

❖ ORIGINAL RESEARCH ❖

# *Who provides nursing services in Cambodian hospitals?*

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### Who provides nursing services in Cambodian hospitals?

In Cambodia, the number of nurses is insufficient and details of nursing services are unknown and undocumented. This research explored who provides nursing service activities in Cambodia. The study was conducted at nine hospitals in Cambodia. Findings indicate that non-invasive medical care such as vital signs taking was designated to nurses. In performing more complex medical interventions, nurses shared the tasks with medical doctors. Conversely, simpler nursing tasks, including maintaining bedside environment/hygiene and supporting patient activities, tasks were shared by nurses with patients' family. This study elucidated an optimal personnel mix and task shared between nurses, doctors and patients' families. There are important implications for nursing legislation related to streamlining the production of nurses to provide an adequate and qualified nursing service in Cambodia.

**Key words:** health manpower, nurse's practice patterns, nursing legislation, nursing service, nursing staff.

## INTRODUCTION

It is widely demonstrated that the quality and quantity of health-care professional largely determines the performance of a health system in general.<sup>1–3</sup> Among the health service providers, nurses constitute the single largest professional entity. Assurance of the quality and quantity of nurses positively impacts medical outputs.<sup>1,4</sup>

However, the number of health service providers, particularly nurses, is insufficient around the world, especially in developing countries. In absolute terms, the greatest shortage exists in Southeast Asia. Among 11 countries in Asia, six face critical human resource shortages, thus 50% increase of the number of health service providers was recommended by the World Health Organization (WHO) in 2006.<sup>5</sup> The shortage of doctors affects the roles and responsibilities of nurses and often results in the shifting of medical interventions from medical doctors to nurses.

Countries in Southeast Asia are making vigorous efforts to develop health-care professionals and to improve in-service training. But the current status of health-care professional, particularly in terms of which categories of health service providers are providing which health-related tasks, remains largely unknown and undocumented. This lack of knowledge base poses a barrier to creating effective domestic policies as well as identifying external support regarding the development of health-care professionals. Responding to the Association of South East Asian Nations Mutual Recognition of health professionals by 2015, a legislative framework on health-care professional is in development in some countries. Such legislation needs to reflect the actual status of personnel and skill mixes adopted de facto in each country.<sup>6–10</sup>

Cambodia is one of the Southeast Asian countries that faces health-care professionals shortage in addition to undocumented personnel and skill mixes. *The World Health Report* issued by the WHO in 2006 identified 57 countries with critical shortage of health service providers, with a benchmark of 2.28 per 1000 population health service providers, including doctors, nurses and midwives.<sup>5</sup> Cambodia was classified as one of them, with 1.1 health service providers per 1000 people.<sup>5,11</sup>

This paper is the report of a descriptive study that explored who provides specific nursing service tasks in a selection of national hospitals and provincial referral hospitals in Cambodia. The research highlights actual tasks of nurses and has the potential to contribute further insight to the current legislative streamlining of Cambodian nursing personnel.

## METHODS

### Setting and Sample

The study was conducted from February to March 2011 at nine hospitals (five national hospitals in Phnom Penh and four provincial referral hospitals). The hospitals as the setting for data collection were selected by convenience sampling method. All of the provincial referral hospitals were level three Complementary Package of Activities (CPA-3). These hospitals were selected as examples of the medical institutions that are implementing the standard nursing service in light of the roles and responsibility guidelines for nurses in the country. A standard package of hospital services was introduced in Cambodia and CPA-3 is the highest among three different CPA levels at the provinces, providing inpatient care including emergency

care, major surgery with general anaesthesia, intensive care unit, blood bank and some specialized services such as ophthalmology or otolaryngology. All participating hospitals were general hospitals and function as a teaching and clinical practice sites for nursing students. There are, in total, eight national hospitals and 24 CPA-3 hospitals in Cambodia.<sup>12</sup>

In each of the nine institutions selected, participants included three levels of nurses: general manager (director or vice-directors of Nursing Department), middle manager (chief or deputy-chief nurses of departments) and staff nurse levels. A total of 32 nurses, two to five nurses per institution, were interviewed as a group by researchers. Ten were general managers, 14 were middle-levelled managers and eight were staff nurses working for emergency/intensive care unit, outpatient department, operation theatre, and departments of obstetrics and gynaecology, paediatric, psychiatry, surgery and traumatology.

To elucidate providers from different nursing services, a structured questionnaire was created by the research team. The questionnaire was created from the potential nursing tasks derived from three resources. First, the *Guideline for Training New Nursing Staff* published in 2009 by the Japanese Ministry of Health, Labour and Welfare<sup>13</sup>; second, the *Preceptor Clinical Logbook for Guiding and Evaluating the Clinical Practice Skills of Associate Degree Students in Nursing* published in 2009 by the Ministry of Health (MoH), Cambodia<sup>14</sup>; and third from *Prakas on Identification of Role and Responsibilities of Nurses* specified in 2003 by the MoH, Cambodia.<sup>15</sup> In total, 42 potential nursing tasks were selected. Questions inquired about who provided in their hospitals a wide range of different tasks that might have fallen to their roles and responsibilities. The questionnaire identified the categories of health-care professionals or lay persons that provided different patient care and related tasks in the hospitals. The questionnaire was written in English and interviews were conducted in both English and Khmer. Group interviews were managed by research team members comprised of staff of MoH, Cambodian and Japanese researchers.

The 42 potential nursing tasks were categorized into invasive medical interventions, semi-invasive medical interventions, non-invasive medical cares, maintaining bedside/personal hygiene and supports for activities of daily living (ADL) of patients. Invasive medical interventions are those that require disruption of skin or mucosa such as incisions, injections and perfusions. Semi-invasive

medical interventions are those that require insertion of instrument, material or providers' finger(s) into any artificial or natural orifice of patient's body.

## Data Analysis

The data from each interview group were analyzed. Data were analysed by hospitals. Providers of services were categorized as nurses (N), medical doctors (MD), medical staff other than nurses and doctors (MS), non-medical hospital staff (NMS) and family members of patients (F). In case the group specified more than one provider categories for a single task, instead of marking those different provider categories specified, the specified combination of providers was set as a new distinct provider designation.

## Human Subjects

This research was conducted as part of a Japan–Cambodia bilateral cooperation entitled The Project for Strengthening Human Resources Development System of Comedicals in Cambodia funded by Japan International Cooperation Agency (JICA). The research implementation was approved by the MoH, Cambodia and the directors of the subject hospitals. The purpose of the research and their right to decline participation without any personal disadvantages was explained. Oral consent was attained from each participant.

## RESULTS

Characteristics of targeted hospitals and interviewees are shown in Table 1. The patient ratio ranged from 0.5 to 1.5 persons. Three out of five national hospitals surpassed one person per bed, whereas others including all four provincial referral hospitals had less than one.

Different nursing services and their providers are shown in Table 2. Often, in a single institution, more than two providers performed the same service. Therefore, Table 2 also features those combinations such as nurses and MD, nurses and NMS, nurses and F, and NMC and F. The 'others' column depicts the number of hospitals in which more than three provider categories performed a specified task. The NA (not applicable) column indicates the number of hospitals without any valid response on the designation of providers of the task specified.

In performing complex medical tasks, nurses engaged in task sharing with other health-care professionals, especially medical doctors. Among the invasive medical interventions, blood transfusion, vaccinations, suture

**Table 1** Characteristics of participants

Hospital	General managers of nursing	Chief/Deputy chief nurse (ward)	Staff nurse (ward)	Total
A	1	3 (OPD, Obstetrics)	1 (Obstetrics)	5
B	1	2 (OT, ER/ICU)	1 (Surgery)	4
C	2	1 (OT)	1 (OT)	4
D	0	2 (Physical Traumatology)	2 (Traumatology)	4
E	1	1 (Surgery)	0	2
F	1	2 (ICU)	1 (OPD)	4
G	2	1 (Psychiatry)	0	3
H	1	1 (Obstetrics/Gynecology)	1 (Pediatric)	3
I	1	1 (Obstetrics)	1 (Surgery)	3

ER, emergency room; ICU, intensive care unit; OPD, outpatient department; OT, operation theater.

removal and different types of injections were exclusively performed by nurses. Either nurses or medical doctors incised abscesses or sutured small wounds; but, nurses were involved in these tasks in more than half of the hospitals. Tuberculin (Mantoux) test was conducted either by nurses or other health-care professionals. Nurses exclusively performed the semi-invasive medical interventions such as sputa suction and sampling, enema and urinary catheterization or withdrawal. Changing tracheotomy tubes and insertion of stomach tubes were conducted either by nurses or medical doctors, depending on the hospital. It was notable that in one hospital, family members also played a role in inserting nasogastric tubes along with nurses. Non-invasive medical interventions such as taking vital signs and dressing change were almost exclusively performed by nurses, except nasogastric tube feeding in which families also played a critical role.

While providing non-medical nursing tasks, in contrast to complex medical tasks as described in the aforementioned paragraph, nurses shared tasks with family members of patients to a large extent, especially in caring for inpatients. Family members performed bedside/personal hygiene, bath support, change of diapers and oral care, whereas nurses played more prominent roles in cleaning genitalia and streamlining the bedside environment. Non-medical staff, particularly housekeepers, also played a notable role in maintaining bedside hygiene and environment. In the realm of supporting ADL, families almost exclusively assisted with elimination, eating and walking, whereas nurses engaged in activities to enhance sleep, pain relief, move/transfer in hospitals and postural change. Physiotherapists played a major role in joint

exercises to expand range of motion and massage for pain relief. In non-medical nursing tasks, nurses played a supervisory role over the families.

## DISCUSSION

The study identified non-invasive medical practices such as taking vital signs and dressing change to be almost exclusively designated to nurses in national and key referral Cambodian hospitals. In performing more complex medical tasks including invasive and semi-invasive medical interventions, nurses shared the tasks with other health-care professionals, especially medical doctors. Conversely, in providing simpler nursing services, including streamlining bedside environment or hygiene and supporting patients' ADL, nurses shared the tasks with family members of patients. In both complex medical interventions and simpler nursing services, the task demarcation both between nurses and doctors and nurses and family member of patients followed general principles. In the former case, nurses were almost exclusively assigned injection tasks, whereas they shared a part of minor surgery tasks such as wound suture and abscess incision with medical doctors. In the latter, they played more roles that required technical knowledge such as cleaning genitalia, facilitating better sleep and postural change mainly to avoid bedsores, whereas families played larger roles in supporting more routine ADL such as eating, walking and elimination.

In Cambodia, a notable shortage of doctors might be necessitating nurses to play more active roles even in invasive medical interventions in hospitals. According to the *World Health Report 2006*<sup>5</sup> that focused on the global

**Table 2** Provider of different nursing services at nine Cambodian hospital

Contents of nursing services		Providers of services											
Category	Contents	N	N and	N and	N	MD	MS	NMS	NMS	F	Others	NA	Total
			MD	NMS	and F				and F				
Invasive medical interventions	Abscess incision	2	3	0	0	4	0	0	0	0	0	0	9
	Blood transfusion	9	0	0	0	0	0	0	0	0	0	0	9
	Intravenous drip injection	9	0	0	0	0	0	0	0	0	0	0	9
	Intradermal injection	9	0	0	0	0	0	0	0	0	0	0	9
	Intramuscular injection	9	0	0	0	0	0	0	0	0	0	0	9
	Removal of sutures	9	0	0	0	0	0	0	0	0	0	0	9
	Subcutaneous injections	9	0	0	0	0	0	0	0	0	0	0	9
	Suturing small wounds	5	3	0	0	1	0	0	0	0	0	0	9
	Tuberculin (Mantoux) test	6	0	0	0	0	3	0	0	0	0	0	9
Semi-invasive medical interventions	Vaccination	9	0	0	0	0	0	0	0	0	0	0	9
	Changing tracheotomy tube	4	0	0	0	4	0	0	0	0	0	1	9
	Collecting sputum for examination	9	0	0	0	0	0	0	0	0	0	0	9
	Enema	9	0	0	0	0	0	0	0	0	0	0	9
	Faecal disimpaction	6	0	0	1	0	0	0	0	0	0	2	9
	Insertion of nasogastric feeding tube	6	1	0	1	0	0	0	0	0	0	1	9
	Insertion of stomach tube	7	0	0	0	1	0	0	0	0	0	1	9
	Insertion of urinary catheter (with balloon)	9	0	0	0	0	0	0	0	0	0	0	9
	Nasal/oral sputa suction	9	0	0	0	0	0	0	0	0	0	0	9
Non-invasive medical cares	Transient urine withdrawal	8	0	0	0	0	0	0	0	0	0	1	9
	Counting respirations	9	0	0	0	0	0	0	0	0	0	0	9
	Disinfection and change gauze dressing	9	0	0	0	0	0	0	0	0	0	0	9
	Measuring pulse rate	9	0	0	0	0	0	0	0	0	0	0	9
	Measuring blood pressure	9	0	0	0	0	0	0	0	0	0	0	9
	Measuring body temperature	9	0	0	0	0	0	0	0	0	0	0	9
	Nasogastric tube feeding <sup>†</sup>	3	0	0	1	0	0	0	0	4	0	1	9
	Oxygen inhalation with mask/cannula	9	0	0	0	0	0	0	0	0	0	0	9
	Maintaining bedside/personal hygiene	Bed bath/support for taking shower <sup>†</sup>	0	0	1	0	0	0	0	0	8	0	0
Changing cloths <sup>†</sup>		0	0	0	4	0	0	0	0	4	1	0	9
Changing diaper <sup>†</sup>		1	0	0	0	0	0	0	1	6	0	1	9
Cleaning genital area		4	0	0	5	0	0	0	0	0	0	0	9
Maintaining bedside hygiene <sup>†</sup>		1	0	2	0	0	0	4	1	1	0	0	9
Mouth-washing and tooth brushing		2	0	0	0	0	0	0	0	6	0	1	9
Streamlining bedside environment <sup>†</sup>		5	0	0	0	0	0	2	0	1	1	0	9

Table 2 Continued

Contents of nursing services		Providers of services											
Category	Contents	N	N and MD	N and NMS	N and F	MD	MS	NMS	NMS and F	F	Others	NA	Total
Supporting activities of daily living	Assisting defecation with bedpan <sup>†</sup>	0	0	0	1	0	0	0	0	8	0	0	9
	Assisting good sleep <sup>†</sup>	3	0	0	1	0	0	0	0	4	0	1	9
	Joint exercise to expand range of motion <sup>†</sup>	0	0	0	0	0	4	0	0	2	1	2	9
	Massage/fomentation for pain relief <sup>†</sup>	2	0	0	1	0	1	0	0	3	2	0	9
	Move/transfer in hospital <sup>†</sup>	3	0	1	1	0	0	1	1	2	0	0	9
	Supporting postural change <sup>†</sup>	5	0	0	0	0	0	0	0	3	0	1	9
	Supporting diet <sup>†</sup>	0	0	0	1	0	0	0	0	8	0	0	9
	Supporting walking <sup>†</sup>	0	0	0	0	0	0	0	0	8	0	1	9
	Washing hair <sup>†</sup>	1	0	0	1	0	0	0	0	6	0	1	9

<sup>†</sup> Contents which were mainly provided by family and supervised by nurses. F, family; MD, medical doctors; MS, medical staff other than nurses and MD; N, Nurse; NA, no valid answer obtained; NMS, non-medical staff; Others, combination of more than three provider categories.

health-care professional, Cambodia had 0.23 doctors and 0.79 nurses per 1000 population as of 2008.<sup>11</sup> Comparing these figures with those of its neighbour states of Lao PDR (doctors 0.59 and nurses 1.03 as of 1996) and Vietnam (doctors 0.53 and nurses 0.56 as of 2001), it is common knowledge that Cambodia has faced a more serious shortage of medical doctors per population than its neighbouring countries. In the conceptual model of personnel mix presented by the WHO, the mix is determined by the volume of work, activity mix, the complexity of the tasks, the necessary skills to perform them and the number of different categories of medical staffs.<sup>9</sup> This study outlined how doctors and nurses shared tasks in major hospitals in Cambodia. However, there is a need to explore the participation of nurses in even more complex medical interventions that are usually considered to be the exclusive roles and responsibilities of doctors.

Participating institutions were not representative of all public medical institutions in Cambodia, but rather represented those at the highest level. They were much better resourced than other referral hospitals with lower Complementary Package of Activities designation including those at district levels. The number of nurses per bed ranging from 0.5 to 1.5 persons is even higher than the

nationwide standard in Japan, which is 0.3 per bed.<sup>16</sup> These figures, however, might have been overestimated because a part of these nurses were not working for clinical services but rather for administrative and public health services such as immunization, environmental sanitation and so on. This was especially so in national hospitals which were heading nationwide health programmes with programme offices located inside their premises.

The present study highlighted the prominence of the role of patients' families in providing nursing service in major Cambodian hospitals. The International Council of Nurses (ICN) defines nursing as 'autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings'.<sup>17</sup> It also stipulates nursing to include the promotion of health, prevention of illness, and the care of ill, disabled and dying people, as well as advocacy, promotion of a safe environment, research and participation in shaping health policy.<sup>17</sup> Importantly, the ICN does not intend to limit the provider of the aforementioned nursing to nurses.

A shortage of nurses certainly is the factor contributing to the task sharing between nurses and families in major Cambodian hospitals. Developing sufficient quantity<sup>1</sup> and

quality<sup>4</sup> of nurses is known to improve population-based health indicators, thus the human resource development of nurses is an urgent national requirement. However, such development takes time and it is difficult to fill the human resources gap in a short period. This reality underscores the importance of in-service training of existing nurses. Also, nurses need to collaborate with other patient care providers including patients' family to ensure the quantity of nursing services required. In this regard, nurses would need to improve their skills to teach and supervise family members in providing non-medical nursing services. The ICN advocates the lifelong learning by nurses,<sup>18</sup> but such learning should include interfacing and networking with the patients' families.

Aside from the manpower shortage of nurses, cultural factors might also be contributing to the observed task sharing between nurses and family members. Kelley *et al.* noted that Cambodian identity resembled one of the family members<sup>19</sup> as in other nations in Southeast Asia. It is natural to assume that ADL supports for Cambodian patients from family members are more preferred to those provided by professionals. A study of the well-being of Cambodian refugees who migrated to the United States<sup>20</sup> demonstrated a significant difference in the perception of health care among them from the western medical model of health-care services. One notable feature was the high value put on the traditional healers even among those who migrated to the United States.<sup>21</sup> A global systematic review of comparative studies on nursing service and patient perception revealed a common lack of congruence of perception between patients and nurses.<sup>22</sup> As such, the expectation for nursing service provided by their family members of Cambodian patients and the characteristics of roles and responsibilities of nurses from the national health system<sup>15</sup> are likely to have led to the type of task sharing between families and nurses the present study demonstrated.

### LIMITATIONS

Major study limitations are the interview representativeness in each hospital and lack of qualitative confirmation of the findings. First, we might have over-generalized the provider specification of different nursing tasks. A patient-by-patient task recording, for example, might provide more detailed realities on the providers of nursing services in the hospitals. A task-by-task recording is another option, though these arrangements could be burdensome to the hospitals. Second, in each hospital, the interviewee group

did not necessarily represent all hospital departments, though general managers of nursing were included in most hospitals and provided the overview across different departments. Third, the study lacks the observational confirmation of each nursing services. The provider specification was orally done by the groups of nurses interviewed without direct observation by the research team.

### SUMMARY

This study highlights two important implications of the nursing legislation streamlining in Cambodia that begun in 1993 after the civil war. First, in addressing the optimal personnel mix and task sharing between doctors and nurses, it is necessary to develop the nursing legislation in harmony with the medical legislation that stipulates the roles and responsibilities of medical doctors. Nursing legislation alone will fail to address the task sharing between doctors and nurses in providing medical services in Cambodian hospitals, particularly because there is a thick layer of task sharing between these two job categories even in performing invasive medical interventions. Second, the nursing legislation ought to encompass how nurses should supervise unqualified service providers such as patients' family rather than excluding them from providing non-medical nursing tasks in hospitals. If the legislation becomes too restrictive in determining the providers of nursing service, it will effectively prevent necessary quantities of non-medical nursing services from being provided in Cambodian hospitals.

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### DISCLOSURE

The authors declare no conflict of interest.

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