609,149.36x 3 =1,827,448.08).

At the same time, total average cost per nursing student per year in NTS Colombo was Rs. 508,381.44 (G. S. P. Ranasinghe, 2017).

### Limitations

- Cost was calculated with the minimum information.
- Actual cost calculation method was not applied.
- Time was limited to collect the information.

To identify the reason for higher cost at NTS Vavuniya, desk review of published data on costing at NTS Colombo conducted. It was revealed that at NTS Colombo there were 491 Students while NTS Vavuniya had only 168 students.

### 3. PROPOSALS

The costing study shows that the cost for producing a nursing officer at NTS Vavuniya is higher than of NTS Colombo.

**3.1 Solution 1: Increase the intake capacity of NTS Vavuniya.**

Advantage:

1. This will bring down the production cost of nurses at NTS Vavuniya,
2. This will increase the number of qualified nursing officers in the country and solve the server shortage of nurses in the healthcare institutions,
3. This will help to produce more qualified nurses. So, skill migration will be increase which is favorable for economic stability of our country,
4. This will help to reduce the unemployment in the country, and
5. This will improve the overall economy of the country. A host of studies suggest that putting earnings in women's hands is the intelligent thing to do to speed up development and the process of overcoming poverty (World bank, factsheet 2019).

Disadvantage: There is no disadvantage

**3.2 Solution 2: Stop intake of nurses at NTS Vavuniya**

Advantage: Can avoid high cost production of nurses

Disadvantage:

1. This will affect the capacity of producing nursing officers at the time when the country is facing server shortage of nurses.
2. This NTS Vavuniya is in Northern Province. So stopping intake of nurses to this training school may create political turbulence and embarrass the government of Sri Lanka.

**4. RECOMMENDATION**

It is recommended to increase the intake capacity of NTS Vavuniya which will reduce the production cost and bring many advantages to the country.

**5. THE IMPLEMENTATION**

The table 7 shows the implementation plan

**Table 7:** Implementation plan

Activity	Responsibility	Time period
Situation analysis	DDG ET&R/D-Training/ RDHS Vavuniya	May - June/ 2020
Develop action plan to increase the intake	DDG ET&R/D-Training/ RDHS Vavuniya	July 2020
Implement the action plan,	DDG ET&R/D-Training/ RDHS Vavuniya	2021 onwards
Monitoring and evaluation.	D-Training/ RDHS Vavuniya	2020 onwards

**6. CONCLUSION**

This is the 1st unit costing study conducted at NTS Vavuniya.

Average approximate cost to produce a Nursing officer by giving three-year training at Vavuniya NTS is 1.8 Million Rupees ( $609,149.36 \times 3 = 1,827,448.08$ ). At the same time, total average cost per nursing student per year in NTS Colombo was Rs. 508,381.44

It was revealed that at NTS Colombo there were 491 Students while NTS Vavuniya had only 168 students.

It is recommended to increase the intake capacity of NTS Vavuniya which will reduce the production cost and bring many advantages to the country.

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## Author Profile

**Parimelalagapillai Karthikeyan** received the MSc and MD in Medical Administration from Postgraduate Institute of Medicine, University of Colombo in 2016 and 2020, respectively. He is an employee of Ministry of Health Sri Lanka and currently undergoing his Post-Doctoral training under the supervision of Deputy Director General (Planning) Dr S Sridharan (Consultant medical administrator), of Ministry of Health, Colombo, Sri Lanka.