

APPENDIX C - NURSING STAFF METHODOLOGY

Staffing Methodology:

Professional nursing staff requirements are determined by looking at the way nursing services are delivered. This takes into account parameters from the theoretical model, the care delivery model and the staffing model.

Theoretical Model:

The theoretical model that ClinCo would be used in establishing the practice environment at the Hospitals is Neumann. We have found that this theorist adapts well to working with trans-cultural professional staff. In the Nursing Service Philosophy and Statement of Purpose the model's theoretical threads are incorporated into operational principles. There are 4 nursing foci: practice, education, research and management.

Care Delivery Model:

Of the 3 basic care delivery models the one used at the TCI Hospitals is called a primary assignment method. This really is a modification of primary nursing. We have found that pure primary nursing where one nurse is ultimately responsible for the total care of the patient 24 hours a day throughout the patients care is difficult to operationalise. With primary assignment one nurse is responsible for directing the care of the patient during the shift. Skill mix of staff has been debated and discussed for years. Research has shown that as the percentage of RN's to other staff decreases negative outcomes increase. These undesirable outcomes include falls, medication errors, decubitus ulcers, infection rates, patient and family complaints and deaths. In the Hospitals the factors that will affect the skill mix of staff include that it is an inpatient facility, multi-specialty, and that patients are required to be participants in their care. Taking these factors into consideration ClinCo has used an 80/20 staff mix of RN to HCA/NAs on the inpatient unit. Leadership for nursing practice is provided by Patient Care Managers (Matrons) and Charge Nurses. The grades and numbers of the staff have been provided in the staffing plan in Appendix A. As noted earlier, the position descriptions and job titles for the Health Care Assistant/Nursing Assistant roles are to be developed in consultation with the TCIG during the re-employment process.

Staffing Model:

Staffing models attempt to establish a set of patterns for supplying nurses to patient areas based upon predicted workload conditions. Although there currently is a lot of interest in looking at different staffing models and refining their core processes, ClinCo will use the model that uses NHPPD as its main principles works well in a variety of different care environments. Therefore in determining the baseline staffing required for any project ClinCo will use a 5-step process, which is outlined below:

1. Determination of productive and non-productive hours:
 - a. Total hours (productive and non-productive) per FTE

- b. Calculation of non-productive hours per FTE (annual leave, public holidays, education leave, sick leave estimate)
 - c. Calculation of productive hours (total hours – non-productive hours)
2. Assignment of nursing hours per patient day (NHPPD) based on international standards for patient mix.
 3. Determination of patient days: (#beds)(occupancy) = # patient/day x 365 = # patient days/year
 4. Determination of workload hours: (NHPPD) (patient days/per year) = nursing hours per year
 5. Determination of FTE: Nursing hours per year divided by total hours.

At the end of the process is the baseline number of FTE's for the service. The relief FTE's required to provide coverage are then added to the baseline FTE's to provide the Total FTE's

Overall Planning Assumptions

This section provides nursing staffing levels for the operation of the TCI hospitals. A more global approach to staffing methodology is found in the staffing plan for the project. The latter includes other disciplines such as allied health professionals, engineering, patient registration, medical records and management.

The staffing levels are to operate the clinical areas at full capacity. A phased in opening of the hospitals will also have a phased in staffing plan. In this revision to the original staffing plan, staffing for a total of 30 beds on both sites has been provided.

The TCI Hospitals are intended to function as sole entities with supportive links to a tertiary care centre.

Overall Staffing Assumptions

The following staffing assumptions were used based on the current utilisation figures; projected future activity and ITN bed specifications.

1. The Emergency departments on Providenciales and Grand Turk will be open 24/7 days a week and will have on site Medical and Nursing staff. Both sites will be able to treat cases depending on their severity. Providenciales will stabilize and admit secondary cases and stabilise and transfer tertiary cases. The care will be protocol driven with RN's managing the minor cases based on approved guidelines.
2. .At the start it is expected that 30 beds will be set-up, 20 beds on Providenciales and 10 on Grand Turk

3. It is estimated that there will be approximately 1500 acute care admissions at the start increasing to 2,500 at the end of the contract plus an anticipated 1,000 births per year.

4. The ORs will operate 5 days a week (based on actual numbers this may be reduced to 4 days per week or some days may be half days) with staff being on call for emergent cases. Last year there were 500 OR cases in Providenciales and 167 in Grand Turk. This would be a combination of inpatient, day surgery cases and Caesarean sections.

5. The number of visits to the Emergency Departments is estimated to be initially 13,000 -15,000 increasing to 20, 000 - 25,000.

6. The number of outpatient cases will be approximately 20,000 initially increasing to approximately 30,000.

The following plan outlines the nursing staffing to operate the selected clinical areas of both the hospitals. The clinical areas that have been detailed include:

- Emergency Room
- Operating Room
- Medicine
- Surgery (with Step-down Unit)
- Maternity/Paediatrics
- Haemodialysis
- Outpatient Department

In developing the staffing plan for Nursing Services the following assumptions have been made.

1. The FTE (Full time Equivalent) number provided is a gross number and differentiates only between Registered Nurses and /Health Care Assistants/Nursing assistants, Midwives have been noted separately. It is expected that the majority of deliveries will be managed by Midwives.
2. Charge nurses are included within the gross nursing FTE numbers
3. The FTE calculation used is the following
 - 1 FTE 40 hours per week x 52 weeks = 2080 hrs
 - 25 % backfill FTE required to provide relief for vacation, sick time and stats
4. In certain areas, although the volume is not present to justify the staffing numbers, there are certain minimal levels that are required for patient and staff safety.

Emergency Room

The Emergency Department will be open 24 hours/7 days per week and will be able to treat primary cases, stabilise and admit secondary cases and transfer tertiary cases. The number of visits to both Emergency departments was estimated to start at 15,000 and increase to 25,000 per year. In Emergency departments, utilisation patterns are not static. There tend to be peak hours where the number of cases increases with patients waiting to be seen. Staffing also needs to take into consideration that at any time the department must be able to deal with a trauma or accident case. The staffing outlined in the table is considered what would be minimal staffing based on assumptions that there needs to be a certain number of staff on shift to manage the care that patients require.

Operating Room

The Operating Rooms will operate 5 days a week 8 hours a day and be on call for urgent cases. Approximately 400 inpatient cases and 500-Day surgery cases are expected to be completed at the TCI Hospitals. Furthermore, 400 – 800 live births may generate 15-25% caesarean section procedures.

The ITN has suggested that there would be a total of 3 OR's built. Each Operating Room has the capacity to handle 700-900 cases. Initially only one theatre at each site would need to be staffed.

Outpatient Department

The number of Outpatient visits was estimated to be 20,000 visits per year to start increasing to 30,000 over the term of the contract; 30,000 annual visits translate into approximately 120 visits per day. This would require at least 4 clinic areas to be fully operational. Full staffing of these areas as in others would be phased in according to volume increases originally only 2 clinics would be staffed and this is reflected in the staffing plan for the 30 bed start-up.

Medical/Surgical

3 surgical beds and 7 medical beds on Providenciales and a total of 10 mixed beds at Grand Turk. There will also be 2 High dependency beds at Providenciales. The medical unit will provide inpatient care primarily for patients with diabetes, hypertension, and cardiovascular disease.

Maternity/Paediatrics

The ITN has requested that there be 4 LDR's in Providenciales and 2 in Grand Turk; normal newborn nursery with 4 beds in Providenciales and 2 in Grand Turk and 2 Paediatric acute care in Providenciales. It is expected that there will be approximately 400 births at the start of the contract increasing to 800 as the population expands. The care model is primarily midwife based.

Hemodialysis

The ITN asks for 8 dialysis stations to be staffed. It is expected that each station would accommodate 3, 4-hour dialysis runs and that the dialysis unit would be open 6 days a week. This means that each station can accommodate 6 patients (each patient requires 3 runs per week) for a total patient capacity of 48. Currently there are around 17-20 patients on dialysis, the staffing pattern has been provided for 8 stations in the 30-bed configuration. Initially it suggested that the 8-bed station be set-up for 2 runs a day. . At start-up there will be 5 stations at the Providenciales site and 3 stations at the Grand Turk site, with subsequent adjustments based of patient flow and demand.

Staffing Plan for 30 beds (both sites)

UNIT	BEDS	RN/24 hrs	Base FTE	Total FTE	NA/Health Care Asst
Emergency	7/24				
Days		3	6x7x12/40	12.6x 1.25	
Night		3			
Total		6	12.6	16	2
Operating Room	IOR	3	3	4	
	I PACU	3	3	4	
Total		6	6	8	1
GT Unit, 10 mixed	10		5x7x12/40	10.5 x 1.25	
			(staff x days x hours/ hrs per week)	(base FTE x 1.25= Total FTE)	
Days		3			
Nights		2			
Total	10	5	10.5	13	2
Provo Medical Unit	7				
Surgical	3				
Days		3	5x7x12/40	10.5x1.25	
Nights		2			
Total	10	5	10.5	13	1
Maternity/Paed's	10				
Days		2	4x7x12/40	8.4x1.25	
Nights		2			
Total	10	4	8.4	10	2
Midwives			8	10	
Dialysis	8(5&3)stations		4	5	1 (tech)
			4	5	
Outpatients		RN/Clinic	Base FTE	Total FTE	NA/Health

Med/Surg Gynae/Obs		2 2	2 2	5	Care Asst. 2
Total OPD	2 clinics	4	4	5	2
Total beds/staff	30 beds			70 RN 10 MW	11 (1 tech)

* PACU staffing is 1:2