Budget project proposal: intensive palliative care unit

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Executive Summary

The purpose of palliative care is to relieve the suffering of patients with advanced progressive illness and ensure the best quality of life for the patients and their family members. The provision of palliative care services for patients living with or dying from advanced progressive illness is an essential part of the health care system. Palliative care has developed rapidly around the world over the last fifty years to meet the complex and multiple needs of patients with progressive and advanced illnesses (Lee et al., 2017). Palliative medicine is now recognized as a specialty in many developed countries, including Singapore. There are recent trends internationally to extend palliative care not only for cancer patients, but to all patient. Studies had shown that introducing palliative care early during a potentially life-limiting illness and extending the provision of palliative care services which includes develop integrated systems (Beard, 2017). This will help to deliver palliative care in a coordinated manner with involvement of healthcare professionals in primary care.

With the ageing of the population, the number of patients in Singapore who require palliative care will increase. It is essential to structure the health care system to deliver such care efficiently to an increasing number of patients facing progressive illness and disability towards the end of life care. Palliative care services in Singapore have started and developed over the last twenty-five years. It is offered in community hospitals, hospices and at home. Palliative care is increasingly becoming a part of mainstream medicine and

acknowledged as an essential part of the healthcare system. It is important to have specialized trained, dedicated and passionate health care professionals in the palliative care sector. Areas in which improvements can be made include coordination of care, recruitment of manpower, strengthening of capabilities, establishing standards of care, promoting public awareness on end-of-life issues, and leadership to develop the palliative care sector (Leger & Dunham, 2018).

Interventions including early advancing planning, time limited trials, and comfort care consultation, seek to ensure that care at the end of life remains patient-centered and is respectful to the patient and family members' values and preferences (Sebahat, 2018). There is compelling evidence to suggest that when healthcare professionals ensure care for patients with a considerable risk of death, it must remain patient centered which can help lead to reduction in intensity of care during the end of life.

The recommendation is to have intensive palliative care units (IPCUs) which are devoted to providing only palliative care, with special nurses, training, and protocols just like the Intensive Care Unit. The advantages include specialized care, the ability to do certain procedures such as lidocaine or ketamine infusions, and it makes a visible ' home' for palliative care training, research, and donations. A study had shown that palliative care saves money, with typical savings of about US$5000 per case in most hospitals in the United States (Kaushal e al., 2017). Given the aging population, palliative care is a rapidly growing specialty that improves care at a cost the hospital can afford, in every country. There are ways to structure the program and tools to enhance service.

This report explains current opinions, costs and practices about advance strategic planning on the proposed IPCU, and strategic ways of financing the IPCU and hiring employees. The goal is to examine and recommend the proposed IPCU in improving the quality of life, meeting the needs of the community and reduce the suffering for people living with and dying from advanced and progressive illnesses.

Organization/Community Overview

Ng Teng Fong General Hospital (NTFGH) is operate under National University Hospital Singapore Regional System and is situated at the West of Singapore. NTFGH is a 700-bed tertiary hospital, with the intensive care unit (ICU) combines and integrates different conventional sub-specialty ICUs (medical, surgical, cardiac and neurosurgical) and their High Dependency Units (HDU) into one multi-disciplinary ICU. The hospital opened in 2015, purpose is to serve residents living in the West region of Singapore with affordable and quality healthcare. According to Singapore Census, there is an increase in elderly population with low socioeconomic status in the West of Singapore with chronic diseases such as Chronic Obstructive Pulmonary Disease and diabetes (Lee, 2017).

History of the Problem

Patients with advanced cancer and diseases often require complex symptom management. Currently, at NTFGH, the directive was to go all-out to resuscitate a patient, regardless of the patient condition, causing some to die surrounded by machines instead of their families. The integrated ICU are busy most of the time and due to the nature and the seriousness of the

units, there is a strict rule on the number of visitors and limited visiting hours. This resulted in family members unable to meet their loved one for the last time. This has been long issue for NTFGH, and many reviews based on Google search of NTFGH has been negative due to lack of palliative care specialty, and high bills due to waste of resources on end of life care patient. Furthermore, most of the times, the ICU tends to be full, intensive care patients often must wait in the emergency department for a patient to be transferred out before the intensive patient can be admitted to the ICU. This causes delays which resulted in long waiting hours in the emergency room, and significantly increases nursing demands for both ICU and emergency department.

Proposal: Formation of ten beds intensive palliative care unit (IPCU) to be located on the end of the existing integrated ICU. Creation of IPCU would allow patients to move out of the ICU admits end of life care patients with uncontrolled symptoms throughout the trajectory of illness. Patients are uniquely managed by an interdisciplinary team of clinicians who focus on symptom management and advance care planning.

Patients

Patient types that would benefit from these intensive palliative care units (Mercadante, 2018):

1. Patients that are currently have a code status of DNR/DNI that meet guidelines of inpatient hospice-eligibility requirements and needed support in symptom management and end of life care.

2. Patients with late chronic and progressive diseases such as cancer, lung disease, and heart disease. These medical conditions worsen over time and are characterized by episodes of symptom control alternating with exacerbations. This include pain, delirium, constipation, nausea/vomiting, diarrhea, dyspnea, and psychosocial distress, among others.
3. Patients undergoing curative-intent therapies, which may be early in their diagnosis for improved symptom management, such as inpatient management, have intense personal or symptomatic distress, or whose families are in severe distress in managing patient chronic diseases.

Physicians

Physicians have voiced concerns on the lack of quality of care for end of life patients and its family members. Among those concerns are the following the skills levels of nurses on the integrated ICU due to lack of knowledge in palliative care; nurse-patient ratio; and the emotional of staffs while taking care end of life care patients. Other specific concerns are:

1. Critical care physicians feel additional education is needed for nursing staff to include assessment and assist in palliative care such as communicating to the family members and giving monitoring parameters of the end of life care patients.
2. There was a fear of litigation among physicians due to lack of recommendations, laws, and good practices, given the busy environment in the intensive care unit (Leger & Dunham, 2018). Many

physicians claim that management of end of life care seems to be not homogenous across the health care institution.

3. Attending physician site their concerns on the lack of care to their patients, and the staff inability to communicate with the family members due to heavy workload, and often the nurse will be demanded by the intensive care patient.

Staff

All the nurse managers in the intensive care unit agree that a staffing nurse-patient ratio of 1 to 2 would be possible without increasing the current full-time equivalents (FTEs) on the intensive care units (Rais, et al., 2018). There would need specialty nurse in palliative care to assign for these beds without overflowing into the intensive care beds. The request from the nurse managers for their staff would include:

1. Specialize education and job training for nurses in assessment and observation of the end of life care patient.
2. Education in basic knowledge and skills for symptoms management, appropriate techniques of communication, capability in sharing decision-making based on patients' values, goals and preferences
3. Education on spiritual support and managing documented symptoms to support family members and the patient.

Benefits of Developing Intensive Palliative Care Unit

1. Improved patient quality of life
    1. Increased continuity of care due to the same caregivers and staffs show more empathy to the patient

2. Patient satisfaction will be increased and the compliance through consistent guidelines and approaches.
3. Increased observation and assessment for quick relieving interventions for the patient
4. Effective communication to the patient and family members and assist in spiritual support.

2. Improved operating efficiency
    1. Increased and appropriate use of intensive care units by freeing up beds for intensive care patients by eliminating admission and earlier discharge for patients needed palliative care services.
    2. Financial savings from having palliative care beds by reducing unwanted or non-beneficial aggressive, costly care
    3. Increased telemetry monitoring capabilities.
    4. Increased use of the present staff at a higher level of care.
3. Improved physician relationships
    1. Fulfillment of requests by physicians for palliative areas with common or guaranteed staffing patterns.
    2. Physician satisfaction will increase by proving competent, specialized, and quality patient care.
    3. Increased relations with palliative specialists by meeting patient acuity needs.
    4. Serving a larger population of the community and increased loyalty for patient admission to Ng Teng Fong General Hospital.
4. Enhance hospital capacity
    1. The development of ten intensive palliative care beds would help to increase patient flow and allowed increased market share in

chronic disease patient needing palliative care and intensive care patient. Additional intensive palliative beds would free up critical intensive care beds that mostly needed during peak period. This would help the hospital to serve the community, fast admission, and retain patient population. An increase in the number of palliative care patient would occur due to the additional beds available, as well as better quality of care levels.

Initial Investments

10 Monitors $500, 640. 00 (Monitor cost at $50, 064. 00 each)

Rewiring $2, 000. 00

Education $48, 000. 00 (40 hours education * $20. 00 average hourly salary * 60 nurses)

Subtotal $550, 640. 00

Room Rate

Palliative Care Charge $860. 00

Average Room Rate - $469. 00

$ 391. 00 increase per room per day

10 beds at $ 8, 600. 00 (Palliative Care Rate)

10 beds at - $ 4, 690. 00 (Private Room Rate)

$ 3, 910. 00 per day

$3, 910. 00 * 365 = $ 1, 427, 150. 00 increased revenue per year

Salary Benefits

The fixed costs of a Nurse leaders such as managers, clinical educator, administrator, and minimum staffing ratio are the same for all units, so it does not influence salary cost (Chen et al., 2016).

Intensive Care Unit cost per patient day [Nurses and health providers fess]: $4, 680. 00 per day

(Without the intervention of specialist)

Intensive Palliative Care Unit cost per patient day $4, 550. 00 per day

(Without the intervention of specialist/physician)

Salary Savings $130. 00* (Estimated) per day Savings

10 patient beds per day $1300. 00 (Estimated) per day Savings

Decreased expenses from salary (estimated)= $1, 300. 00 *365= $474, 500. 00

Reimbursement

Case Mix of Patient Population: 75% Medisave/Medishield

25% Private Care (Self Pay)

1. Medisave/Medishield

1. Pays at flat rate per stay. Savings to be achieved by providing the service at a lower cost to NTFGH would be seen in saved salary dollars.
2. $1, 300. 00/day Salary Savings * 365 days * 75% Payer Mix= $355, 875. 00

2. Private Care
    1. Pays at per diem rate or the percentage of the unit charges rate. Per Diem would not result in loss of charges to organization. Changing from intensive care rate to intensive palliative care rate equal $540. 00 loss per day
    2. (Private room rate for Intensive Care Unit is $1, 400. 00 per day) minus (Private room rate for Intensive Palliative Care Unit is $860. 00 per day)
    3. It is a loss of $540. 00 ($1, 400. 00 – $860. 00) per day from private payee.
    4. $540. 00 loss per day * 10 beds * 365 days * 25% Payer Mix =

($492, 750. 00) [Overall loss from private care]

Impact of Reimbursement: $492, 750. 00 Loss

- $355, 875. 00 Savings

($136, 875. 00) Loss per year to Organization

Total Financial Impact Initial Investment ($550, 640. 00)

+ Loss Revenue (from Reimbursement)) ($136, 875. 00)

Total Loss: ($687, 515. 00)

Net Program Benefits $1, 427, 150. 00 (Increased revenue per year from room rate)

+ $ 474, 500. 00 (Decrease in salary expenses)

$ 1, 901, 650. 00 (Total Savings/ Increased Revenue)

1 st Year = Revenue of ($1, 901, 650. 00 – $687, 515. 00) = $1, 214, 135. 00

After first year= Revenue of (IPCU bed rate – Nurses and health care provider salary – Maintenance fee- Supplies and Equipment) [Shown in Table 1]

Table 1: Estimated Budget Sheet for Intensive Palliative Care Unit

	After First Year
IPCU bed rate	$860. 00 *10 beds*365days = $3, 139, 00. 00
Nurses and health care provider salary	$4, 550. 00 *365days= ($2, 025, 750. 00)

Maintainence Fee	($79, 930. 80)
Supplies and Equipments	($800, 000. 00)
Total (Net Revenue)	$233, 319. 20

Admission Criteria

Admission to Intensive Palliative Care Unit will be based on the following criteria:

1. The acuity status of the patient based upon the patient classification system.
2. The technology required for monitoring the patient.
3. The needs of the patient requiring the following:
    1. Ongoing observation and assessment
    2. Monitoring of vital signs.
    3. Administrative and monitoring of intravenous drips and medications such as morphine.

Return on Investment

Table 2: Intensive Palliative Care Costs (Conservative Estimate), based on Jurong Health Annual Budget Report Fiscal Year

2017/2018 (NTFGH Annual Budget Report, 2018)

Maintenance Staff Support	$8, 000. 00
Nurses Salary	$352, 000. 00
Supplies	$49, 900. 00
Total Cost	$409, 900. 00
Total cost per patient bed	$40, 990. 00
Net Program benefit	(Increased revenue per year from room rate + Decrease in salary expenses) $1, 427, 150. 00 + $ 474, 500. 00 = $ 1, 901, 650. 00

Table 3: Intensive Palliative Care Costs (Conservative Estimate)

Reasoning, and calculation for Return of Investment (ROI)

Element of Analysis	Measure(s) or Values	Description or Inclusions
Costs (denominator)	$1, 097, 415. 00total: $687, 515. 00 in capital costs; $100, 000. 00 to $136, 875. 00 per year in operational costs $352, 000. 00 Nurses IPCU Salary	Workstations and printers, software, network, leadership, and training (costs and employees that is paid and used by IPCU) [Not shared with other departments/units]

Returns (numerator)	$1, 901, 650. 00	Improved workflow (staff and resource savings); decreased length of stay; streamlined workflow; improved information access for patients at time of discharge; decreased radiological utilization; and decreased intensive

		critical care
Prospective Reimbursement Rate (cost-to-charge ratio)	75%	From State Insurance: Medisave, Medishield and Private Insurance
Live date (returns)	First day of the month following activation of the intervention	This is the date when they started counting the number of cost-saving events and calculating the associated cost

		savings.
Live date (start of calculating operational costs)	When the intensive palliative care unit open	This is the date when the practice began to accrue operational costs.

Net Inititative Benefits Costs X 100 = $ 1 , 901 , 650 $ 1 , 097 , 415 = 1 . 7328 ROI or ROI (%) of 173 . 28

According to Drummond, et al. (2015), the cost of replacing an RN is between 75% to 125% of the RN’s annual salary. These figures take into account costs related to recruitment, replacement through overtime, employee orientation, lost productivity, and customer satisfaction. The ROI was calculated with this information based on comparing the traditional cost of intensive care unit in NTFGH. A 100% of annual salary was used for calculating the savings related to salaries. Given the standard of salaries for ten intensive critical care nurses to run IPCU at estimated $35, 200. 00 average, it bring the total cost to an estimated costs of $1, 097, 415. 00 inclusive of initial investments and other capital costs. The ROI was then calculated based on the net program benefits of $1, 901, 650. 00 and program costs of $1, 097, 415. 00. The net program benefits divided by

program costs furnishes a 1. 7328 ROI or ROI (%) of 173. 28. However, these benefits provide a conservative estimate.

Conclusion

The attending physician will retain authority and responsibility for the admission, transfer, and discharge for the patient except where special problems are designated to the care of specialist or consultants. The leadership of palliative care unit will be by the nurse managers in intensive care units will have responsibility for the 10 intensive palliative care beds. The integration of palliative care as a vital component to critical and end-of-life care has been endorsed by professional critical care societies such as the National Academy of Medicine (Lee et al., 2017). With the intensive palliative care unit, it will help to facilitate the increased care of the complex chronic disease patient with medical treatment is infertile and require continuous observation, assessment but not requiring intensive critical care (Rothschild, 2016). With the intensive palliative care unit, the hospital can strive to deliver safe, effective, quality care to end of life care patient; participate in collaborative interdisciplinary healthcare teams; and maintain a competent, highly trained nursing staff to provide acute care that utilizes the nursing process (NTFGH mission, 2018).

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