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Triage in Health Department of Western Australia accident and emergency departments

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Triage in Health Department of Western Australia Accident and Emergency Departments

By

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Abstract

A survey of triage systems used in Health Department of Western Australia accident and emergency departments was undertaken to examine differences in practices between departments with and without designated triage nurses (TNs). One questionnaire surveyed 93 nurses in seven departments with TNs, a similar second questionnaire surveyed 89 nurses in 16 departments without TNs, and a third questionnaire was used in a structured telephone interview of receptionists in hospitals without TNs. Data were analysed using frequencies, percentages, means, standard deviations and ranges with common themes identified for open ended questions. The study was guided by Donabedian's systems evaluation model. The structures and processes of triage within each department were examined in relation to the outcome standards recommended by the Australian Council on Healthcare Standards. The study results revealed that triage nurses were employed in all departments where patient attendances exceeded 300 per week and nursing staff coverage in the department was higher than five per day. Three departments had introduced triage on weekends only, and these departments had the lowest nurse-patient ratio of one nurse per day to 74 patients per week. The highest nurse-patient ratio was in departments with TNs (1-35). Conclusions drawn from the findings suggest that when receptionists are the first person to see patients, they triage patients using an unsatisfactory two category priority system. The average waiting time to see nursing staff is too long in departments without TNs, 7.6 minutes, as compared to 3.7 minutes in department with TNs. Nursing staff perceived that

triage systems could be improved by having only experienced staff as the triageur. The surveillance of patients entering the department is unsatisfactory as 81% of departments without TNs and 43% of departments with TNs are unable to provide nurse surveillance. The surveillance of the waiting room is similarly unsatisfactory in many departments. All triage areas are inadequate, as facilities for private conversation, hand washing and physical assessment are not always available. The majority of departments without TNs do not have a satisfactory triage priority category system in place. The average time taken by nursing staff to triage patients is an acceptable 3.2 minutes in departments with TNs, and 5.3 minutes in departments without TNs. The practice of redirecting patients away from the department could compromise patient safety as patients are redirected away from most departments by any level of staff employed in the department, without any written documentation kept or any written criteria for the redirection of these non-urgent patients. The practice of ordering investigations and treating minor problems without referring to a doctor could also compromise patient safety, as most departments do not have written policies and guidelines to cover this practice. Most departments offer an inadequate triage training program of preceptoring only. Recommendations are focused on the reviewing of existing triage practices to comply with the standards identified.

Declaration

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signature .... 

Date ..... 12-1-96 .....

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TABLE OF CONTENTS

LIST OF TABLES

TABLE **Page**

TABLE **Page**

LIST OF FIGURES

CHAPTER ONE

Introduction

This study investigated the practice of triage in accident and emergency departments using a systems evaluation model. The staffing of the department, the number of patient attendances, the organisation of services, and the triage practices within each department were examined. This information provided an understanding of present triage systems and was used as a basis for recommendations for the development of a formal triage system.

In the accident and emergency department of a hospital, triage is the prioritisation process applied by a staff member on the arrival of a patient. The process ensures that the patient in greatest need of treatment will receive care more urgently than someone who can wait a little longer without any detriment to their condition. The term triageur is used to identify the person who is responsible for making this decision. The triageur is responsible for prioritising a patient according to the need for care and for determining the most appropriate place for that care to be given. Thus the aims of triage are to ensure that immediate care will be given to the patient who is seriously ill or injured, to regulate patient flow within the department, to initiate care if necessary and to provide patient education and information if required (Rice & Abel, 1992). The severity of the problem and the facilities available will affect the decision of the triageur. Rice and Abel reported that trained triage nurses have proved to be "efficient and cost effective" (p. 69). Therefore, it is assumed

that a more reliable and efficient service can be demonstrated by having a formal system in which a designated nurse performs triage, using written goals, objectives, guidelines and priority categories for prioritising patient care.

Background

Triage is a term derived from the French word "trier" meaning to sort or select. The concept of triage grew from war time army practice and the limitations of treatment resources where most resources were directed towards those capable of returning to battle. This progressed to a system of accomplishing the "greatest good for the greatest number" (Rice & Abel, 1992, p. 67) with the largest rate of salvage resulting from classifying injuries into a system of priority order (Rund, 1986).

The current practice of using triage in hospital accident and emergency departments was first introduced in the 1960's in the United States of America (USA) (Rice & Abel, 1992), in the 1970's in Australia (Pink, 1977) and the mid 1980's in the United Kingdom (UK) (Blythin, 1988a). Triage was introduced to improve the medical care given when patient attendance figures increased. However, Fitzgerald (1988) contends that most hospitals in Australia have been slow to adopt the principles of the concept. To date there is no recording of how many Australian hospitals have adopted the process of triage.

Triage systems are said to vary widely. Thomas and Dains (as cited in Rice & Abel, 1992) identified the following three triage systems as common:

1. The traffic director: is a system whereby a non professional person uses the chief complaint of the patient for determining if they need urgent attention, and then directing them to either the treatment or waiting room.

2. Spot checks: where a doctor or a nurse performs a limited assessment of the chief complaint to determine if immediate, urgent or delayed treatment is required.

3. Comprehensive systems: where a registered nurse using protocols and procedures completes a thorough assessment and the patient is prioritised into a more defined category system. Planned reassessment of patients in the waiting room takes place and documentation is systematic. (p. 67).

Although these systems have been described by Thomas and Dains, there has been no research documented comparing differences or commonalities in the way they are actually implemented. Most studies of triage have been directed towards either identifying the person most appropriate for the role of triageur (Fitzgerald, 1988; Zwicke, Bobzien & Wagner, 1982) or patient satisfaction with the introduction of triage (Bailey, Hallam & Hurst, 1987; George, Read et al., 1992) or reduction in waiting times when using triage systems (Mallett & Woolwich, 1990). Following a short trial of implementing a triage system into a department in the UK Grose (1988) found that information on other systems would have been beneficial. As a result of this, Rock and Pledge (1991) conducted a survey of all accident and emergency departments in the UK to find out which ones has a formal triage system in place. They then did a more in-depth survey of some departments of a similar size to their own to find out more about the triage systems which were

in place. Purnell (1991) conducted a study in the USA to find out the characteristics of existing triage systems within five states. These are the only two studies that have looked at factors involved in triage systems across a number of hospitals. Neither study looked at the factors that could influence the person responsible for triage, for example, the person having first contact with the patient. Both studies surveyed systems where triage nurses were already employed within the department.

Most emergency departments have some form of triage, with the triage role being filled by a variety of personnel from clerk to physician (Yates, 1987). Traditionally, the staff member who has first contact with the patient makes triage decisions. Fitzgerald (1988) states that "the skill of the triageur is the common denominator for a successful triage system" (p. 42). He also contends that the skills necessary may depend on the options of services and treatment available. When patients see a receptionist before professional staff, decisions about their care could be delayed to the detriment of the patient's condition. Studies have indicated that the most appropriate person for patient triage is a nurse (Albin, Wassertheil-Smoller, Jacobsen & Bell, 1977; Fitzgerald, 1988; Zwicke et al., 1982). When the triageur is a nurse, the process is known as nursing triage. Blythin (1988a) contends that nursing triage ensures meaningful assessment of all patients arriving at the accident and emergency department.

Triage has traditionally been introduced into accident and emergency departments where patient attendances have increased resulting in longer waiting times. However, the Australian Council on Healthcare Standards (1993) suggests there is a need for *all* patients to be triaged, by a member of

the registered nursing staff, before patient identification details are obtained. Immediate assessment of patients entering emergency departments has also been recommended by The Department of Health in the UK (Porter, 1993) and in the USA, by The Joint Commission on Accreditation of Healthcare Organisations (Rice & Abel, 1992). In the USA it is also recommended that triage is conducted by suitably trained personnel using established guidelines (Rice & Abel, 1992). This standard should apply to all accident and emergency departments. The present study was an attempt to establish current triage practices, in both large and small hospitals within Western Australia, and establish the influences of staffing, patient attendance and department organisational factors related to the type of triage system in place.

Significance

Although nursing triage has been established in Australian accident and emergency departments with large patient attendance numbers, there is little indication in the literature as to the extent of triage practices in departments with smaller attendances. There is also little to indicate whether policies and guidelines are used when triaging. Baskin (1990) suggests that Western Australian country nurses traditionally triaged patients by deciding whether immediate or delayed treatment is required, and they used subjective assessments when prioritising care, based upon their knowledge and experience, without written or directed criteria. This is an unstructured system and as Wilson (1988) suggests, no emergency department can operate effectively without guidelines and definite priorities, as guidelines assist in clinical decisions and provide protection for staff. It is therefore important that a

structured, formal system of triage be developed using guidelines and priority categories. This study will help in the process of developing such guidelines by providing baseline data on current practices.

Purpose

The purpose of this study was to identify triage systems currently in place in accident and emergency departments in Western Australia. Staffing profiles, the number of patient attendances, the organisation of services, and the triage practices within each department were examined. Analysis of the data generated by this study provided an understanding of how triage is currently practised, and identified the commonalities and peculiarities of present systems. This information provided the basis for recommendations regarding structured, formal triage systems. This will assist in meeting the requirements of the Australian Council on Healthcare Standards and thus ensure consistency in the standard of care given to patients in relation to triage.

Research Question

How is the process of triage currently practised in accident and emergency departments within hospitals of the Health Department of Western Australia where designated triage nurses are employed and those departments where they are not?

In order to investigate this question the following subsidiary questions were examined.

Subsidiary questions

What are the differences in accident and emergency departments where designated triage nurses are employed and those where they are not, in relation to the following:

1. Staffing levels.
2. Number of patient attendances.
3. Organisation of services, specifically, the location of the triageur and the facilities available for triaging patients.
4. Practices within the department, including the person performing triage, patient waiting times to see a nurse, basis for triage decisions, the use of formal triage categories, written criteria for redirecting non-urgent patients away from the department, written information given to patients when they are redirected away from the department, the average time taken to triage, investigations and treatments that may be ordered by nursing staff, documentation recorded by the triage nurse and practices specific to departments with designated triage nurses.
5. The preparation of triage nurses, including training and experience.

Definition of Terms

The conceptual and operational definitions of this study are:

Triage - the process by which staff members prioritise patients arriving in an accident and emergency department of a hospital, according to the urgency of their condition, and designate the most appropriate place to provide for their needs.

Triage system - the structures in place in an accident and emergency department that provide for the process of triage to be accomplished.

Triageur - the person who triages patients.

Nursing triage - a registered nurse is the triageur and is the first person to have contact with the patient on arrival in the department.

Designated Triage Nurse (TN) - a nurse employed specifically by a department to perform the duties of a triageur.

Clinical Nurse Specialist (CNS) - a Level Three nurse currently registered with the Western Australian Nurses Board, who has at least five years experience since graduating and has gained extra experience and knowledge in accident and emergency nursing. Appointment to this position is based on merit.

Clinical Nurse (CN) - a Level Two nurse currently registered with the Western Australian Nurses Board, who has at least three years experience since graduating and has gained extra experience and knowledge in accident and emergency nursing. Appointment to this position is based on merit.

Registered Nurse (RN) - a Level One nurse currently registered with the Western Australian Nurses Board.

Enrolled Nurse (EN) - a nurse currently registered with the Western Australian Nurses Board and practising under the supervision of a registered nurse.

Resident Medical Officer (RMO) - a medical doctor who works within a hospital and is employed by the Health Department of Western Australia.

General Practitioner (GP) - a medical doctor who has a private practice in a surgery separate from the hospital.

Organisation of the Thesis

Chapter One provides an introduction to the study and includes the background, significance and purpose for the research. It also details the question to be researched and the definitions of terms used in the study.

Chapter Two involves a review of literature pertinent to this study. Chapter Three details the conceptual framework used to guide the study and includes literature used to develop this framework. Chapter Four deals with the method used in this study. This chapter includes the method used, the sample, the development of the survey instrument, pilot study employed in testing and validating the instrument, the procedure for data collection, ethical considerations and limitations of the study. Chapter Five includes the findings obtained from the survey conducted. In Chapter Six these findings are discussed and interpreted. Chapter Seven provides a summary of the study, conclusions are drawn and recommendations made for implementing or improving triage systems and for future research.

CHAPTER TWO

Literature Review

The following review of literature identifies the variables involved in the study. It addresses the rationale for triage, the person responsible for triaging patients, activities and functions of the triageur and the organisation of services for triage.

Literature searches for data related to triage in accident and emergency departments were conducted using Medline and CINAHL Databases. Bibliographies from the articles obtained from the literature search and from textbooks were also used to collect more literature. A selection of textbooks were examined to find recommendations regarding the use of triage.

Rationale For Triage

The aim of triage is to ensure appropriate care is efficiently delivered in realistic priority order according to the urgency of the patient's condition (Blythin, 1988a; Gray, 1991; Selvig, 1985). Some authors suggest that triage ensures efficient use is made of appropriate health care facilities and resources, and includes the initiation of appropriate diagnostic measures, the redirection of inappropriate attendances without reference to a doctor, and the provision of education to the public on the correct use of the accident and emergency department (Jones, 1988; Williams, 1992). Also, appropriate first aid, improved health education information and advice is given, appropriate requests for previous notes are made and prompt infection control measures

are initiated (Gray, 1991). In his literature review Fitzgerald (1988) included similar aims and objectives for triage as listed above, but he also added that triage initiates documented assessment and treatment, and provides patient comfort, reassurance and good communication. He stated that triage can operate efficiently without formal structures, however emergency medicine could be better served by the formalisation of such decisions. In his view priority categorisation can also be used for epidemiology and administrative research purposes.

The importance of nursing triage was highlighted by Selvig (1985). He reported the findings of a pilot study undertaken in a community hospital in the USA. This study was conducted over a period of two months to establish the need to introduce a formal triage system. Extra staff were not allocated to be the triageur in this study, patients were triaged when staff were not too busy in the department. Documentation was kept on the severity of conditions and on the patients' comments regarding triage. The practice was for the patients to walk into the waiting room where they were greeted by a non medical person, who then called for nursing assistance when necessary. The study claimed a clinically significant number of patients with urgent conditions were in the waiting room when nursing staff went there to triage them. This caused concern to the staff about non medical personnel seeing patients on arrival in the department and the patients going to the waiting room without being seen by nursing staff first. Staff stated patients' anxieties were relieved when they were triaged. On the basis of the results and recommendations of this study a formal system of triage, with a nurse seeing patients first, was introduced into this department.

A new structured triage system was introduced into another department in the USA after a patient with a serious condition was left for hours before seeing a doctor. Wilson (1988) reported on the evaluation of the new system. Their old system had no written protocols or guidelines for prioritising patient care and relied heavily on the physical assessment skills and "gut feelings" of the triage nurse (p. 55). The new system addressed these deficiencies, and a four category priority system, with time limits by which a patient should receive medical attention, was implemented. An evaluation of the new system was conducted after two months. The time from initiation of triage, to the doctors' evaluation, was logged for one week and it was found that the times allocated to each triage priority category were being maintained. It was concluded that the department operated more effectively with the new triage system, as no patient with a potentially harmful condition, was left waiting too long. Other researchers have also evaluated the introduction of nursing triage. Most have used patient satisfaction and waiting times as the evaluation tool.

Bailey, Hallam and Hurst (1987) considered that other researchers used subjective staff comments for concluding that patient anxiety was reduced and patient satisfaction improved following the introduction of nursing triage systems. Therefore, their UK study was designed to evaluate the patient's own satisfaction before and four weeks after the introduction of a formal nursing triage system. A convenience sample of 400 patients were surveyed by having them complete a questionnaire at their own convenience. The researchers then compared patient satisfaction with the time each patient progressed through the department. They found patient satisfaction and waiting times did improve with the introduction of a formal nursing triage system. However, the

total number of patients seen in the department within the period of the study or the length of time over which the study was conducted, were not reported.

In another UK study which was conducted over six days, Mallett and Woolwich (1990) looked at waiting times of 902 patients (87.7% of the total number of attendances) following the introduction of a triage system. The triageurs were mostly qualified nursing staff during the day and receptionists during the night. When seen by nursing staff all patients were assessed within 11 minutes of arrival. The researchers expressed concern that receptionists saw patients first at a time when the majority of patients requiring urgent care were attending the department. They compared their results with an earlier study completed within their hospital. From this comparison they concluded that there was a shorter waiting period to see a health care professional than had occurred previously. However, there was a difference in the health care professional seen in the comparison, as the earlier data recording was taken on seeing a doctor, not a nurse, and was obtained two years previously. Another problem with their comparison was that the previous study was undertaken in an old department without triage, on a different site, and with 25% less attendances. This comparison leaves their interpretation open to question.

George, Read et al.'s (1992) study (see also Read et al. 1992) included clinical urgency, patient waiting times and patient satisfaction in relation to an informal triage system currently in place and compared this with the trial of a new formal triage system. George, Read et al.'s study involved implementing a formal triage system within one UK department over certain days within a six week time limit. They compared a total of 5,954 patients divided into two

groups, one using a formal system (2,515 of which only 1213 were assessed by the triage nurse) and the other using the system already in place within the department (2,522). The study examined the time in the department before each patient saw a doctor, the clinical urgency assigned prospectively and retrospectively and a retrospective postal questionnaire was sent to 980 patients to measure patient satisfaction. The method of sample selection was not given. There was a significant reduction in the reported anxiety due to pain, within the formal triage group. However, the findings stated that they found formal triage by a nurse did not benefit patient waiting times for the more urgent patients or increase patient satisfaction when compared with informal triage systems. In a critique of the study, St George (1992) questioned why only 48% of patients were assessed during the triage periods of the study. In reply, Read et al. (1992) explained that this was inevitable when the triage nurse was away to cover meal breaks for other staff or was attending inservice education or emergency calls. This, however, could have biased the study. The department where the study took place had already had a triage system in place for five years and had trained and experienced nursing staff as the triageur. However, in answering critiques of the study, George, Westlake et al. (1992, p. 1379) stated this "informal assessment is undocumented, intuitive, and dynamic". Following much criticism, they stated that queuing problems after triage were the cause of delays rather than the process itself, but they did not clarify what these problems were (George, Westlake et al. 1992, p. 1379). In 1993, George, Read and Williams, again stated that the study concluded formal nursing triage did not decrease waiting times. However, delays following triage do not mean that it was the triage process that caused the

delay.

To identify causes of delay, Saunders (1987) studied the movement of 1,568 patients through an emergency department in the USA. Patients saw receptionists first and then the triage nurse. Patients with the least severe problems had the longest delays in both areas. Longer delays were experienced while waiting for a room in which to be treated and then longer delays occurred again waiting for a doctor. Although not commented on by the researcher, the study shows that the receptionist was the triageur, as the receptionists sent the patients in need of the most urgent care through to the triage nurse faster than they sent patients requiring the least care. Following publication of Saunder's study, Dickinson (1988) reported that the problem of clerical staff having the responsibility of making medical decisions was overcome in one Canadian emergency department, by redesigning the department to allow initial patient contact to be made by the triage nurse and not by clerical staff.

The Triageur

From the comments made in the studies cited above, there is concern regarding receptionists being used for patient triage. Jones (1988) suggested that where triage is still the duty of the receptionist, a two category priority system applies, that is, those patients collapsing or bleeding at reception and the remainder of patients. Receptionist screening means that priority for treatment is outside the hands of trained personnel and that waiting rooms are not supervised.

Research has been conducted comparing nurses triage decisions with

retrospective priority categories given by doctors. Zwicke, Bobzien and Wagner (1982) conducted a prospective study of 100 patients over two months, in a hospital in the USA. They contended that previous retrospective studies which involved examining patient records by comparing the final diagnosis to the nurse's triage decision, could have been biased by the fact that physicians and nurses worked from a different data base (Albin et al., 1977; Willis 1979). Therefore, in their study both physicians and nurses gave each patient a priority rating, assigned an appropriate care provider, and recommended investigations they thought would be ordered. Physicians were used as observers of nurse triage and they also asked additional questions of the patients if necessary. The accuracy of both the nurses' and the physicians' triage decisions was established by interviewing the treating physician after the patient was discharged from the department. It was found that experienced nurses were accurate in their triage decisions with a small proportion stating a higher degree of patient priority than the physician. Agreement of 81% was reached on the priority rating and 90% for the care provider that was ordered for each patient. However, when compared to the treating physicians, nurses' priority rating and assignment of care provider was accurate 94% of the time. This was higher than the percentage agreements obtained by Albin et al. (80%) and Willis (88%). In Zwicke et al.'s study an agreement of 95-96% was reached on the investigations that would have been ordered for each patient. Albin et al., Willis, and Zwicke et al., all found that nurses tended to place patients in a higher priority order than the doctors. This lends credence to the notion that experienced nurses can be safe in making triage decisions and ordering investigations. However, one concern not commented on in Zwicke et

al.'s study was the fact that although mean waiting time for triage was 7 minutes, the range was from 0 to 43 minutes. In this department, patients were registered by clerical staff before triage and those requiring urgent care were identified at this point. Therefore, the initial decision makers regarding urgency were non medical personnel.

In their study cited above George, Read et al. (1992) also examined the priority category assigned by nurses and compared this with one given retrospectively by doctors using clinical case notes. They found that nurses gave higher priority than the doctors. In a pilot study, prior to this main study, they commented that the doctors' rating was different to the nurses', as on presentation to a nurse, the patients were in a shocked and anxious condition and doctors had the benefit of all retrospective patient data (Read et al., 1992). However, they did not comment on the fact that over 50% of cases allocated as urgent by the doctors were classified in lower categories by nursing staff. In view of the results obtained in the previous studies, cited above, some discrepancies are evident. The highest rate of agreement was in the prospective study by Zwicke et al., where both the doctor and the nurse had similar conditions on which to base their evaluations. Therefore, retrospective studies may not be as accurate as prospective studies. Porter (1992) commented on George, Read et al.s' (1992) findings and interpreted that these occurred as a result of poor communication between doctors and nurses. Porter stated that before drawing up guidelines for urgency categories within their department, communication between doctors and nurses took place and that monitoring of this triage category system regularly shows over 90% accuracy, however, no comment was made on how this triage category

system was assessed.

Another study that investigated the accuracy of nursing triage decisions, investigated decisions made by trained nursing staff and junior, student, nursing staff supported by trained nurses. The study, conducted by Parmar and Hewitt (1985) in the UK, was an evaluation of the efficiency of their triage system which had been in place for less than 12 months. The study was conducted on 530 patients over four weeks to assess the accuracy of triage decisions. They compared the accuracy of the priority given to patients and the nurse's initial assessment with the doctors diagnosis. They found that their junior nurses and UK state enrolled nurses were just as accurate as senior nurses in this particular situation. Although triaging observations, priority category and the area for treatment were documented correctly, there was an error of 26% overall in the assessment given by nurses as to the condition each triageur thought the patient had. This prompted the researchers to comment that guidelines for standard assessment should be introduced, with formal training of all staff. These comments are in agreement with those of Porter (1992). The junior staff in this study were assisted and supported by trained nurses and were involved in triaging ambulance patients only. Therefore, it is a little difficult to assume they would have been as accurate if triaging similar patients as the senior nurses, who triaged ambulatory patients only.

In order to find out the most appropriate person to be the triaguer. Fitzgerald used 100 case studies in 1988, which he sent to 9 hospitals in three Australian states and also to an ambulance training school. Ten personnel from each institution triaged the case studies. He found that ENs, clerical staff

and ambulance officers overestimated urgency. He concluded that clerical staff would be unacceptable to patients as the triageur as they could not give the required reassurance that patients need. He therefore suggested that a system would be dysfunctional with ENs, clerical staff or ambulance officers performing the role of triageur. His statement regarding acceptability is subjective, however, the findings regarding estimation of urgency cannot be disregarded and although the population surveyed was limited it was conducted across a variety of personnel and facilities.

Another study that supports Fitzgerald's assumption that receptionists would be unacceptable as the triageur was conducted by Lewis and Woodside (1992). A patient satisfaction survey was carried out following complaints from the public about a Canadian accident and emergency department. This study was conducted on 200 patients over 24 predetermined days, covering all shifts. They rated patient satisfaction with all personnel in the department on a three point Likert-type scale with open ended questions, and found that receptionists fared the worst, with their attitude being rated as unsatisfactory.

Even though nurses have been shown to be appropriate for the triageur role, it is not known how many hospitals actually employ them in this role or the training required for the role.

Purnell (1993) conducted a random survey of 500 hospitals across the USA, to find out the qualifications and training of triage personnel. Less than 60% had registered nurses exclusively employed in triage, with the majority of the rest using a mixture of registered nurses and licensed practical nurses. The remainder used a mix of registered nurses or other trained personnel of a

lower employment level. Previous experience in emergency work was required by only 9.5% of hospitals with 3 months to 3 years experience reported. Special training was required by 43% of the hospitals and only 34% of these had a specific course. A specific course for patient assessment was required by 13%, the ordering of radiographic and laboratory studies by 3%, an inservice program by 10%, extended orientation by 18% and advanced certificates in emergency, cardiac or trauma care were required by 24%. From an analysis of the location of the hospitals, Purnell concluded recruitment problems in rural areas could have influenced the lack of experience required by some hospitals. Many hospitals reported the need and desire to provide extended and ongoing education in triage. He concluded that more information was required on the current orientation and training programs in place. The activities and functions of the triageur have also been studied.

Activities and Functions of the Triageur

Rausch and Rund, (1981) reported that the activities and functions of the triageur vary depending on the goals of the system implemented by each department. Goals of various departments include the following: all patients should be seen by a trained nurse on arrival and before entering the waiting room, so that no urgent conditions are overlooked (Jones, 1983, 1988; Rock & Pledge, 1991); nursing triage should take place before registration by the receptionist (Bailey et al., 1987; Blythin, 1988b; Selbst, 1990; Selvig, 1985); all patients should be assessed to evaluate the seriousness of their complaint and assigned a priority rating (Blythin, 1988b; Grose, 1988; Jones, 1988; Mallett & Woolwich, 1990; Rock & Pledge, 1991).

Rausch and Rund (1981) studied the accuracy of nurses' clinical judgements in making triage decisions. The study involved 358 patient attendances and was conducted over a 65 hour period in a department in the USA. This study included urgency ratings and predicting the investigations that would be ordered by the doctor. These were then compared with the final patient diagnosis. There was over 80% agreement on conditions, and between 76 - 98% agreement on investigations ordered. These figures are comparable with those of Zwicke et al, (1982) as cited previously. This study also found that the nurses relied more on subjective data in deciding urgency for illnesses and objective data for injury. This was based on the written documentation of the nurse and not on their thought processes for making decisions.

Jones (1990) states that both subjective and objective data are needed for decisions on priority ratings. George (1983) states that the duty of a triage nurse is "a reasonable evaluation of the patient's condition" (p. 113). This evaluation includes the patient's statement of the problem, pertinent past and present history and a rapid visual assessment, taking in the general appearance, vital signs and any special assessment, for example, site of injury or behaviour (Beach, 1981; Blythin, 1988b; Jones, 1988). This initial evaluation should take no longer than 3 to 5 minutes (Blythin, 1983; Nelson, 1983). Written protocols or guidelines for assessment are seen as essential for efficiency within the department (Blythin, 1988b; Parmar & Hewitt, 1985; Willis, 1979; Wilson, 1988).

Estrada (1979) suggests that triage decisions are part of patient care and, although the nurse making that decision is accountable, very little is

documented in most triage systems. Rock and Pledge (1991) surveyed 22 hospitals in the UK and found that information gained during patient triage was recorded on an accident and emergency card or a separate sheet, if at all, with 40% of redirected patients not being documented. Fitzgerald's (1988) study, cited above, concluded that documented categorisation of patients into the same categories in different hospitals was possible and could be used as a tool for research and as a means of ensuring that departmental resources match patient needs.

The most common priority system of triage involves using three categories: immediate, urgent and delay, with coloured stickers or numbers indicating priority rating. Pink (1977) suggested that three categories did not distinguish the middle categories, and recommended four categories. All colour coded systems have red as top priority, yellow the next, with green as the lowest in three category systems, and blue the lowest in four category systems (Gray, 1991; Jones, 1988; Rock & Pledge, 1991; Selvig, 1985; Wilson, 1988).

Priority categories are also used for disaster situations by other emergency services. In mass disaster situations priority categories assigned by emergency services, external to the hospital, can be used by hospitals. When looking at major disasters, Vayer, Ten Eyck and Cowan (1986) suggest that to ensure efficiency of use, coloured tags should only be used in multiple casualty disaster situations if they are currently being used on a daily basis.

Appropriate care can be inadequate with overcrowding of the department by non urgent attendances (Albin, et al. 1977; Blythin, 1988a). Non urgent conditions that could be dealt with in another health care facility,

for example a general practitioner's surgery, have been classed as inappropriate for accident and emergency departments. These inappropriate attendances have been increasing throughout the USA, the UK, New Zealand, Canada and Australia (Fitzgerald, 1988). Figures for inappropriate attendances at accident and emergency departments range from 6% to 80% of total patients seen (Derlet & Nishio, 1990; Fitzgerald, 1988; Holman, 1989; Jones, 1986; Lewis & Bradbury, 1982; Mallett & Woolwich, 1990; Walsh, 1990a). Derlet and Nishio (1990) recommend screening and documentation of all patients by a qualified triage nurse and all inappropriate attendances being given a list of facilities available external to the accident and emergency department. They also recommend that conservative criteria for inappropriate attendances need to be predetermined before patients are redirected away from an emergency department. This is to ensure borderline non-emergency conditions are seen within the department.

Walsh (1990b) suggests that the criteria used in some studies could be subjective, and bias could occur resulting in the high figures of inappropriate attendances obtained. He retrospectively studied a single accident and emergency population of 2,000 patients in the UK, where there was no triage system in place, and found that one in twelve patients left without medical or nursing attention. He states this was a quota sample of one in thirteen patients aged 16-60 years who were discharged home the same day (Walsh 1990a). He discusses reasons for inappropriate attendances (Walsh 1990c) stating that patients have a different set of criteria than staff for judging this. The proportion of patients who left without being seen was very high. This sample was only 3% of the total new attendances for that year, therefore, these figures

need to be placed into context before drawing conclusions from this study.

In their study of 22,390 patients over a 6 month period, in a USA department, Derlet and Nishio (1990) reported that patient documentation was reviewed daily. Those with minor complaints, as determined by their triage evaluation, were not seen in the department and were referred elsewhere with a copy of their triage documentation. Nineteen percent of patients seen were classed as inappropriate attendances and were redirected. The facilities to which the patients were redirected were surveyed to determine the patient's outcome. Of the 98% of patients reviewed, it was found that they suffered no ill effects. Due to this redirection of inappropriate patients, they also found that there was a reduction by 50% in the number of patients triaged as emergency, who would have previously left the department without being seen by a doctor. This finding was made by comparing statistics from the corresponding six months of the previous year. The study was continued over three years with 136,794 patients. The findings reported in 1992 included 21,069 (15%) of presenting patients that were redirected. Patients electing to seek no treatment amounted to 4,635 (22%) of those redirected elsewhere, and minor adverse outcomes were reported in 14 cases (Derlet, Nishio, Cole & Silva, 1992). Not all patients in this study were followed up, however, the large number that were indicate that there were very few patients who were incorrectly redirected, and those that were suffered no long term ill effects. Therefore, redirecting some patients minor problems away from an emergency department is a feasible option not known to cause ill effects.

Yates (1987) surveyed 230 consultants to find out their reactions to the redirecting or treating of minor complaints by nursing staff from a doctors point

of view. They were selected from accident and emergency departments in the UK with over 20,000 new patients annually. Less than half of the respondents stated they would like to introduce this type of system with most of the others stating they did not want nurses interfering with the patient's right to see a doctor. Yates discussed the legal implications of this suggesting that these could be overcome. Thirty three percent of the consultants surveyed wished to introduce a structured nurse triage system, with 28% having an unstructured system at the time. He suggested that better patient management, improved patient satisfaction and better communication would result from changing to a structured nursing triage system, with training programs and refresher courses available to the nurses.

A study conducted by the New South Wales Department of Health (National Health Strategy, 1992) involved 13 hospitals throughout Australia to determine the appropriate place for primary patient care, that is, for those not requiring emergency hospital care. Patients were interviewed to establish their perception of their problem and why they chose to visit a hospital. The urgency and treatment of patients attending and the cost of services were also examined. Fifteen percent of patients were classed as primary care, with the researchers stating this figure was an underestimation. Many patients reported they did not know of another service they could have used. The time of day, perception of the the quality of care and convenience of location were other reasons given for choice of hospital care. The cost of services was estimated and was found to be less in the hospital than in the community. The researchers therefore concluded that setting up primary care clinics within hospitals was an option, with the integration of services between hospital and

community another to be considered. These options were clearly devised with cost in mind. However, with more patients attending emergency departments it is clear that there is a need for patient education and that alternative services should be established to enable hospital staff to redirect them away from these areas.

After identifying the increase in inappropriate patients attending accident and emergency departments, triage systems have been implemented to decrease patient waiting times for the higher priority patients and to improve patient satisfaction. Grose (1988) reported on a trial of triage over ten weeks in a department in the UK. Data were collected before and during the study, on waiting times and the type of priority categories of patients seen. Patients were also asked for suggestions and the staff were interviewed. Problems occurred with privacy for communication between the triageur and the patient. However, overall there was improved communication between nurse, patients and relatives, which resulted in a less hostile environment. The actual figures for these conclusions were not reported. Grose stated that consultation with other hospitals would have helped prior to implementing their system. This consultation was done by Rock and Pledge.

Rock and Pledge (1991) conducted two surveys. The first was to all accident and emergency departments in the UK (344) to elicit which ones had implemented triage, and the second to 22 departments where triage had been implemented. In the second study they found that patients were still triaged by untrained staff in some departments, training was limited, privacy was a problem, over 60% had no written criteria for priority of care and patient priority categorisation ranged from nothing formal to 12 separate categories. They

suggested that information on categories and priorities of care was essential to any triage system.

The only other study to be conducted across many departments, was conducted by Purnell (1991). He conducted a survey of 185 hospitals across five states in the USA, looking at physical facilities, fast track services, patient-classification systems, waiting times and the qualifications, training and skills of triage personnel. He found that 177 hospitals had triage systems in place. The trend was to implement systems only when patient attendance figures increased. Nearly 80% of hospitals surveyed used registered nurses only for triage and only 51% required special training. Fast track systems were found to decrease waiting times. No information was reported on the number of staff employed and how this could affect the system in place.

Organisation of Services

Rice and Abel (1992) state that the organisation of the department should allow the triage nurse observation and access to patients arriving in the department as well as the waiting room, while providing privacy for interviewing. They also regard equipment for universal precautions, first aid, communication and security of critical importance. These were also recommended by Rock and Pledge (1991) following their survey cited above. Two Australian articles have explained how the location of the triage nurse allowed visibility but did not include other aspects of the area or equipment (Nuttall, 1986; Pink, 1977). One UK article explained how they introduced a cubicle to allow privacy (Gray 1991). All factors recommended above have been considered when setting up new departments in the USA (Hoss, 1992;

Weinman, Burki, D'Agostino, Migletz & Kuba, 1993).

Summary

The aims and objectives of triage have been well documented and include that all patients are seen on arrival and assessed for the urgency of their condition in order to be given a priority rating that ensures efficient use of resources and facilities. Registered nurses have been recommended as the most appropriate persons to perform triage. Other personnel are seen as inappropriate and unacceptable in the triage role. Studies have shown that nurses have acceptable accuracy in the priority rating they give to patients when compared to that given by doctors and also when compared retrospectively with the final patient outcome. There is a need for the triage nurse to have experience in accident and emergency work and also to be provided with education specific to the role. Triage by a nurse is important as studies have shown that some patients may wait too long for care if not seen on arrival by trained personnel. Waiting times and patient anxiety are reduced and patient satisfaction is increased with the introduction of formal nursing triage. Written assessment documentation is important with the initial evaluation taking 3 to 5 minutes. Formal categories and priority ratings, as well as written protocols and guidelines for assessment are seen as being essential for all patients. With the increasing use of emergency departments by inappropriate patients, accurate nursing triage and documentation is recommended for those patients redirected elsewhere. Research on the redirection of patients has indicated that this can occur for minor problems without adverse reactions, and that patients need to be educated on the use of

emergency departments. The triage nurse needs to have visibility of patients entering the department and of the waiting room, with patients being seen by them before seeing receptionists. Patient privacy, and the facilities available to the triage nurse, should be taken into consideration when setting up a triage system.

The majority of studies that have been undertaken on triage have only included departments with large attendances with only two studies being conducted across more than one department. The present study included many departments with both large and small attendances. The next chapter discusses the conceptual framework for this study.

CHAPTER THREE

Conceptual Framework

The conceptual framework for this research is based on Donabedian's Systems Evaluation Model. This model was chosen to guide this study, as it provides a framework that allows the structures and processes of triage systems to be analysed in relation to whether or not outcome standards are achieved, for accident and emergency departments within the Health Department of Western Australia.

Donabedian's Systems Evaluation Model

Donabedian formulated an evaluation model in the 1960's to use as a guide in assessing the quality of care given by medical professionals in the USA (Luthert & Robinson, 1993). Donabedian (1985) believed that "quality comprises those attributes of the process of care that contribute to its desired outcome" (p. 450). His approach was to formulate criteria for assessing care and he saw these criteria as pertaining to three separate categories: structure, process and outcome (Donabedian, 1982). Donabedian (1982, 1988) describes structure as referring to the resources used in the provision of care, including the number and qualifications of the personnel, the facilities used in that care and the organisational arrangements under which that care is given. Process refers to the activities that constitute care, that is, what is and what is not done. Direct assessment of the process is necessary to evaluate the outcome. Outcome refers to the consequences to health or to the effectiveness of the care given. In 1985, he stated that outcomes include phenomena that

are relevant to the feasible goals of patient care.

Before an evaluation can take place there must be pre-existing knowledge of the linkage between structure and process, and between process and outcome (Donabedian, 1988). In order to measure quality Donabedian states that it is necessary to develop criteria and standards derived from a sound scientific validated fund of knowledge or the best informed opinion on a particular subject. These criteria and standards can be implicit or explicit, but the advantages of using explicit criteria and standards are that they are developed and specified in advance of the assessment (Donabedian, 1988). When formulating criteria and standards for assessing care Donabedian (1982) suggests that criteria should be accompanied by their own standards. Criteria were defined as "the phenomena that one counts or measures in order to assess the quality of care" and standards were seen as "the precise count or quality that specifies an adequate, acceptable, or optimal level of quality" (p. 8).

Luthert and Robinson (1993) used Donabedian's model as the conceptual base for writing standards of nursing care and Rice and Abel (1992) recommended that triage be evaluated on a structure, process and outcome basis. Donabedian's model is suitable for evaluating triage because it is a structure, process and outcome concept and has been used previously for writing standards of care. Therefore, it was seen as a suitable model to guide this study.

Systems Evaluation Model for Triage

The explicit outcome criteria chosen to evaluate triage systems for this

research are based on the criteria and standards recommended by the Australian Council on Healthcare Standards (1993). These standards and criteria were used because they are the indicators for quality care set down for Australian hospitals. In relation to triage the recommendations include:

1. All patients are triaged immediately on arrival by a registered nurse.

2. The triage area is placed to allow for the surveillance of all patients arriving, including ambulance patients, and for the surveillance of patients in the waiting areas.

3. The triage area is placed to allow for patient privacy.

4. The triage area is equipped with adequate facilities to ensure effective care.

6. Patients are triaged into priority categories with emergency patients taking priority over non-urgent patients.

5. A documented statement of policy and treatment guidelines are readily available to all staff.

7. An adequate medical record is kept for every attendance and all patient visits are recorded.

8. The nursing staff employed have appropriate training and experience.

From these standards and criteria, the structures chosen to be studied include the staffing of the department, staff training and experience, patient attendances, the organisation of services, formal triage categories and the policies and guidelines of each department. The processes chosen to be studied follow on from the structures, and involve what actually occurs during triage, where it takes place, the training program in place and the experience nursing staff actually have prior to triaging (see Figure 1).

STRUCTURE +	PROCESS =	OUTCOME STANDARD
Staffing Patient attendances	Patient seen on arrival	All patients are triaged immediately on arrival by a registered nurse
Organisation of services	Surveillance	All triage areas are placed to allow for all patients arriving in the department and within the waiting areas, to be under constant surveillance
	Privacy	All triage areas allow for patient privacy
	Preparation for patient care and assessment	All triage areas are equipped with adequate facilities to ensure effective care
Formal triage categories	Triage category assigned	All patients are triaged into priority categories with emergencies taking priority over non-urgent patients
Policies and guidelines	Investigations conducted Minor problems treated	All departments have a documented statement of policy and treatment guidelines which is readily available to all staff
	Documentation	Adequate medical records are kept for every patient attendance and all patient visits are recorded
Training and experience	Education program provided Experience	All nursing staff employed have appropriate training and experience

Figure 1. Systems Evaluation Model for Triage in Accident and Emergency Departments.

Brett (1989) suggests that intelligent assumptions can be made about the relationship of process to outcome from explicit criteria, and that unless structure and process relate to outcomes then the value of the system cannot be determined or changed. The structures identified in the model influence how the process of triage is carried out in each accident and emergency department and the identified processes influence whether or not the outcome standards can be achieved. This study obtained information about the structures and processes of current triage systems. This information was then analysed in relation to whether or not the outcome standards were being achieved. Recommendations have been made regarding the processes that need to change in order to achieve the standards for triage recommended by The Australian Council on Healthcare Standards. The following chapter discusses the method used for this study.

CHAPTER FOUR

Method

This study was intended to elicit an accurate portrait of how triage is currently practised within Health Department of Western Australia accident and emergency departments. The structures and processes of triage in departments with TNs and departments without TNs, were examined in relation to staffing, patient attendances, the organisation of services and the practices within the different departments. Therefore a descriptive survey was conducted.

A postal survey was employed due to the distances involved and to ensure anonymity. Although it was originally planned to use only one questionnaire per hospital surveyed, the pilot study showed information was conflicting. Therefore, to obtain as accurate a picture as possible, multiple responses were requested from each department surveyed.

Data were collected using three separate structured questionnaires. One questionnaire (Questionnaire 1) was designed for use in departments employing TNs, another (Questionnaire 2) for use in hospitals without TNs and a third (Questionnaire 3) for telephone interviews of receptionists in departments surveyed. Questionnaire 3 was developed as it was assumed some nursing staff surveyed may not have been aware of the actions of receptionists or the guidelines they use when making triage decisions.

Sample

The purposeful sample was comprised of accident and emergency departments within hospitals administered by the Health Department of Western Australia. Permission to conduct the survey was rejected by one Regional Health Service. The other nine Regional Health Services nominated hospitals where accident and emergency departments had nursing staff on duty within the department 24 hours a day. One department did not return the questionnaire after three reminders. This left a sample population of 23 departments. There were two distinct groups within the population, Group 1 (n = 7) included departments where a TN was employed and the Group 2 (n = 16) included departments that did not employ a TN (see Table 1). Eleven (48%) departments in Group 2 did not have staff employed in accident and emergency exclusively over 24 hours. However, these departments were included in the survey to see if there were any differences between them and those with exclusive 24 hour nursing cover.

In order to obtain the information from each department, nurses and receptionists were surveyed. Nurses, with varying accident and emergency experience and covering all levels of nursing staff within each department, were requested to complete the questionnaire (N = 273). In the large teaching hospitals, it was decided, after consultation with each hospital, that a good representation of each department would be obtained by including only approximately 50% of the staff rostered for duty during the week the questionnaires were distributed within those departments. Two hospitals, with the smallest bed numbers and lowest patient attendances, elected to have only one questionnaire sent. Nurses returning the questionnaires in each

group numbered, 93 in Group 1 (with TN) and 90 in Group 2 (without TN) (see Table 1). One returned questionnaire was eliminated as it was incomplete. Thus a total of 182 questionnaires were completed and returned, and were then included in the final analysis.

In departments where patients were seen by a receptionist prior to seeing a nurse, the receptionist was surveyed by telephone interview (N = 14).

Table 1

Respondents

	Questionnaires		Number of Departments
	Distributed	Returned	
Group 1 With TN	128	93 (72.7%)	7
Group 2 Without TN			
A) Nurse 24 hrs	51	39 (76.5%)	5
B) Without Nurse 24 hrs	94	50 (53.2%)	11
Total	145	89 (61.8%)	16
Total	273	182 (67%)	23

Design

The design used in this study was a questionnaire survey plus telephone interview.

Instrument

Two separate questionnaires were developed for surveying nurses in this study. Rock and Pledge (1988) found that when they used the same questionnaire for departments with triage and for departments without triage, the questionnaire was not completed correctly. Therefore for this survey, it was assumed that the concept of triage was not familiar to all nursing staff working in departments without TNs. Asking questions regarding triage could have confused these respondents, therefore, some questions needed to be expanded to explain what was intended. Questions on the possible introduction of a formal triage system were also included in Questionnaire 2.

Both questionnaires were based on a set of two questionnaires developed by Rock and Pledge (1988) for their survey of major accident and emergency departments in the UK. Permission has been obtained from the authors for use of these questionnaires (see Appendix A). Questions that were used from their survey related to who sees the patient on arrival, and the minimum experience required for triage. Others were reworded to make the questions clearer or to elicit more information including the length of time triage has been practised, the number of patient attendances, whether the patients triaged were ambulant or ambulance patients, if there was a training program for triage, who decides the priority of patient care, if the department used triage priority categories, what triage documentation was recorded, if patients were redirected away from the department, if patients were treated by nursing staff without seeing a doctor first, the location of the triage nurse and the facilities available to the triage person. Questions regarding staff coverage were adapted to allow for local practice. Additional questions, not included in

Rock and Pledge's questionnaires, were added to elicit information on the location of the hospital, bed numbers, the length of time a patient may wait to see a nurse, the average time taken to triage a patient, what methods were used by nurses when making triage decisions, investigations that could be ordered, and the positive and negative aspects of current systems.

Questionnaire 1 (see Appendix B) was developed to gather information from departments where TNs were employed. This questionnaire consisted of three sections:

1. Section A contained questions on bed numbers, patient attendances, staffing and location.

2. Section B contained questions on current practices and organisation of services.

3. Section C contained questions concerning positive and negative aspects of the current system and the experience and level of employment of the respondent.

Questionnaire 2 (see Appendix C) was developed to gather information from departments where there were no TNs employed in the department. This questionnaire was also divided into three sections:

1. Section A was identical to Questionnaire 1 Section A.

2. Section B contained questions on current practices and organisation of services.

3. Section C contained questions concerning the introduction of a TN, improving the current system, positive aspects of the current system, and the experience and level of employment of the respondent .

Questionnaire 3 (see Appendix D), developed for the structured telephone interview of receptionists, consisted of six questions concerning current practices regarding the prioritising and redirection of patients.

Pilot Study

A pilot study was conducted to determine face and content validity of the questionnaires. Questionnaires were distributed to departments within Western Australia, Victoria and Queensland for the pilot study. Departments outside Western Australia were involved in the pilot study as all departments within Western Australia with TNs were to be included in the main survey. A total of 22 questionnaires were distributed to departments with and without TNs, and 21 were returned. The pilot sample consisted of a convenience sample of nurses currently working in seven different accident and emergency departments. Questionnaire 1 was sent to fourteen nurses employed in departments with a TN. Ten of these were employed within one department in Victoria, two were senior nurses in a department in Queensland (one of these was not returned), and the remaining two were CNSs working in separate hospitals in Western Australia who would not be taking part in the main study. Questionnaire 2 was sent to eight nurses who were employed in departments without TNs in Western Australia. Five were from the same department, two were CNs in another department, and the last was a CN in a third department.

Changes to Questionnaires Following the Pilot Study

The revised questionnaires retained the same questions in Section A. The question on the number of nursing staff on duty in the department each shift (Question 3), was reported to have been difficult to answer correctly on the pilot questionnaire, and was revised to include CNs and the total number of nurses on each shift.

Section B of Questionnaire 1 consisted of questions relevant to departments that currently employ a TN. There were 37 questions relating to practices and 5 concerning the organisation of services. Three questions were found to be superfluous and were deleted. Others required changes to be made to either the context or sequencing of questions. Two questions were added relating to the practices in the department. Section C consisted of 4 questions seeking opinions on positive and negative aspects of present triage system. These were retained unchanged. Questions relating to the experience of the respondents and their present level of employment were added to Section C. Thus Questionnaire 1 contained 5 questions in Section A, 41 in Section B, and 7 in Section C.

Section B of Questionnaire 2 consisted of questions relevant to departments without TNs. There were 29 questions relating to their practices and 2 concerning the organisation of services. As in Questionnaire 1, three questions were found to be superfluous and were deleted and another required a change in context. Seven questions relating to practices were added from Questionnaire 1 to allow comparisons to be made. Section C consisted of three questions seeking opinions on the introduction of a TN into their department, one open ended question on improving the present system

and one on the positive aspects of their system. Questions relating to the experience of the respondent and their present level of employment were added to Section C. Thus the final questionnaire contained 5 questions in Section A, 35 in Section B, and 8 in Section C.

Reliability and Validity

The twenty one returned and completed questionnaires were analysed for within group reliability. Responses to Questionnaire 2, from the hospital where the researcher worked, indicated that the senior nurses replied with what *should* happen, whereas the replies of the more junior or less experienced staff indicated what was *actually* happening. Responses to Questionnaire 1, from the other hospital which had received multiple questionnaires, also indicated a difference of opinion between its ten respondents. Information on experience and level of employment had not been requested as part of the questionnaire. These results indicated questionnaires needed to be distributed to nurses with varying experience and to all levels of nurses working within the department of each hospital.

A separate questionnaire (see Appendix E) was devised to establish content validity. Each respondent was asked if each question in the triage questionnaire was relevant for the purpose of the study. Although there were some negative replies, no two respondents answered negatively to the same question. When considered along with the answers to the main questionnaire, most negative replies were in answer to questions that were not applicable to that person's department. For example, categories for delineating the urgency of patient care are used by some departments and not by others.

Two other CNSs reviewed both questionnaires following the changes made after the pilot study was completed. They gave minor suggestions for changes and agreed that all questions in the final version were valid for the purpose of this study.

Procedure

When permission to proceed with the main study was obtained from each hospital, the nominated contact person was asked how many questionnaires would be required, and was then requested to distribute the questionnaires to nurses working in that department. This was to ensure that nurses with a variety of experience and differing levels of employment would be included. Either a Research Nurse or a CNS agreed to distribute the questionnaires and to ensure a variety of experience and differing levels of employed nurses were included. All questionnaires were sent to the nominated person for distribution. They were posted back to the researcher by each individual respondent.

The telephone interviews with receptionists were conducted by the researcher and were obtained while the questionnaires were being distributed and returned from each hospital.

Data Analysis

Frequencies, percentages, means, standard deviations and ranges were obtained using Mystat, and graphs were constructed using Excel. Comments made to open ended questions regarding the positive and negative aspects of the current systems were presented as common themes obtained from

comparing and contrasting the responses. Comparisons within and between the two groups of departments, with and without TNs, was undertaken using descriptive data only. The number of departments was too uneven in the large groups (n = 7 and 16) and too small in the sub groups (n = 4, 3, 5, 5, and 6) for analysis using inferential statistics.

Ethical Considerations

Consent for this study was obtained from the Committee for the Conduct of Ethical Research of Edith Cowan University and the Commissioner of Health for Western Australia (see Appendix F). Letters were then sent to each of the ten Directors of Regional Health Services seeking their approval (see Appendix F). The Regional Offices provided a list of hospitals meeting the criteria for the study. Further permission was then obtained from the Director of Nursing for each hospital, and from the hospital Ethics Committee where one existed. Permission for the telephone interview was obtained from the Administrator of each hospital if the Director of Nursing was unable to give that permission.

All questionnaires were coded, prior to distribution, to allow identification of respondent hospitals. To ensure confidentiality these codes were kept separately from the returned questionnaires and accessed only by the researcher. All questionnaires will be retained by the researcher in a secure place for a period of five years. Following this they will be incinerated by the researcher.

A covering letter (see Appendix G) was attached to every questionnaire explaining the purpose of the study, the method for selection of respondents

and informing them that their responses would remain confidential. Each questionnaire had a stamped self addressed envelope attached, to ensure confidentiality. Consent from respondents was implied by the return of the completed questionnaires.

Assumptions

It was assumed that all responses were truthful and accurate.

Limitations

The study design was a descriptive survey using a questionnaire not previously tested for validity and reliability.

It was assumed that all departments surveyed had staff rostered for the accident and emergency department exclusively over 24 hours. This was not the case, and many departments were excluded from the survey for that reason. A more accurate survey would have included all hospitals within Western Australia.

Summary

Three questionnaires were compiled for this study to obtain details of how triage is practised in Health Department of Western Australia accident and emergency departments. Following a pilot study of departments, with and without TNs, modifications were made to the two questionnaires compiled to survey nursing staff. The questionnaires were distributed by staff from each hospital, to ensure a variety of experience and differing levels of employment would be obtained from each department. The third questionnaire was used

for a structured telephone interview of receptionists which was conducted in hospitals where receptionists saw the patient first. The next chapter reports the findings obtained from the interviews and questionnaires.

CHAPTER FIVE

Findings

The study findings are presented in relation to the research question, which is to investigate how the process of triage is currently practised in the Health Department of Western Australian, accident and emergency departments. Comparative data are presented for the two types of departments in relation to the subsidiary questions, which are analysed in relation to:

1. Staffing levels.

2. Number of patient attendances.

3. Organisation of services, specifically the location of the triageur and the facilities available for triaging patients.

4. Practices within the department, including the person performing triage, patient waiting times to see a nurse, basis for triage decisions, the use of formal triage categories, written criteria for redirecting non-urgent patients away from the department, written information given to patients when they are redirected away from the department, the average time taken to triage, investigations and treatments that may be ordered by nursing staff, documentation recorded by the triage nurse and practices specific to departments with TNs.

5. The preparation of triage nurses, including training and experience.

Descriptive statistics are used to summarise the data. Comments made to open ended questions regarding the positive and negative aspects of the

current systems in place, are presented as common themes obtained from a content analysis of responses.

Respondents

A total of 23 accident and emergency departments within eight Regional Health Services of Western Australia took part in the survey. There were 81 CNs, 76 RNs, 9 CNSs, 9 Directors of Nursing or Nurse Managers and 7 ENs who completed the questionnaires. There were a total of seven departments within the metropolitan area and sixteen from the country that participated in the survey (see Table 2).

Table 2

Respondents to Questionnaires According to Regional Location (N = 23)

Health Region	Departments		Nurse Respondents	
	Number	Percentage	Number	Percentage
South Metropolitan	3	13.0%	30	16.5%
North Metropolitan	2	8.7%	18	9.9%
East Metropolitan	2	8.7%	35	19.2%
Great Southern	3	13.5%	15	8.2%
South West	4	17.5%	32	17.6%
Goldfields	2	8.7%	10	5.5%
Midwest Gascoyne	2	8.7%	12	6.6%
Kimberley	5	21.7%	30	16.5%

The majority of the nurses who completed the questionnaires (63%) had been employed for over 10 years. Twenty four RNs (13%) had less than 5 years employment and one had less than 1 year. Their experience in accident and emergency nursing ranged from less than 6 months to greater than 10 years (see Table 3). Ninety four (52%) had more than 5 years experience in accident and emergency nursing.

Table 3

Level of Employment and Experience in Accident and Emergency Nursing of the Individual Nurses Completing the Questionnaires (N = 182)

Experience	EN	RN	CN	CNS	DON/ NM [a]
<6 mths	0	9	2	0	0
>6 mths - <2 yr	2	26	1	0	1
>2 yr - <5 yr	0	28	14	2	2
>5 yr - <10 yr	3	10	31	4	1
>10 yr	2	3	32	3	5
TOTAL	7	76	80 [b]	9	9

[a] NM/DON = Nurse Manager or Director of Nursing. [b] One CN did not state years of experience.

The employment of TNs was found to occur in seven accident and emergency departments (30%). These were classified as *Group 1,* and there were sixteen departments (70%) without TNs, which were classified as *Group 2* (see Table 4).

These groups were further divided as follows:

Group 1 *A)* Departments with TNs on a daily basis.

B) Departments with TNs on weekends only.

Group 2. *A)* Departments employing nursing staff exclusive to the department 24 hours per day.

B) Departments without nursing staff exclusive to the department 24 hours per day and with GPs on call.

C) Departments without nursing staff exclusive to the department 24 hours per day, employing RMOs on call and with out-patient departments within the hospital.

Table 4

Number of Accident and Emergency Departments, and Number of Nurse Respondents in Departments With and Without Designated Triage Nurses

	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily	B Weekend	Total	A Nurse 24 hrs	B GP on call	C RMO's on call	Total
Number of departments	4	3	7	5	5	6	16
Nurse respondents	67	26	93	39	19	31	89
Mean per department	16.75	8.67	13.29	7.80	3.80	5.17	5.56
SD	9.18	2.52	7.3	2.78	2.59	2.93	3.08
Range	9 - 30	6 - 11	6 - 30	5 - 11	1 - 8	1 - 10	1 - 11

Subsidiary Question 1. What are the Differences in Staffing Levels Between Accident and Emergency Departments With and Without Designated Triage Nurses?

There were differences in the responses from nursing staff within the same departments, to the question on how many nursing staff were on duty each day. These differences in responses were in departments where some staff commented that differences occured in the level of staff employed over the week. Where this occured, calculations were based on the average for the week. For example, where one person was employed in the department for two days per week this was calculated as 0.3 nurses per day. In departments where the staff were utilised for other areas as well as the accident and emergency departments, their time in the department was calculated as a half person. For example, where staff coverage during the day was one on duty for the morning, one for the afternoon, and one nurse reported to cover at night from the ward area, then coverage for the department was calculated to be 2.5 nurses per day.

The type of medical staff coverage of the department made no difference to the various levels of nursing staff employed when comparing departments with and without TNs. Fifteen (65%) were covered by RMOs either attached to the hospital or within the department, and eight (35%) were covered by GPs on call. Only one department in Group 1 was covered by GPs on call. This department employed TNs on weekends only. In departments with TNs, 57% employed CNs and RNs only, whereas in those without TNs, 44% employed only CNs and RNs. There were 12 departments (52%) where ENs were employed, 3 with TNs and 9 without TNs.

Table 5 shows that the mean number of staff employed within departments without TNs where a GP was on call, was less than that in all other departments. There was little difference in the number of nursing staff employed by departments with weekend TNs, and those without TNs where nurses were employed over 24 hours. Overall, departments with TNs employed more than four times the number of nursing staff that were employed by departments without TNs.

Table 5

Mean Number of Nursing Staff Employed per Day in Departments With and Without Designated Triage Nurses

	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily	B Weekend	Total Group	A Nurse 24 hrs	B GP on call	C RMO's on call	Total Group
Mean	22.13	5.07	14.81	4.86	1.86	3.62	3.46
SD	10.91	1.45	11.97	0.97	0.42	1.24	1.53
Range	9.5 - 36	3.4 - 6	3.4 - 36	3.3 - 6	1.5 - 2.5	2 - 5.8	1.5 -

Only one department without TNs stated that the introduction of a TN would not require extra staff and only two departments declared that they would not like them introduced. One of these departments stated that the

trustworthy relationship between receptionists and nurses and the support of senior nurses to inexperienced staff made their system work effectively.

Subsidiary Question 2. What are the Differences in Patient Attendances Between Accident and Emergency Departments With and Without Designated Triage Nurses?

Differing numbers of patient attendances per week were reported from within the same department. Therefore, the mean was used for reporting purposes except in two departments where large discrepancies in reporting occurred, and so the mode was used. Figure 2 shows patient attendances per group.

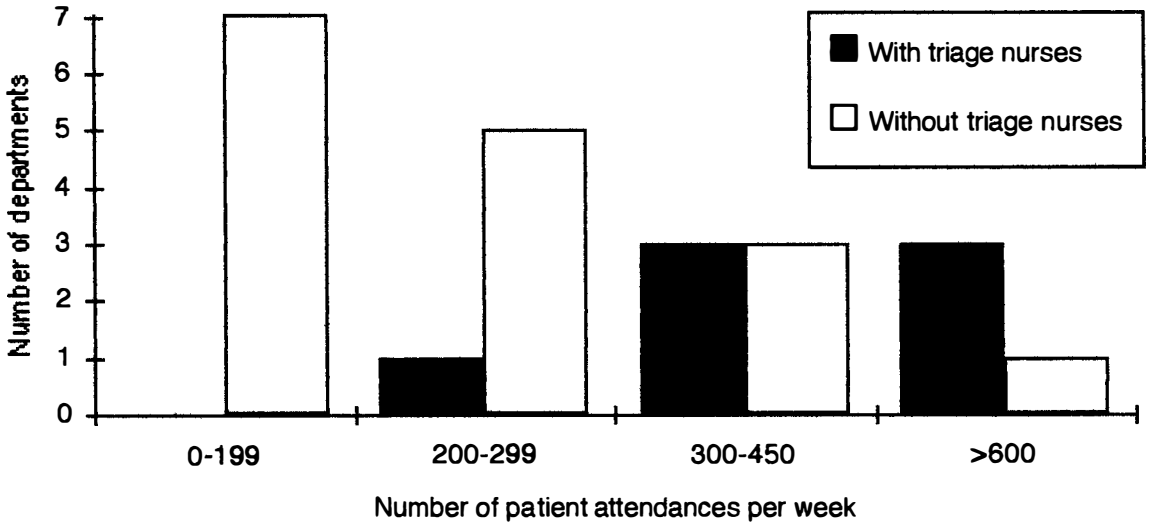

Figure 2. Number of Weekly Patient Attendances in Accident and Emergency Departments with Different Levels of Weekly Patient Attendances (N = 23)

Departments with high patient attendance figures in the metropolitan area all employed a TN in the department. The number of patient attendances in all other departments with TNs was between 230 and 450 per week. The same range of patient attendances was reported in Group 2 departments employing nursing staff over 24 hours. Group 2 departments with RMOs on call, had some very high patient attendance figures, however, these figures did not distinguish between those attending the out-patient clinic and those attending for emergencies only.

When the number of nursing staff per day was divided into the number of patient attendances for the week, a nurse-patient ratio was obtained. Table 6 shows that departments with daily TNs had a far greater nurse-patient ratio than those where TNs were employed on weekends only. Only one department reported a similar ratio to Group 1A departments, this was in Group 2B where a GP was on call (35 patients per nurse). Other departments without TNs varied with one reporting 171 patients per nurse. This department was not included in the table as it was far greater than any others in the survey.

Table 6 shows that the number of nursing staff per patient employed in a department with daily triage cover is far greater than those without TNs. Those with TNs employed on the weekend only, have the largest number of patients per nurse.

Table 6

The Mean Nurse-Patient Ratio in Departments With and Without Designated Triage Nurses.

	With triage nurses Group 1			Without triage nurses Group 2			
Nurse/patient ratio [a]	A Daily	B Weekend	Total Group	A Nurse 24 hrs	B GP on call	C RMO's on call	Total Group
Mean	35	74	51.7	65	50	64 [b]	59.9
Range	31-37	71-80	31-80	45-90	35-64	47-108	35-109
SD	2.6	4.9	21.4	21.1	12.2	25.4	20.1

[a] The number of patient attendances per week divided by the number of nurses per day .

[b] One hospital not included, ratio = 171.

Triage nurses were employed in all departments where patient attendances exceeded 300 per week and over five nurses per day were employed within the department.

Subsidiary Question 3. What are the Differences in the Way Triage Services are Organised Between Accident and Emergency Departments With and Without Designated Triage Nurses?

The organisation of services were examined to determine differences between departments with and without TNs in relation to the location of the triageur and the affect this has on the method of patient assessment and on

the surveillance of patients entering the department and within the waiting room. The facilities within departments with daily TN cover were also examined to see what was available to the TN. Where there were discrepancies in responses within the same department, a simple majority was used for reporting purposes.

3.1 The location of the triage nurse and patient assessment.

The most frequent problem stated with triage was the lack of privacy for interviewing and assessing patients. Sixty four nurses, covering all Group1 departments, commented on this lack of privacy. Departments with TNs employed on a daily basis, were asked where the TN was located. Two were situated at the reception desk and the other two in a separate area near the reception desk.

Private conversation with patients in the area where they are first assessed, was only possible in seven departments, all in hospitals without TNs (see Table 7). Only one of these departments was located within the metropolitan area. Visual assessment of patients was possible in all departments. Physical assessment for triage decisions was less likely to be conducted if physical assessment did not take place at the initial area used for interview. In one department with a TN, there was a separate assessment room. First aid was not provided at the initial interview point in five departments (see Table 7). It was reported by two departments with TNs, that it was difficult to hear patients through a security screen and this was a problem during their assessment interview.

Table 7

The Location of the Triage Nurse and Patient Assessment in Departments With and Without Designated Triage Nurses (N = 23)

Location allows for	With triage nurses Group 1 (N = 7)	Without triage nurses Group 2 (N = 16)
1) Private conversation	0	7
2) Visual assessment	7	16
3) Physical assessment	1	11
4) First aid	6	13

3.2 The location of the triage nurse and patient surveillance.

In all metropolitan departments with daily TNs, the location of the triage nurse allowed for the surveillance of all patients walking into the department. In two of these departments the TN did not have visibility of the ambulance entrance. Of these two departments, one allocated another TN to assess ambulance patients and the other did not. Both departments suggested improvements that could be made to their triage system. These included having only one area for triaging both the walking wounded and ambulance patients. They felt that the present system did not allow them to know when ambulance patients had arrived and under these circumstances they were not as helpful as they could be to the relatives of ambulance patients. Nursing staff also reported that having two triage areas resulted in some patients, who had arrived by ambulance, being seen before higher priority category patients who were triaged in the other area.

Department design was of concern to many hospitals, with nurses reporting they were unable to see arriving or waiting patients. Patients walking into the department were seen more often by receptionists than nurses. In three departments, one with weekend TNs, and two without TNs, neither receptionists nor nurses could view the waiting room, while in six other departments, two with and four without TNs, only receptionists had visibility (see Table 8). In two departments with daily TNs, when the department was busy, the TN was used for other duties within the department as well as triage. At these times, waiting patients could be observed by the receptionist. One department with daily TNs had a television monitor to allow observation of a waiting room. It was reported that from time to time the monitor broke down, making patient observation impossible. In general, nurses could see the ambulance entrance more often than receptionists (see Table 8).

Table 8

The Location of Nurse or Receptionist and the Surveillance of Patients in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1 (N = 7)				Without triage nurses Group 2 (N = 16)			
Patients	N[a]	R[b]	N or R[c]	Nil	N	R	N or R	Nil
1) Entering department	3	3	1	0	1	11	2	2
2) Ambulance entrance	4	0	0	3	6	0	5	5
3) Waiting room	1	2	3	1	2	4	8	2

[a] N = Nurse. [b] R = Receptionist. [c] N or R = Nurse or Receptionist.

3.3 Facilities available for triaging patients.

Departments with TNs were asked what facilities were available for triaging patients. Departments without TNs were not asked this question as nursing staff would use their departments facilities as they required them.

Departments located in the metropolitan area and employing TNs on a daily basis, were the only ones which had facilities designated to the TN only (see Appendix H). These departments had many facilities available to the TN that included: phone, emergency resuscitation equipment, first aid equipment, resource files and means of obtaining someone for security purposes. Hand washing facilities were not provided at the triage area. One department reported that a whiteboard with patients name, diagnosis and whether relatives were present was extremely helpful. Another department reported that having a sign informing patients of the approximate length of wait to see a doctor was also very helpful.

Subsidiary Question 4. What are the Differences in Triage Practices Between Accident and Emergency Departments With and Without Designated Triage Nurses?

Departmental practices were examined to determine differences between those where TNs are employed and those without TNs.

4.1 Initial contact.

The level of employment of the first person to see patients when they arrived in the department varied (see Table 9). A RN, or a nurse on a higher level of employment than a RN, saw patients first in four departments (57%)

with TNs and one (6%) without TNs. These involved three metropolitan departments with daily TNs, one metropolitan department with weekend TNs and one country department in Group 2 with a GP on call. In all other departments patients were seen by a receptionist first during the day, and by either a receptionist or a nurse after hours.

Departments with TNs all reported that having a nurse as the triage person meant patients were seen promptly, prioritised quickly, and sent to the appropriate area for their care. The nurses responding to the survey perceived that triage nurses were regarded as a resource person by patients, and were able to give advice and explanations to patients and relatives. They were also perceived to be an effective communicator for doctors and relatives. Three departments without TNs had nurses comment that having receptionists as the first person seeing the patient was unsatisfactory as some receptionists were young and inexperienced.

Table 9

Level of Employment of Person Seeing Patients on Arrival in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Level of Employment	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
RN[a] only	3	1	4	0	1	0	1
RN[a] EN[b] or R[c]	0	2	2	5	4	5	14
R[c]	1	0	1	0	0	1	1

[a] RN = Registered Nurse or a nurse on a higher level of employment than a RN.

Overall, patients were more likely to be seen by a nurse first in departments with a TN than in departments without a TN.

4.2 Waiting time to see a nurse.

Each nurse was required to state approximately how long a patient could be kept waiting to see a nurse after being seen first by a receptionist. The question was divided into "usually or 80% of the time" and "sometimes" to give an accurate portrait of what could happen within each department. This length of time averaged 6 minutes overall.

The time was examined for each department and is reported as the combined times given by nurses, that is, if one nurse stated the time was 1-3 minutes and another 4-5 minutes, the combined time of 1-5 minutes was reported. Departments with daily TNs always saw patients within 10 minutes (see Table 10) with an mean reported time of 2.75 minutes.

A mean waiting time was calculated for each department. The means were obtained by adding the mean of the individual nurses' responses within each department and dividing by the number of nurses within that department. Departments in Group 2 with a GP on call, had the shortest mean waiting time, 3 minutes, with those having RMOs on call reporting the longest, 12 minutes.

All departments in Group 2, with 24 hour nursing cover and with RMOs on call, reported waiting times of longer than 20 minutes at least 10% of the time. The only other department reporting a wait of longer than 20 minutes 10% of the time, was the country department in Group 1 with weekend TNs.

The staff in one metropolitan department in Group 2 with 24 hour nursing cover, were concerned about the length of wait in their department and were

looking at introducing a TN to overcome the situation, but stated they were constrained by budgetary considerations.

Table 10

Length of Time Patients May Wait to See a Nurse, When Seen by a Receptionist First in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Length of wait to see a nurse	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
At least 80% of the time							
1 - 3 minutes	1	0	1	0	2	0	2
1 - 5 minutes	2	1	3	2	3	0	5
1 - 10 minutes	1	1	2	1	0	1	2
4 - 10 minutes	0	0	0	1	0	0	1
1 - 20 minutes	0	0	0	1	0	1	2
4 - 20 minutes	0	1	1	0	0	2	2
10 - 20 minutes	0	0	0	0	0	2	2
At Least 10% of the time > 20 minutes	0	1	1	3	0	6	9
Mean length of time	2.7	5.0	3.7	6.0	3.0	12.0	7.6
SD	1.5	2.8	2.3	3.6	1.1	3.7	4.9
Range	2- 5	2-8	2-8	3-12	2.5-4.5	6.5-16	2.5-16

Overall, when patients were seen by a receptionist first, it took longer for them to be seen by a nurse in departments without TNs, the mean was 7.6 minutes compared to departments with TNs where the mean was 3.7 minutes.

4.3 Person making priority decisions.

In departments with daily TNs priority of care was decided by RNs or those nurses on a higher level of employment than a RN. In two departments with weekend TNs, ENs or receptionists could also decide priority of care. There were two departments without TNs where only RNs, or those nurses on a higher level of employment than RNs, made the decision regarding patient priority. Receptionists were involved in deciding priority in 12 (88%) departments without TNs (see Table 11).

Table 11

Level of Employment of Person Deciding Priority of Care in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Level of Employment	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
RN[a] only	4	1	5	1	1	0	2
RN[a] or EN[b]	0	0	0	0	2	0	2
RN[a] or R[c]	0	0	0	0	1	0	1
RN[a] or EN[b] or R[c]	0	2	2	4	1	6	11

[a] RN = Registered Nurse or a nurse on a higher level of employment than a RN.

[b] EN = Enrolled Nurse. [c] R = Receptionist.

The fact that receptionists made priority decisions is demonstrated by their statements that when they saw patients first, they contacted nursing staff immediately they thought it was an emergency, for example, "dripping blood," "looks distressed" or "chest pain".

4.4 Basis for making triage decisions.

Only one receptionist in a hospital with RMOs on call reported having written policies and guidelines for making triage decisions. Most receptionists in Group 1 and Group 2 stated they had learnt how to triage by experience or used their intuition when deciding what was an emergency.

A majority of nurses from six (86%) departments with TNs and nine (56%) departments without TNs reported that they used policies and guidelines when making triage decisions. However, nurses from one department unanimously reported they did not use written policies and guidelines. Clinical Nurse Specialists from departments with TNs, reported they used policies and guidelines more than the other levels of nursing staff. In departments without TNs, ENs reported using them the most. Clinical Nurses reported that they used them the least. Table 12 shows that overall 54% of nurses reported that they used policies and guidelines in decision making, in departments without TNs, whereas 52% of nurses from departments with TNs reported using them.

Table 12 also shows that experience, visual and verbal assessment and physical assessment were used in making triage decisions in all departments. Physical assessment was used more often in departments without TNs than in departments with TNs. However, one department with a TN stated the TN was

only responsible for a quick assessment, with the full physical assessment being the responsibility of another nurse within the department and this was reported as being the quickest way to assess patients correctly in a busy department

Table 12

Basis for Triage Decisions Made According to the Level of Nurse

Level of nurse	Policy and Guidelines	Visual & Verbal Assessment	Physical Assessment	Experience	Intuition
GROUP 1 With triage nurses					
CNS (n = 4)	3 (75%)	4 (100%)	3 (75%)	4 (100%)	3 (75%)
CN (n = 43)	19 (44%)	42 (98%)	32 (74%)	41 (95%)	32 (74%)
RN (n = 46)	26 (57%)	45 (98%)	34 (74%)	45 (98%)	40 (87%)
Total (N = 93)	48 (52%)	91 (98%)	69 (74%)	90 (97%)	75 (81%)
GROUP 2 Without triage nurses					
CNS/NM/ DON (n = 14)	7 (50%)	12 (86%)	12 (86%)	11 (79%)	10 (71%)
CN (n = 38)	13 (34%)	36 (95%)	43 (89%)	37 (97%)	29 (76%)
RN (n = 30)	22 (73%)	30 (100%)	27 (90%)	26 (87%)	20 (67%)
EN (n = 7)	6 (86%)	7 (100%)	6 (86%)	7 (100%)	5 (71%)
Total (N = 89)	48 (54%)	85 (96%)	79 (89%)	81 (91%)	64 (72%)

Intuition was identified as being used by the majority of nurses when making triage decisions (see Table 12). More nurses reported that they used

intuition when making triage decisions in departments with TNs (75) than in departments without TNs (64). Registered Nurses in departments with TNs (87%) reported using intuition more than any other group of nurses, however, the RNs in departments without TNs (67%) reported using intuition less than any other group of nurses.

Priority decisions were reported to be made more often by nursing staff in departments with TNs than in departments without TNs. Policies and guidelines were used as a basis for making triage decisions slightly more in departments without TNs than in departments with TNs. Physical assessment was used more often in departments without TNs, with visual and verbal assessment, experience and intuition used slightly more in departments with TNs.

4.5 Formal triage categories.

Various formal triage systems were reported to be in use. Five-category priority systems were used in all departments with daily TNs, one department with weekend TNs and one with 24 hour nursing cover in Group 2. A four-category priority system was used in the other departments with weekend TN cover. One department with weekend TNs reported that they used a four-category priority system, however, it was not documented. Departments in Group 2 with 24 hour nursing cover reported priority categories varied from three to five.

Although they reported they used a priority category system, two departments with daily TNs, stated that these categories did not correspond to the priority categories they used for mass disaster situations. Three

departments without TNs reported having categories which were also used in disaster situations (see Table 13). None of the priority categories used by Group 2 departments with 24 hour nursing cover, corresponded to those they used in disaster situations.

In three departments with formal triage category systems, the categories were not documented in the patients' notes (see Table 13). Six departments reported using appropriate time limits which had been determined for each category. Only two departments used colour codes for priority categories (see Table 13), but these were not documented in the patients' notes.

Table 13

Use of Triage Categorisation Systems in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Triage Category	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Formal triage categories	4	3	7	3	0	0	3
Corresponds to disaster categories	2	3	5	0	2	1	3
Documented in patients notes	3	2	5	2	0	0	2
Colour codes for categories	1	1	2	0	0	0	0
Time limits for each category	3	2	5	1	0	0	1
Reassess patients at specified time intervals	0	2[a]	2	2[a]	1[a]	0[a]	3

[a] Other departments in these groups reported reassessment on an as required basis.

Patients waiting to be seen by a doctor were not reassessed at specified time intervals to see if their priority rating should be changed. However, reassessment was reported to occur, on an as required basis by both groups of departments (see Table 13).

Formal triage categories for prioritising patients were used in all departments with TNs and only three without TNs (19%). Three departments with TNs on weekends and one in Group 2 with GPs on call, had RNs, or nurses on a higher level of employment than a RN, seeing patients first. Another department with weekend TNs used the formal system retrospectively for acuity purposes. Patients were seen by a receptionist first in this department and were seen by a nurse within 3 minutes. Four of the departments using formal triage systems, two with weekend TNs and two with 24 hour nursing cover in Group 2 had receptionists decide informally on a two-category priority system. These departments also reported long delays for nurses seeing patients. Therefore, formal triage systems were used in these departments only after being seen by nursing staff.

4.6 Person deciding where patients are seen.

The level of employment of the person responsible for deciding the appropriate place for patients to be treated within the department, was reported by nursing staff to be RNs or above. Receptionists, however, reported that they made these decisions. Departments without TNs reported that ENs could also make these decisions (see Table 14).

Redirection of patients away from the department, was a practice in 17 (74%) departments (see Table 14). Seven receptionists reported they had

redirected patients to a GP's surgery without referring to nursing or medical staff. This had occurred if the complaint was minor, or if the surgery was open at the time the patient presented or if the department was busy. Enrolled Nurses prioritised and redirected in most departments where they were employed (see Table 14). One department suggested implementing nurse practitioners to assess and redirect patients away from the department.

Table 14

Level of Employment of Person Deciding Appropriate Place to be Treated in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Level of Employment	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
RN[a] only	4	3	7	2	5	1	8
RN[a] or EN[b]	0	0	0	3	0	5	8

[a] RN = Registered Nurse or a nurse on a higher level of employment than a RN.

[b] EN = Enrolled Nurse.

Overall, nursing staff in departments with weekend TNs and departments without TNs, reported a higher level of employee, such as a RN, was required when deciding the most appropriate place for the patient to be treated, than was required for redirecting non urgent patients to a doctors surgery (see

Table 15). Questions relating to the level of employment required were not included in the questionnaire sent to departments with daily TNs.

Only one department with TNs reported a receptionist redirected patients. All the other departments in this group reported that a RN or a nurse on a higher level of employment than a RN made decisions regarding the redirection of patients. Departments without TNs reported that all levels of nurses or receptionists made these decisions. There were two departments with TNs (29%) and four without TNs (25%) where redirection was not applicable.

Table 15

Level of Employment of Person Deciding Redirection of Non-Urgent Patients in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Level of Employment	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
RN[a] only	3	1	4	0	1	2	3
RN[a] or EN[b]	0	0	0	1	2	0	3
RN[a] or R[c]	0	1	1	1	2	0	3
RN[a] or EN[b] or R[c]	0	0	0	2	0	1	3
Not Applicable	1	1	2	1	0	3	4

[a] RN = Registered Nurse or a nurse on a higher level of employment than a RN.

[b] EN = Enrolled Nurse. [c] R = Receptionist.

4.7 Written criteria for redirecting non-urgent patients away from the department.

A majority of nurses in one department with weekend TNs and four departments without TNs reported having written criteria for redirecting non-urgent patients away from the department (see Table 16). A country department without TNs reported that redirection was against hospital policy, but it did occur in reality. Nurses in five departments with TNs reported they only advised patients about alternative provisions of care, and the patient made the final decision to go elsewhere for treatment.

In one department, with weekend TNs, implementing written criteria for redirecting patients to a doctors surgery was seen as being one way of improving their triage system. The majority of comments regarding negative aspects of triage from departments without TNs, concerned the lack of written policies and guidelines for redirecting patients.

Table 16

Criteria for Redirecting Patients away from the Accident and Emergency Department in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Criteria for redirecting	0	1	1	1	2	1 [a]	4

[a] One department reported this was not applicable

4.8 Information given to patients when redirected away from accident and emergency departments.

A majority of nurses in eight departments, two in departments with TNs and six in departments without TNs reported that they gave patients written directions to a doctors surgery (see Table 17). All of these departments were from country hospitals.

Nurses from one department, without TNs, reported that they provided patients with written information on the appropriate use of the accident and emergency department (see Table 17).

Table 17

Patient Information Given when Patients are Redirected away from the Accident and Emergency Department in Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Written directions to GPs surgery	1	1	2	3	3	n/a	6
Written information given to patients on appropriate use of accident and emergency	0	0	0	1	0	0	1

4.9 The average time taken to triage patients.

Times are reported as the combined times of the nurses responses in each department; that is, if one nurse reported 1-3 minutes and another 1-5, then the combined time is reported as 1-5 for that department. Nurses in departments with TNs where RMOs were employed, reported that they only took 1-5 minutes to triage patients. In the department with TNs having GPs on call, nurses took longer to triage, that is 1->10 minutes. Times taken to triage varied in all departments without TNs regardless of whether they had RMOs or GPs. Those departments that reported more than 7 months experience was required prior to triaging patients, also reported the time taken to triage patients averaged 1-5 minutes. Twelve departments (52%) reported that the time taken to triage was up to 5 minutes (see Figure 3).

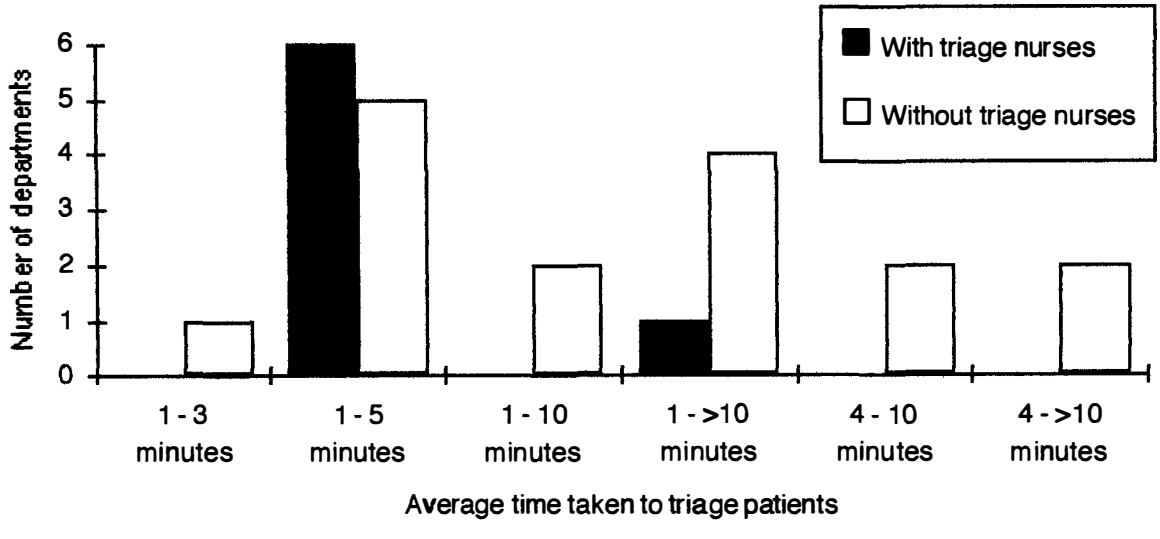

Figure 3. Average Time Taken to Triage Patients in Each Department (N = 23)

Assuming the average length of time taken to triage patients was the mean of the time stated by the nurses (for example, a statement of 1-3 minutes equals an average of 1.5 minutes), then the mean average overall was 4.25 minutes. A mean average was calculated for each department. These means were obtained by adding the mean of the individual nurses' responses within each department and dividing by the number of nurses within that department. The departments taking the longest time were in Group 2 with RMOs on call (6.85 minutes), and the shortest in departments with daily TNs (3.05 minutes). Nurses took an overall mean of 3.2 minutes to triage patients in departments with TNs compared to nurses in departments without TNs where an overall mean of 5.3 minutes was taken.

4.10 Investigations that may be ordered by a nurse without reference to a doctor.

The types of investigations ordered without reference to a doctor are reported if just one nurse in each department reported this occurred (see Table 18). Only one respondent, in one country department, stated that X-rays were ordered without referral. The range of investigations ordered by nurses independent of doctors are shown in Table 18.

Table 18

Types of Investigations That May be Ordered Without Reference to a Doctor in Departments With and Without Designated Triage Nurses (N = 23)

Investigations ordered	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Blood sugar levels	4	3	7	5	5	6	16
Peak flow	4	3	7	5	5	5	15
Electrocardiograph	4	3	7	5	5	6	16
Oxygen saturation	2	3	5	4	2	1	7
Urinalysis	2	2	4	2	1	2	5
Mid stream urine specimens	-	2	2	2	-	3	5
Wound swabs	-	1	1	1	-	3	4
Faeces for pathology	-	-	-	-	-	2	2
Swabs for sexually transmitted diseases	-	-	-	-	-	2	2
PAP smears	-	-	-	-	-	1	1
Beta HCG (pregnancy test)	-	1	1	2	-	2	4
Haemoglobin	1	-	1	-	-	1	1
Visual acuity	1	1	2	1	-	-	1
Ventilatory function	1	-	1	1	-	-	1
Alcometer	1	-	1	-	-	-	-

Note. A dash indicates no respondant nominated this item.

4.11 Minor problems that may be treated by nursing staff without reference to a doctor.

There was only one department where all nurses reported that patients were not treated by nursing staff for a minor problem without referring to a doctor first. This was a department without TNs and with 24 hour nursing staff cover, which was located in the metropolitan area and had RMOs in the department.

A majority of nurses in four departments with TNs and four without TNs, stated they did not treat any problems. However, other nurses within these departments stated they did treat minor problems without referring to a doctor first. Only one of these departments had GPs on call.

None of the most experienced nurses in departments with TNs, stated they treated anything more than dressings and minor abrasions. One department with weekend TNs was trialing a nurse practitioner role, and only that nurse was reported to be allowed to treat any minor problems within that department. Table 19 shows the types of problems treated as reported by each department.

The major differences reported between departments with and without TNs in treating minor problems, was that some departments without TNs, all in country areas, treated toothaches, gave Tetanus Toxoid injections and those with RMOs on call sutured minor wounds.

Written guidelines for treating minor problems without reference to a doctor were reported by a majority of nurses in seven departments without TNs (one with 24 hour nursing cover and with RMOs in the department, and all six with RMOs on call).

Table 19

Types of Minor Problems Treated Without Reference to a Doctor in Departments With and Without Designated Triage Nurses (N = 23)

Problems treated	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Minor laceration							
A) Without suturing	4	3	7	4 [a]	5 [a]	2	11
B) With suturing	-	-	-	-	-	4 [a]	4
Dressings or wound care	4	3	7	2	2	6	10
Minor illness [b]	2	3	5	3	2	6	11
Minor trauma [c]	2	3	5	1	2	6	9
Chronic problems [d]	2	1	3	2	1	3	6
Dental - toothache	-	-	-	2	1	-	3
Removal of foreign bodies [e]	2	1	3	1	1	1	3
Removal of rings	2	2	4	-	1	-	1
Removal of sutures	2	1	3	-	1	-	1

Note. A dash indicates no respondent nominated this item.

[a] One department in each group reported giving Tetanus Toxoid injections.

[b] Minor illnesses, included diarrhoea and vomiting, colds, minor ear and eye problems, head aches and skin infections. [c] Minor trauma, included minor head injuries; burns; sprains and strains; bites and stings. [d] An example of a chronic problem was asthma that responds to one nebuliser treatment. [e] An example of a foreign body was a fish hook.

4.12 Documentation recorded.

When patients were redirected to a doctors surgery by receptionists, written documentation was kept by only one department (see Table 20). Overall, more departments without TNs (87%) kept documentation when patients were redirected, than departments with TNs (57%).

Table 20

Documentation Kept when Patients are Redirected away from Accident and Emergency Departments With and Without Designated Triage Nurses (N = 23)

	With triage nurses Group 1			Without triage nurses Group 2			
Documentation kept if patient redirected	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Receptionist	n/a	0	0	0	0	1	1
Nurses	1	3	4	5	4	4 [a]	13

[a] Two departments reported this was not applicable.

Only departments with daily TNs reported any differences in the type of documentation recorded by the nurse who triages patients. These differences were in: demographic details; temperature, pulse, respirations and blood pressure; allergies; present medications; and tetanus cover. One department reported demographic details were taken by the receptionist and they all reported the pulse was taken by a nurse. All the other documentation listed in Table 21 were answers given by at least one nurse from each department

when asked what documentation was recorded. All departments reported this documentation was a part of the patients notes. One department stated their documentation was continuously improving. Only two departments reported that the TN did not sign triage documentation. Both of these were departments with daily TNs.

Table 21

Documentation Recorded by the Nurse Triaging the Patient in Departments With and Without Designated Triage Nurses (N = 23)

Triage Documentation	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Demographic details	3	3	6	5	5	6	16
History of presenting complaint	4	3	7	5	5	6	16
Temperature, pulse, respiration and blood pressure	0	3	3	5	5	6	16
Allergies	2	3	5	5	5	6	16
Present medication	2	3	5	5	5	6	16
Tetanus cover	2	3	5	5	5	6	16
Past medical/surgical history [a]	4	3	7	4	1	3	8
Physical assessment [a]	1	1	2	5	1	2	8
Previous hospitalisation [a]	1	1	2	-	1	-	1
Methicillin resistant Staphylococcus aureus status [a]	1	-	1	-	2	-	2
Condition [a]	2	2	4	1	-	-	1
Time in, out, seen by doctor [a]	1	-	1	-	2	-	2
Destination [a]	1	-	1	-	1	-	1
Regular doctor [a]	2	2	4	1	-	-	1
Mode of arrival [a]	2	-	2	-	-	-	-
Treatment in progress or prior to arrival [a]	2	-	2	-	-	-	-
Persons accompanying patient [a]	2	-	2	-	-	-	-
Next of kin phone number [a]	2	-	2	-	-	-	-
Letters or X-rays with patient [a]	1	-	1	-	-	-	-

Note: A dash indicates no respondent nominated this item.

[a] Included by any nurse from each department when asked what other documentation was recorded.

4.13 Practices specific to departments with designated triage nurses.

Departments with daily TNs were asked if the TN was informed of the location of all patients within the department, at all times. The majority of replies indicated that this did not occur in three departments. The TN in the fourth was also the co-ordinator of the department, and therefore was informed.

Phone enquires requesting advice and information were the responsibility of the TN, according to the majority of nurses in three departments.

Departments with daily TNs were asked how long triage had been practised. Majority answers are used for reporting purposes. Triage had only been introduced into the country department for less than 5 years. In the other three departments it had been introduced for: 6-10 years in one, 11-15 years in another and more than 16 years in the last. Triage nurses had been introduced into two departments, with weekend TNs, less than one year and the third department, with weekend TNs, more than one year before the survey.

All patients are triaged if they attend departments with TNs on duty. Triage nurses were on duty for 24 hours in three departments with daily TNs, and from 0800 hours until 2100 hours in the fourth.

Problems faced by departments with daily TNs included dealing with too many inappropriate enquiries and telephone calls, lack of security and the inability to look after relatives correctly .

Subsidiary Question 5. What are the Differences in the Preparation of Triage Nurses Between Accident and Emergency Departments With and Without Designated Triage Nurses?

The preparation of triage nurses was examined in relation to: the training program required for triage, the minimum experience required before triage and the experience required prior to treating patients or ordering investigations without reference to a doctor.

5.1 The training program required for triage.

Departments were reported to have a training program if only one positive reply was received from that department (see Table 22). Overall there were only 29% (27) of the nurses surveyed with TNs and 21% (19) without TNs, who stated their department had a training program.

Competency training specific to triage was requested as a means of improving triage in one department with daily TNs. Others requested more time spent orientating staff to the area as supernumary or preceptoring staff. Ongoing education on accident and emergency skills was another common request .

Table 22

Metropolitan and Country Accident and Emergency Departments with a Triage Training Program in Departments With and Without Designated Triage Nurses (N = 23)

Area	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Metropolitan	3	1	4	1	0	0	1
Country	0	1	1	3	1	2	6
Total	3	2	5	4	1	2	7
Total %	75%	67%	71%	80%	20%	33%	44%

When looking at what is involved in the training program, most departments had very few respondents answer these questions. Departments were included in the report if any respondent gave a positive reply. Preceptoring was the most frequently used method of training for all departments (see Table 23). The length of time given to training varied. Ten departments reported times for preceptoring and these ranged from 6 to 80 hours with the majority reporting 16 hours. Four departments reported times for assessment skills and these ranged from 2 to 8 hours or was an ongoing program. Only two departments reported times for interpersonal skills as being 1 hour and 8 hours respectively.

Table 23

Components of the Triage Training Program in Departments With and Without Designated Triage Nurses (N = 23)

Training program	With triage nurses Group 1			Without triage nurses Group 2			
	A Daily (n = 4)	B Weekend (n = 3)	Total (N = 7)	A Nurse 24 hrs (n = 5)	B GP on call (n = 5)	C RMO's on call (n = 6)	Total (N = 16)
Preceptoring	3	2	5	4	1	2	7
Lectures	2	2	4	2	0	1	3
Assessment skills	2	1	3	2	1	1	4
Interpersonal skills	2	0	2	2	0	0	2
Ongoing education	2	2	4	1	0	0	1

Most receptionists stated, in the telephone interview, that they had learnt by experience or used their common sense or intuition when deciding what was an emergency.

Overall departments in Group 1, with TNs, had more training (71%) than departments in Group 2, without TNs (44%).

5.2 Minimum experience required before nurses triage.

Minimum experience required in the department before nurses were allowed to assess patients, decide on the priority of care and on the most appropriate area for that care, again varied between and within departments. Majority responses were used to determine each department's requirement (see Figure 4). Two departments in Group 2 with GPs on call, required more than 2 years experience. One department with weekend TNs and three without TNs, with GPs on call, required more than 1 years experience. Two departments with daily TNs and one in Group 2 with RMOs on call, required more than 7 months. The remaining 16 departments (70%) from both groups required 0-6 months experience. Comments on improving triage included having only experienced accident and emergency nurses as the triageur.

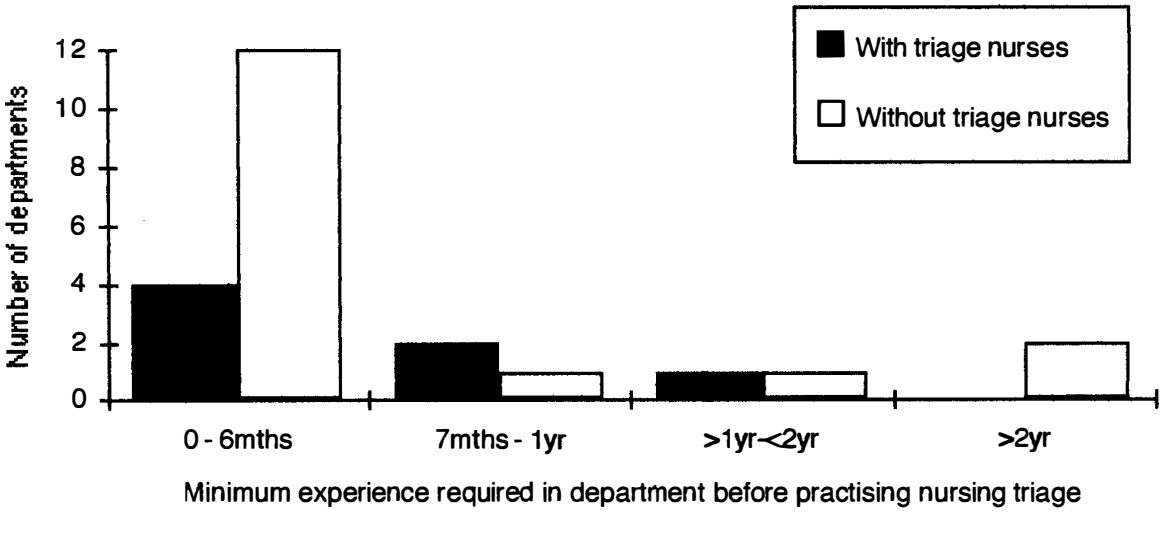

Figure 4. Minimum Experience Required by Hospitals before Allowing Nurses to Triage Patients (N = 23)

Departments with the largest mean number of staff on duty per day, in Group 1 with daily TNs, and smallest mean number of staff on duty per day, in Group 2 with GPs on call, required more experience in the department before triaging than other departments.

5.3 Minimum experience required to order treatments or investigations?

RNs or ENs could treat minor problems or order investigations, with only three departments requiring more than 6 months experience within the department before doing so. These three departments required more than 2 years experience within the department.

When looked at collectively, the nurses in Group 1, with weekend TNs, and all Group 2, without TNs, reported the level of employment required was higher for treating patients than for ordering investigations. Similarly, the level of experience required for making decisions regarding treatment of patients was higher than that required for ordering investigations. This question was not included in the questionnaire sent to departments with daily TNs.

The next chapter discusses these findings.

CHAPTER SIX

Discussion

The purpose of this research was to identify triage systems currently in place in accident and emergency departments, with and without TNs, in Western Australia. The findings of the study are discussed in this chapter .

Each department was surveyed regarding staffing, the number of patient attendances, the organisation of services and current triage practices. It was found that various types of triage systems operate within accident and emergency departments of hospitals within the Health Department of Western Australia. Triage systems varied from formal triage by a TN to informal triage by a receptionist. Some reported practices have legal implications for the triageur and the hospital. Discrepancies related to current practices were reported from within the same department, and are of concern, as it means different practices occur within the one department. Even in departments where policies existed, there were discrepancies in the practices reported. Replies to the questionnaire were the perceptions of staff and may account for the differences in the responses.

Credibility of Nurses Responding to The Survey

The nurses who returned questionnaires had a wide range of experience and represented all levels of nursing staff, from Directors of Nursing to ENs, who were employed in Health Department of Western Australian accident and emergency departments. This wide representation of

respondents was considered as providing as accurate a picture as possible of what happens in each department surveyed.

Staffing and Patient Attendances

There were differences in the responses to these questions within the same department. However, staff perceptions were considered to be the the best way of obtaining this information as the number of patient attendances is difficult to obtain in an accurate way. In annual reports most hospitals report the total out patient attendances and do not distinguish emergency patients from clinic patients. Also the number of patient attendances vary from week to week and month to month and to collect this data in the time span of the study was not possible.

There were also small differences in answers to the number of staff on duty each week. These were accounted for by responses that indicated changes to the number of staff on duty over different days of the week. More staff are employed at busier times, therefore, developing a nurse-patient ratio, by taking a mean across the whole week and using mean patient attendances an overall picture is obtained of the number of nurses required for each patient attending the department.

The difference between nurse-patient ratios for departments was interesting. More nurses were employed in the two departments with RMOs and weekend TNs than the one with GPs on call and weekend TNs. The different requirements for nursing staff numbers within each department may be explained by an increase in nursing care required by departments when RMOs are employed. From the reasearcher's own observation, when RMOs

were introduced into a department, the throughput of patients was slowed because each patient was thoroughly assessed and investigated by the RMO. This resulted in an increase in patients in the department at any one time, thus increasing the amount of nursing care required in observing and treating these patients as well as the time taken in assisting with the increased number of investigations carried out in the department.

Another reason for a difference in the nurse-patient ratios between departments could be related to patient acuity. Higher patient acuity requires more nursing time than patients with lower acuity ratings (Fitzgerald, 1988); therefore, the use of similar triage categories, with acuity ratings for each category, may help to distinguish why there is a difference in nurse-patient ratios between departments.

The study found that departments with the lowest nurse-patient ratio introduced triage when busy. This is consistent with Purnell's (1991) findings of triage systems being introduced when patient attendances were above normal. Metropolitan hospitals with TNs reported the highest nurse-patient ratio and these departments recorded high patient attendance figures.

Interestingly, departments with weekend TNs and departments with 24 hour nursing cover not employing TNs, were found to have similar patient attendance figures to one country department where TNs were employed. Therefore, it was evident that other factors besides patient attendances affected whether TNs are employed in an accident and emergency department.

Although the attendance figures were similar, the nursing staff coverage per day was higher in the one country department with TNs, than the nursing

staff coverage in departments with weekend TNs and departments with 24 hour nursing cover. In theory there is no reason why all departments with exclusive 24 hour nursing cover could not utilise a TN. Comments from staff in departments with exclusive 24 hour nursing cover indicated TNs were currently being considered or could be allocated from within existing staffing levels.

Departments not employing TNs and with RMOs on call, tended to have larger patient attendances than those with GPs on call. The survey figures did not differentiate between out-patient and emergency patients. It may be the case that out-patient attendances are greater in hospitals with RMOs on call because GPs are not always available in country towns where RMOs are employed in hospital outpatient centres. Some smaller hospitals had minor theatre and/or visiting specialists attached to their accident and emergency department, and when these services were operational the number of staff employed in departments increased due to an increase in the patient services required. Where triage is concerned, nursing staff rostered in the department and those who may be just covering the department from other areas, need to triage and prioritise care for emergency patients according to the needs of all the patients within their care, including those located in areas outside the accident and emergency department. In order to encourage patients to use the normal out-patient services one department reported they deliberately kept non-urgent patients waiting after hours.

Organisation of Services

The surveillance of patients entering the department and in the waiting

room was not a problem in departments with TNs. Comments from nursing staff indicated that surveillance problems occurred when nurses were not able to view patients. Some stated that these problems were in the process of being rectified by alterations to their department. Others wanted changes to be made to allow for improved visibility of patients within the department. Holman (1989) recommended guidelines for the physical layout of emergency departments in the metropolitan area of Western Australia. These guidelines included a triage area that allowed access for both ambulance and ambulant patients, close to the entrance that enabled the waiting room to be under the direct supervision of the triage nurse. The guidelines are currently being met by one department.

In this study, due to a lack of privacy in departments with TNs, physical assessment for triage purposes was possible only in departments without triage nurses. Limited triage assessment occurred in 65% of departments surveyed. That is greater than Purnell's (1991) survey which found 45% of triage areas allowed limited triage assessment. Access to a private area for a complete triage assessment was reported by only one department with TNs. Physical assessment was reported to take place in 52% of all departments surveyed, while private conversation could only be achieved in 30% of departments. Purnell's study reported 15% (27) of departments surveyed had a private triage area. In other studies, some researchers recommend the use of a private room for the triage assessment of patients (Grose, 1988; Rock & Pledge, 1991) while other researchers indicated that a private room was provided within their departments (Dickinson, 1988; Saunders, 1987). If a

private room is supplied this would require another person to initially triage the patient, as they could not be in a private room doing patient assessment as well as provide surveillance for incoming and waiting patients. The triage system in departments where TNs were employed covered this situation by having another nurse in the department perform physical assessment after the initial triage decision had been made. A triage system where several nurses were available to perform triage in private rooms would also overcome the problem. However, they require more staff and may not be an efficient use of resources.

The problem of privacy is a very real one and many of the nurses responding to this survey are concerned about this. In departments with TNs, no triage area was found to allow for private conversation. This lack of privacy is being addressed in the USA where some hospitals are now designing their facilities to try to overcome this problem (Hoss, 1992; Weinman et al., 1993). It appears that the lack of privacy for initially interviewing patients needs to be addressed here as well. This is a difficult concept to achieve while still providing surveillance of other patients.

Hand washing facilities were not available to TNs unless they left the triage area. This is something that needs to be urgently addressed by departments as some nurses may not bother to wash their hands if they have to leave the department. This could lead to an increase in infection rates. Rice and Abel (1992) comment that in order to support universal precautions, hand washing facilities are critically important in the triage area.

Triage Practices

First person to see patients on arrival.

Nurses working as TNs in this study concurred with other researcher's findings (Gray, 1991; Williams, 1992) on the positive aspects of triage. These included that patients were seen promptly by a nurse, they were prioritised quickly and sent to an appropriate area for their care. Also the nurse was seen as a resource person able to observe patients and give patients and relatives advice and explanations.

Receptionists triage in most departments and where this occurs, a two-priority category system (urgent and non-urgent) operates which is consistent with Jones' (1988) finding. Nurses from three departments commented that having receptionists as the first person seeing the patient was unsatisfactory as some receptionists were young and inexperienced in dealing with clinical situations.

The findings of this study indicate that in some departments a receptionist sees all patients first and then immediately calls a nurse. Under these circumstances the nurse is the triageur as the receptionist does not distinguish between urgent and non-urgent patients. This is consistent with findings from the USA (Saunders, 1987; Zwicke et. al., 1982) and the UK (Read et al., 1992). However, in large departments Dickinson (1988) has criticised this system of patients being seen by a receptionist first and then triaged by a nurse, on the basis that clerical and not medical staff have the responsibility for making medical decisions, placing undue stress on the limited diagnostic abilities of clerical staff. Therefore, receptionists would be acceptable as the first point of contact only for the purpose of informing the

nurse of the patient's arrival, and only in small departments with nurses on call who can attend to the patient immediately that they are called. No patient should leave the department at any time without being triaged by a nurse, and the triage assessment must be documented.

In some hospitals ENs triage. Parmar and Hewitt (1985) stated ENs were just as accurate in their triage assessment as senior nurses, however, Fitzgerald's (1988) study found that ENs overestimated urgency. In departments with low patient attendances, where there are only a few patients in the department, overestimation of urgency would be more acceptable than underestimation. In these situations, ENs with experience and training would be safe prioritising patients who were to be seen within the department within a short period of time. The Nurses Board of Western Australia (1985) state that the role of an EN is to give support to RNs. An EN may initiate and carry out basic nursing care for persons whose general condition is comparatively unchanged, under the supervision of a RN. Triage by an EN cannot include a physical assessment, as this is beyond their competency skills. They can only take vital observations and visually assess patients. Therefore, it would be inappropriate for ENs to triage in a department where priority decisions based on physical assessment need to be taken. If a system of comparing priority categories between hospitals was introduced, as recommended by Fitzgerald, ENs would not be suitable.

Length of wait to see a nurse.

When a patient was initially seen by a receptionist, the length of wait to see a nurse was acceptable only in departments with TNs. This study found

the mean length of wait to see a nurse was 6 minutes. Rice and Abel (1992) recommend that patients should be seen by a triage nurse within 2 to 5 minutes of arriving in the department. This study found that in seven departments patients regularly waited up to 20 minutes to see a nurse, and in ten departments patients sometimes waited over 20 minutes. Geraci and Geraci (1994) found the length of wait to see a triage nurse could be up to 76 minutes and they were looking at ways to decrease these times by evaluating the duties of the TN.

The shortest wait to see a nurse was in Group 2 departments with GPs on call and the longest in Group 2 departments with RMOs on call. The reason for this discrepancy is not readily apparent, but may be due to outpatient clinics being available in hospitals where RMOs are on call. One nurse respondent commented that they keep non-urgent patients waiting after hours in order to deter them from coming to the hospital after clinic hours.

Deciding priority and appropriate place for treatment.

When patients were redirected away from the department, receptionists were more likely to be the person deciding to redirect them. However, RNs and ENs were reported to be the decision makers when deciding patient priority and the most appropriate place for the patient to be treated. Most examples of receptionists redirecting patients were of visitors requiring prescriptions and patients with minor problems attending when the department was busy and when the patient's own surgery was open. One department's policy of not redirecting patients was ignored when this type of redirection occurred. Only five departments reported that they had written

criteria for redirecting patients.

It is of concern that receptionists redirect patients to GP's surgeries when they do not have any written policies to follow. It is also of concern that they do not keep any written documentation regarding the patient's visit. Nurses in departments with TNs reported that they did not keep documentation on patients they advised to go elsewhere. The practice of redirecting patients away from the department has legal implications for the staff and hospital. All patients should be triaged by trained and experienced nursing staff.

One department with weekend TNs reported that the provision of written criteria for redirecting patients would improve their present system. Young and Dimond (1994) recommend that protocols and guidelines should be written and adhered to, in order to legally cover the nurse when a doctor is not present in a department.

The redirection of patients reported to occur in this study is consistent with findings regarding the general practice type patients that are using accident and emergency departments inappropriately in Western Australian (Carmona, 1994), and also in the USA (Derlet & Nishio, 1990) and in the UK (Mallett & Woolich, 1990). The redirection of patients from metropolitan hospitals with TNs reported in this study, adheres to recommendations made in Western Australia by Holman in 1989: "That general practice type patients not be refused assessment or treatment, but should be advised and redirected to more appropriate medical care, such as the local general practice or after hours centre" (p. 57).

Basis for making triage decisions.

Nurses from departments with TNs, with formal triage systems, reported that they used intuition in making triage decisions more than nurses in departments without TNs, where informal triage systems existed. This does not correspond with George, Westlake et al.'s (1992) description of informal triage being intuitive and formal triage being based on assessment. In the present study, nurses in departments without TNs reported they used physical assessments in their triage decisions more than nurses in departments with TNs. In departments with TNs, full physical assessment was reported to take place after triage by another nurse in the area the patient was allocated. This is consistent with Jones' (1983) finding.

Only 53% of the nurses responding to this survey reported that they used policies and guidelines when making triage decisions. This survey did not specifically ask whether or not policies and guidelines existed within their department, and therefore, it is difficult to make assumptions as to why they were not used.

Formal triage categories.

All departments with TNs and only three departments without TNs had formal triage category systems in place. Of these, five departments had a similar five-category triage system in place. At present, there is a similar triage system to this five-category one being trialled throughout this state. The trial is being conducted to see if all departments can be compared for acuity and costing purposes. This would allow all departments to have the same system and all triage would be conducted in a similar way.

One department reported using the priority category system retrospectively for acuity purposes. Other studies have reported using patient classification systems retrospectively for acuity purposes (Buschiazzo, 1984; Kromash, 1984; Stolley & Hachmann, 1989). These classification systems have similar categories to triage systems.

Setting time limits for each priority category, by which patients should be seen, only occurred in six departments. These were not used for reassessing patients and patients were reassessed on an "as required" basis in most departments.

Information given to patients

Nursing staff provided two types of written information for patients. The first was directions on how to get to a doctor's surgery. This was provided by eight country departments. The second concerned the use of accident and emergency departments. Only one country department provided information on the appropriate use of the department. This provision of information is consistent with Derlet and Nishio's (1990) recommendations that patients be given a list of alternative facilities and with Holman's (1989) recommendation that information be provided informing the public of the role of the emergency department.

Average time taken to triage.

The overall time taken to triage patients in this study was 1 to > 10 minutes. That is comparable with Zwicke et al.'s (1982) findings of 0 to 15 minutes. The mean time for this study of 4.25 minutes is less than the 6.5

minutes found by Estrada (1981) but comparable with Geraci and Geraci's (1994) mean times of between 4.21 to 6.12 minutes.

Hospitals with both TNs and RMOs in the department took no longer than 3 to 5 minutes to initially triage a patient. This finding is consistent with Blythin's (1983) findings. Geraci and Geraci (1994) found that when the department they studied was busy, a quick head to toe assessment took 2 to 3 minutes.

In this study, departments with GPs on call took longer to triage patients. This could be the result of nurses having to do a more intensive triage assessment as they would need to have all available information about the patient prior to contacting the doctor.

The length of time taken to triage would depend on the number of patients waiting to be seen, the thoroughness of the assessment and the competencies of the triage nurse. Geraci and Geraci (1994) found that some nurses used assessment techniques which were cumbersome and time consuming and others used a quick head to toe assessment when they were busy. They suggested that future studies could look at decision making skills, behaviours and characteristics of triage nurses in order to gain a better understanding of the triage role.

Investigations.

All departments allowed nurses to order investigations. Departments with RMOs that did not employ TNs ordered more microbiology tests than other departments. The survey did not question whether there were written policies and guidelines for ordering investigations. Therefore, assumptions

cannot be made on whether nursing staff are legally covered when ordering investigations. X-rays were not ordered by nursing staff, as legally they are not allowed to do this in this state. However, comments by nursing staff indicated that they would like to be able to do this. The literature supports nurses assuming this role as it is a safe practice and also benefits patients by decreasing waiting times. Studies indicate that following an educational program, nurses are competent in the ordering of X-rays. (Jones, 1986; Macleod & Freeland, 1992; Ropp, Blouin, Dulberg & Li, 1990).

Minor problems treated.

Treating minor problems without reference to a doctor occurred in departments where there were no policies in place to cover these situations. Comments from nurses indicated that they would like to have standing orders for treating patients. Specialised nurse practitioners were going to be introduced into two departments to deal with these situations. The role of a nurse practitioner is seen as working independently in diagnosing, treating and discharging patients with minor conditions without referring to a doctor (Burgess, 1992; Dudley, Keltie & Pritty 1993). From the number of nurses in this study reporting that patients were diagnosed, treated and discharged by nursing staff without referring to a doctor, it appears that the nurse practitioner role already exists in many departments. Strange (1994) commented that the introduction of a nurse practitioner into a hospital in South Australia was "in fact, formalising a process that already occurs" (p. 20). It is of concern that at present patient treatment could be undertaken by someone with as little as 6 months experience in the department and not by an experienced senior nurse

as is recommended by Burgess (1992) and Strange (1994). In an effort to decrease patient waiting times there is a growing trend towards using nurse practitioners in extended triage roles in accident and emergency in Australia (Strange, 1994), the USA (Pardee, 1992) and the UK (Burgess, 1992). Clear guidelines for the extent of the role and a training program for nurse practitioners are recommended (Burgess, 1992; Dudley et al., 1993; Pardee, 1992; Strange, 1994).

Documentation.

This study found that patient assessment by nursing staff in departments without TNs was fully documented. This concurs with the recommendations of Rice and Abel (1992). However, departments with TNs did not include details such as allergies, medications and tetanus status. The triage process in departments with TNs, fit Porter's (1992) description of triage that George, Westlake et al. (1992) call undocumented assessment, "the assessment of the degree of urgency of every incoming patients condition" (Porter,1992, p. 1378). George, Westlake et al. do not give reasons as to why they call this type of assessment undocumented, however, it appears to correspond with the findings of this study where full patient assessment and documentation is not carried out at triage, but is completed after triage by other staff within the department. This practice is reasonable for urgent patients and where privacy for assessing patients is a problem for triage nurses.

Preparation of Triage Nurses

Training programs for triage were examined firstly to see if departments had a program specifically for triage and secondly to find out what was actually involved in each departments training program. Prior to commencing the survey a senior nurse in one department remarked that some of the staff might not realise a triage training program was conducted in that department. Therefore, for the purpose of this study, a positive response by any nurse within a department was taken by the researcher to indicate that such a program existed. A triage training program was in place in 47.8% of all departments surveyed. This is greater than the 31.5% of departments that Purnell (1993) found to have either a specific triage course, an extended orientation, a specific assessment course or an inservice program. In departments employing TNs, 71% were reported to have a triage training program. This falls short of the recommended 100% training (Estrada, 1981; Parmar & Hewitt, 1985; Rock & Pledge, 1991; Willis, 1979).

Preceptoring was reported to be the most frequently used method of training. This is similar to the findings of Rock and Pledge (1991). Most departments reported 16 hours was usually provided for preceptoring within their department. Nuttal (1986) found that preceptoring over two or three days was usually required for a trainee to become confident with triage. The length of time reported for learning assessment skills and interpersonal skills training was 1 to 16 hours, with two departments reporting that this was an ongoing program. Overall only one country hospital and three metropolitan hospitals reported that they provided education on patient assessment and interpersonal skills. In developing a training program for triage, in a

department in the UK, Hankey (1994) reported the program involved 19 half days with the main emphasis on interpersonal and assessment skills.

Two metropolitan hospitals reported that they required nursing staff to attend a four week course on emergency nursing before nurses were involved in patient triage. Two hospitals with TNs did not provide any training program at all. Many comments made by nurses in this survey, included the request for more training, orientation and ongoing education.

When comparing metropolitan hospitals and country hospitals it was found that there were 5 (71%) in the metropolitan area with triage training programs and 6 (38%) in the country. Since this study was undertaken a study by another researcher, C. Marsh (personal communication, June 19, 1995), has investigated the triage training needs of rural nurses in Western Australia and steps have been taken to address these needs.

The majority of departments reported that nursing staff were required to have less than 6 months experience in the department prior to triaging patients. Many nurses in departments without TNs commented that the required experience was only a matter of days. Four departments (17%) gave the required experience as being over one year. This study did not specifically ask how much experience in accident and emergency nursing was required, only the experience within the department. One nurse commented that it could depend on the experience of each nurse prior to coming to the department. Therefore, it is inappropriate to compare this study with others as they looked at accident and emergency experience. Rock and Pledge (1991) recommended at least two, but preferably three, years experience in accident and emergency nursing prior to triage.

Departments with the largest and smallest mean number of staff on duty, reported that they required nursing staff to have more experience in the department before triaging than nurses in the other departments. This can be explained in small hospitals, as senior staff are the only ones that cover the department. Departments with the largest number of staff on duty were in metropolitan teaching hospitals with TNs in the department. Some of the comments by nurses in response to improving their triage system included that only senior experienced nurses should be able to triage. This is consistent with other researchers' recommendations that only experienced nurses should triage (Bailey et al., 1987; Yates, 1987).

It is of concern that both RNs and ENs treat patients and order investigations with very little experience behind them.

Evaluation of Triage Systems

The model chosen as a framework for this study was Donabedian's Systems Evaluation Model using eight outcome standards based on standards and criteria recommended for triage by the Australian Council on Healthcare Standards. Each outcome standard will be discussed in relation to the triage structures and processes currently in place as identified in this study.

1. All patients are triaged immediately on arrival by a registered nurse.

All departments with TNs on duty met this standard. The employment of a TN was affected by the number of patient attendances and the number of nursing staff on duty. In most departments without TNs on duty, the standard

was not met because the receptionist was the triageur or the patient waited longer than the recommended time of 2 to 5 minutes to be triaged by a nurse.

2. All triage areas are placed to allow for all patients arriving in the department and within the waiting areas, to be under constant surveillance.

The structure of the department and the placement of the triage area will affect this recommendation. In departments with TNs this standard was met. In most departments without TNs the standard was not met, as nursing staff were unable to view the entrance or the waiting room.

3. All triage areas allow for patient privacy.

The structure of the department did not allow for this recommendation to be met in all departments with TNs. This recommendation was met by seven departments without TNs, specifically, two with exclusive 24 hour nursing staff coverage and five other departments with low patient attendance figures.

4. All triage areas are equipped with adequate facilities to ensure effective care.

Due to a lack of hand washing facilities this standard was not met in all departments with TNs.

5. All patients are triaged into priority categories with emergencies taking priority over non-urgent patients.

All departments with TNs and three departments with exclusive 24 hour nursing coverage met this recommendation by assigning formal triage

category systems to all patients. No other hospital assigned formal triage categories although emergency patients were seen before non-urgent patients. Therefore, this recommendation was not met by all departments.

6. All departments have a documented statement of policy and treatment guidelines which is readily available to all staff.

Although no specific question was asked regarding the existence of policies and guidelines, nurses responded as to whether or not these were used when making triage decisions. Not all nursing staff made use of policies and guidelines when making triage decisions and only one receptionist had policies and guidelines to follow when patients arrived in the department. One metropolitan department with weekend TNs and four country departments without TNs reported that they had written policies for redirecting patients away from the department. All departments reported that nursing staff ordered investigations and treated patients without referring to doctors, however only the country hospitals with RMO cover reported that they had written guidelines. Therefore, this standard was not met by the majority of the departments in the study.

7. Adequate medical records are kept for every patient attendance and all patient visits are recorded.

Departments with TNs and those where receptionists advised patients to go elsewhere did not meet this standard as they did not keep documentation on patients advised to leave the department. Therefore, this standard was not met by most of the accident and emergency departments.

8. All nursing staff employed have appropriate training and experience.

Very few departments required nurses to have over 6 months experience in the department before triaging. Only two metropolitan hospitals did not provide a training program for triage compared to ten country hospitals, including the one with TNs. In all departments with exclusive 24 hour nursing cover, including those with TNs, only three did not provide a training program. Seven training programs provided lectures and assessment skills with only four including the recommended interpersonal skills, two with TNs and two without TNs, with exclusive nursing cover over 24 hours. Therefore, only four departments met this standard of having appropriate training.

The actual accident and emergency experience of nursing staff was not assessed, therefore, the standard regarding experience was not evaluated.

The following chapter summarises the study, draws conclusions and makes recommendations for practice and future research.

CHAPTER SEVEN

Summary, Conclusions, Limitations and Recommendations

This chapter provides a summary of the study findings and presents conclusions from these findings. Limitations of the study are discussed and recommendations made for the implementation of changes to current triage systems and for future research.

Summary of Findings

This study surveyed triage practices in accident and emergency departments, with and without TNs, in Western Australia. The conceptual framework utilised for this study was Donabedian's Systems Evaluation Model. The outcome standards used for this triage systems model, were based on criteria and standards recommended by the Australian Council on Healthcare Standards (1993). Three questionnaires were developed, two similar questionnaires for surveying nursing staff, and a third for a structured telephone interview of receptionists. A pilot study was undertaken to determine reliability and content validity of the two questionnaires sent to nursing staff. One questionnaire was sent to nurses (n = 128) in seven departments with TNs, and the other to nurses (n = 145) in 16 departments without TNs. The third questionnaire was used to interview 14 receptionists in departments without TNs where patients were seen by receptionists prior to seeing a nurse. A total of 23 departments were surveyed with 182 completed and returned questionnaires obtained from nurses on different levels of

employment and with varying experience in accident and emergency nursing.

The survey found that TNs were employed in two groups of departments, those with triage nurses in the department daily, and those with TNs in the department on weekends only. Departments without TNs were divided into departments with nursing staff exclusively employed in the department over 24 hours, and departments not employing nursing staff exclusively in the department with either GPs or RMOs on call. Only one country department employed TNs.

Major findings

The major findings of the study are as follows:

Triage nurses were employed in all departments where patient attendances exceeded 300 per week and nursing staff coverage in the department was higher than five per day. Only one department employing TNs on weekends had less patients and less nurses than these figures indicate. Departments with TNs employed only on weekends reported the lowest nurse-patient ratio (1-74). The highest nurse-patient ratio was reported in departments with TNs (1-35).

Receptionists triaged patients in 12 (88%) departments without TNs and receptionists were the first person to see patients during the day in 18 (78%) of the total departments surveyed. Having receptionists as the triageur was perceived by nurses as being unsatisfactory as some receptionists were young and inexperienced. When patients were seen by a receptionists first, the reported waiting time to see nursing staff was longer in departments without TNs (mean 7.6 minutes) than in departments with TNs (mean 3.7

minutes). In seven departments, one with weekend TNs and six without TNs, patients could wait up to 20 minutes to see a nurse.

In three (43%) departments with TNs and 13 (81%) departments without TNs, nursing staff were unable to provide surveillance of patients entering the department. In three (43%) departments with TNs and six (37.5%) departments without TNs, nursing staff could not see the waiting room. Nursing staff could not see the ambulance entrance in three (43%) departments with TNs and five (31%) departments without TNs.

The area where patients were triaged did not allow for private conversation in any departments with TNs and only seven (44%) departments without TNs allowed for private conversation to take place. Only one (14%) department with TNs and 11 (69%) departments without TNs allowed privacy for physical assessment to take place. Six (86%) departments with TNs and 13 (81%) departments without TNs allowed for first aid to be given. Hand washing facilities were not available in the triage area in departments with TNs.

Ten departments used a formal priority triage system. All departments with TNs used a triage system with five categories. Four departments, two with TNs and two without TNs, used formal triage categories only after receptionists triaged using a two category system.

More nurses in departments without TNs reported that they used physical assessment as a basis for triage decisions than nurses in departments with TNs, whereas intuition was reported as a basis for triage decisions more often in departments with TNs, than departments without TNs. Receptionists also reported that they based their patient priority decisions on intuition.

The average time taken by nursing staff to triage patients was reported to be a mean of 3.2 minutes in departments with TNs and a mean of 5.3 minutes in departments without TNs.

Patients with minor problems were redirected away from a total of 17 (74%) departments. All levels of staff were involved in these referrals, including seven receptionists who reported that they redirected patients away without referral to nursing or medical staff. Written criteria for the redirection of non-urgent patients was reported in only one department with weekend TNs and four without TNs. In four departments with TNs, written documentation was kept when patients were redirected. Only one department kept documentation for redirection of patients by receptionists.

Nursing staff ordered investigations and treated minor problems without referring to a doctor in all departments. Only seven (44%) departments without TNs had written guidelines for treating patients without referring to a doctor.

Training programs for triage were available in five (71%) departments with TNs and seven (44%) departments without TNs. Preceptoring was the most common method of training. The minimum experience nurses were required to have in the department before they could triage varied from 0 to more than 2 years. Sixteen (70%) departments required 0 to 6 months. Nursing staff perceived that triage systems could be improved by having only experienced staff as the triageur.

Conclusions

The conclusions made have been based on the data and findings.

Departments tend to employ TNs, where patient attendances exceed 300 per week and nursing staff coverage of the department exceeds five per day. The employment of TNs tends to occur on weekends only when there is a nurse-patient ratio of approximately 1-74.

The majority of departments without TNs do not have a triage priority category system in place. In the majority of departments, where receptionists perform the initial triage, receptionists tend to rely on their intuition, and use only a two category priority system. This practice of having the receptionist as the triageur may jeopardise patient safety, as some receptionists are young and inexperienced.

When compared with the findings from the literature, the average waiting time to see nursing staff is considered unacceptable in departments without TNs. However, the average time taken by nursing staff to triage patients is acceptable when compared with the findings from the literature.

Triage areas were found to be inadequate, as facilities for private conversation, physical assessment, continuous surveillance and hand washing were not always available.

The practice of redirecting patients away from the department may compromise patient safety, particularly as redirection is performed by all levels of staff, without any written documentation kept, or any written criteria for the redirection of non-urgent patients. Written criteria and policies are also required for the processes of ordering investigations and treating minor problems without referring to a doctor.

Most departments offer an inadequate triage education program of preceptoring only. While in the majority of departments the experience required in the department prior to triaging patients is minimal.

Limitations of the Study

Not all accident and emergency departments within the Health Department of Western Australia, that did not employ staff exclusively in the department over 24 hours, were included in the survey. However, the findings could be generalised to some extent, as the departments included covered most regions of the state and the standards chosen and recommendations made should apply to all departments in Western Australia.

Because no accrurate numerical records were available, the perceptions of the nurses responding to the survey resulted in discrepancies. In the responses to the question concerning the number of patient attendances, it would be more accurate to have data collected over a year for each department.

It would also have been more accurate to have included a weekly total for the number of nursing staff employed in each department.

There was no survey question relating to whether departments had any written policies and procedures specifically for triage within the department, therefore a full evaluation of this area was not possible.

The questionnaire sent to departments employing TNs did not include the experience required prior to ordering investigations and treatments. Therefore, no comparison could be made between the two groups of departments on this point.

The question of experience prior to triaging patients related to experience in the department and not to prior experience in accident and emergency nursing, therefore this area could not be evaluated.

Due to the above limitations it is recommended that furthur validity and reliability testing be undertaken prior to using the survey instrument for future research.

Recommendations

Based on the findings and conclusions the following recommendations are made:

1. In departments where it is impractical to have a TN or to have nursing staff in the department at all times, receptionists need to inform nursing staff as soon as the patient arrives in the department, to ensure that all patients are triaged immediately by a suitably qualified nurse.

2. A review of existing practices needs to be undertaken, in departments where patients are waiting up to 20 minutes to see a nurse, to ensure that all patients are triaged by a nurse within the recommended 5 minutes of their arrival in the department.

3. The lack of hand washing facilities in triage areas needs to be urgently addressed to ensure infection rates are not increased and to support universal precautions.

4. All departments with TNs used a five-category triage system. To allow uniform education programs to be developed and research to be conducted across all departments, a similar five category system needs to be assigned to all patients state wide.

5. Policies and guidelines for triage include:

5.1 All patients need to be reassessed as necessary to ensure that there is no deterioration in the patient's condition.

5.2 No patient should leave a department without being seen by an experienced registered nurse to ensure that there would be no detriment to the patient if they left the department.

5.3 No patient should leave a department without their attendance being documented in order to legally cover the person attending to the patient and to legally cover the hospital.

5.4 Specific circumstances need to be identified for the redirection of patients away from the department, to legally cover the reception staff, the nursing staff and the hospital.

5.5 Specific treatments that may be given and specific investigations that may be ordered by nursing staff, must be identified to legally cover the nursing staff and hospital.

6. All patients redirected away from the department should be given written documentation on the alternative facilities available to them and on the correct use of the accident and emergency department.

7. A formal education program for triage needs to be implemented into all accident and emergency departments to ensure nursing staff are suitably competent before they are allowed to triage patients.

8. The discrepancies in responses between nursing staff from the same department needs to be studied in relation to their level of employment and their experience within the department.

9. Due to the discrepancies in responses in this survey and to achieve

the Australian Council on Healthcare Standards frequent performance and documentation audits should be undertaken.

Future Research

Based on the findings of the research, studies should be conducted that will investigate the reasons why there are differences in nursing staff coverage of accident and emergency departments. Also the reasons for the long wait to see nursing staff in some departments needs to be investigated so that steps can be taken to decrease this time. The redirection of patients away from each accident and emergency department needs to be studied to determine if any deterioration occurs in the patients health status as a result of this action. A survey could be conducted to determine patients' understanding of the correct use of the accident and emergency department, prior to implementing a patient education program. The differences in the perceptions of nursing staff from the same department needs to be studied in relation to their level of employment and their experience within the department.

A study could be undertaken to evaluate whether the use of suitably qualified and educated nurses in the treatment of minor problems would result in improved patient outcomes including a reduction in waiting times. Another study could be undertaken into the benefits of suitably qualified and educated nurses ordering X-ray examination.

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APPENDIX A

Letter of Permission to Use Questionnaires

PORTSMOUTH AND SOUTH EAST
HAMPSHIRE HEALTH AUTHORITY

ACCIDENT + EMERGENCY
DEPT.

11.11.91.

Dear Geraldine,

I enclose a copy of our completed research on Triage, from which our article was extracted.

It includes copies of the two questionnaires we used in the questionnaire.

We give our permission for you to use them; the questions were devised by Mary Pledge & myself and the layout designed by Mr Harmer Rock.

We had no previous research experience & neither of us had any background skills at really any ideas about how to start!

It was a massive task and we analysed our results by hand.

We did pilot our second questionnaire which was used for the structured interviews.

Since our work on Triage we have recently submitted an article for publication on the role of the Emergency Nurse Practitioner which has been established in the department. (as yet unpublished)

I also enclose a copy of our current Triage/Nurse Practitioner Protocol.

Recently the British Government has issued a Patients Charter which states that all patients attending Accident & Emergency departments will be seen and assessed immediately by a trained nurse.

I hope this information is of use to you and good luck in your studies.

Yours sincerely
Denise Rock

APPENDIX B

QUESTIONNAIRE 1

SURVEY OF TRIAGE IN WESTERN AUSTRALIAN ACCIDENT AND EMERGENCY DEPARTMENTS

DEPARTMENTS WITH A DESIGNATED TRIAGE NURSE

SECTION A

1) How many beds are there in your hospital? _____

2) How many patients do you see in A & E

per annum? _____

or

per week? _____

3) How many nursing staff on duty in department?

	CN	RN	EN	TOTAL EACH SHIFT
AM	_____	_____	_____	_____
PM	_____	_____	_____	_____
NOCTE	_____	_____	_____	_____

PLEASE TICK THE APPROPRIATE ANSWER TO EACH QUESTION

4) Is your hospital Metropolitan? ☐

or

Country? ☐

5) How is your department covered by medical staff?

Resident medical staff within your department ☐

Resident medical staff on call within the hospital ☐

GPs on call ☐

SECTION B

PLEASE TICK THE APPROPRIATE ANSWER TO EACH QUESTION

1) When a triage nurse is on duty, who sees the patient first?

Receptionist ☐

Triage Nurse ☐

Other - Please Specify _____

2) Who practises nursing triage?

RN only ☐

EN only ☐

RN or EN ☐

3) What minimum experience must staff have in the department before practising nursing triage?

0 - 6 months ☐

7 months - 1 year ☐

More than 1 year, but less than 2 years ☐

More than 2 years ☐

4) Do you have a separate training program for triage nurses?

YES ☐

NO ☐ If no proceed to Question (6)

IS IT INCLUDED IN A & E TRAINING PROGRAM? YES ☐

NO ☐

5) What is involved in the triage training program?

PLEASE TICK ALL THE APPROPRIATE ANSWERS

Preceptoring ☐ How many hours involved? _____ hrs

Lectures ☐ How many hours involved? _____ hrs

Assessment skills ☐ How many hours involved? _____ hrs

Interpersonal skills ☐ How many hours involved? _____ hrs

6) How long has nursing triage been practiced in your department?

Less than 1 year ☐

1 - 5 years ☐

6 - 10 years ☐

11 - 15 years ☐

More than 16 years ☐

7) Is a triage nurse on duty...

24 hours a day? ☐

During day only? ☐ Please specify hours

_____

Only on Weekdays? ☐

Only during busy times/ days? ☐ Please specify times/ days

_____

8) Is the triage nurse used for other duties if the department is busy?

YES ☐

NO ☐

9) When no triage nurse on duty in the triage area, who sees patient first?

Receptionist ☐

Nurse ☐ Proceed to Question (12)

Other - Please specify _____

10) When no triage nurse is on duty in the triage area, can waiting patients be observed by:

Receptionist ☐

Nurse ☐

Other - Please specify _____

11) When the receptionists sees the patient first approximately how long could a patient be kept waiting to see a nurse?

PLEASE TICK ONE ANSWER ONLY IN THE USUALLY COLUMN, PLEASE INDICATE THE APPROXIMATE PERCENTAGE OF THE TIME TO <u>ALL</u> OF THE SOMETIMES COLUMN.

	USUALLY = at least 80% of the time	SOMETIMES = APPROX % of the time
1 - 3 MINUTES	☐	☐
4 - 5 MINUTES	☐	☐
5 - 10 MINUTES	☐	☐
10 - 20 MINUTES	☐	☐
More than 20 MINUTES	☐	☐

12) Which patients are triaged by the triage nurse?

	YES	NO
All patients who attend department?	☐	☐
Only WALKING WOUNDED (i.e. does not include those arriving by ambulance)	☐	☐

13) How do triage nurses decide how urgently, and where, a patient needs to be seen?

PLEASE TICK ALL THE APPROPRIATE ANSWERS

	YES	NO
Have written policy and guidelines in the department	☐	☐
By visual and verbal assessment	☐	☐
By physical assessment	☐	☐
By experience	☐	☐
By intuition	☐	☐

Other - please specify _____

14) Do you have written formal categories for triage?

YES ☐

NO ☐ If no proceed to Question (23)

15) Do the categories correspond to those used for disaster situations?

YES ☐

NO ☐

16) How many triage categories do you have?

TWO ☐

THREE ☐

FOUR ☐

FIVE ☐

MORE THAN FIVE - Please specify _____

PLEASE GIVE DETAILS OF EACH CATEGORY _____

_____

_____

_____

_____

_____

_____

_____

17) Do you document patient category in the patient notes?

YES ☐

NO ☐

18) Do you have colour codes for categories?

YES ☐ Please specify below

NO ☐ If no proceed to Question (20)

Colour codes _____

_____

_____

_____

_____

19) Do you document the colour code in the patient notes?

YES ☐

NO ☐

20) Do you have time limits, for each priority category, by which each patient should be seen by a doctor?

YES ☐ Please specify below

NO ☐

Time limits for each category _____

_____

_____

_____

21) Do you reassess patients, under the supervision of the triage nurse, at specified time intervals?

YES ☐ Please specify below

NO ☐

Reassessment times _____

_____

_____

_____

22) Do you have a system of seeing a specified number of one category of patients before any of the next category?

For example: See three semi urgent patients to one non urgent.

YES ☐ Please specify below

NO ☐

Category delays _____

_____

_____

23) What is the average length of time taken for triage?

1 - 3 MINUTES ☐

4 - 5 MINUTES ☐

6 - 10 MINUTES ☐

More than 10 MINUTES ☐

24) What is documented by the triage nurse?

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
Demographic details: e.g. age, date of birth, address, next of kin	☐	☐
History of presenting complaint	☐	☐
Temperature, Pulse and BP	☐	☐
Allergies	☐	☐
Present medications	☐	☐
Tetanus cover	☐	☐

Other - please specify _____

_____

_____

_____

_____

25) Is triage documentation:

	YES	NO
Part of the patients notes?	☐	☐
A separate document:		
included in patients notes	☐	☐
not included in patient notes	☐	☐
not retained	☐	☐

Other - please specify _____

26) Is triage documentation signed by the triage nurse?

YES ☐

NO ☐

27) Can the triage nurse redirect non urgent patients to a GP without reference to a doctor?

YES ☐

NO ☐ If no proceed to Question (32)

28) Do you have written criteria for redirecting patients?

YES ☐

NO ☐

29) Is documentation always kept if a patient is redirected?

YES ☐

NO ☐

30) Is the patient given written directions to a GP?

YES ☐

NO ☐

31) If redirected to a GP, is the patient given written information as to when it is appropriate to use the accident and emergency department?

YES ☐

NO ☐

32) What minor problems do you treat without reference to a doctor?

_____

_____

_____

_____

_____

_____

33) Do you have written guidelines for treating minor problems?

YES ☐

NO ☐

34) Are there any investigations that the triage nurse may order without reference to a doctor?

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
X-rays	☐	☐
Blood sugar level	☐	☐
Peak flows	☐	☐
ECG	☐	☐

Other - please specify _____

35) Does the triage nurse obtain the patients previous notes?

YES ☐

NO ☐

36) Does the triage nurse instigate first aid?

YES ☐

NO ☐

37) Is the triage nurse informed of the location of all nurses within the department, at all times?

YES ☐

NO ☐

38) Does the triage nurse deal with all phone enquiries requesting advice and information?

YES ☐

NO ☐

39) Does the location of the triage nurse:

	YES	NO
Allow for private conversation	☐	☐
Allow for visual assessment to take place	☐	☐
Allow for physical assessment to take place	☐	☐
Allow for first aid treatment	☐	☐

40) Where is the triage nurse located in the department?

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
At the reception desk	☐	☐
Separate area near the reception desk	☐	☐
Able to view all patients entering department	☐	☐
Able to view ambulance entrance	☐	☐
Overlooking the waiting room	☐	☐
Separate assessment room	☐	☐

Other - please specify _____

41) What facilities are available to the triage nurse?

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
Hand washing facilities	☐	☐
Internal phone	☐	☐
External phone	☐	☐
Ambulance phone	☐	☐
Emergency call facilities	☐	☐
TPR & BP equipment	☐	☐
Glucometer	☐	☐
Ice packs	☐	☐
Splints	☐	☐
Dressings and bandages	☐	☐
Gloves	☐	☐

Other - please specify _____

SECTION C

1) Do you consider your triage system has any negative aspects, or problems?

YES ☐ Please specify below

NO ☐

Negative aspects or problems _____

_____

_____

_____

_____

_____

_____

_____

2) Do you consider your triage system has any positive aspects for your patients or department?

YES ☐ Please specify below

NO ☐

Positive aspects _____

_____

_____

_____

_____

_____

_____

_____

3) Please comment on any point you wish to make about your department, in relation to the above questionnaire, on how you could improve your system?

4) Have you any suggestions for other departments which you consider is a positive aspect of your system?

5) How many years have you been employed in accident and emergency nursing?

Less than 6 months ☐

More than 6 months but less than 1 year ☐

More than 1 year but less than 2 years ☐

More than 2 years but less than 5 years ☐

More than 5 years but less than 10 years ☐

More than 10 years ☐

6) How many years have you been employed since you have completed your initial nursing education diploma/degree?

Less than 6 months ☐

More than 6 months but less than 1 year ☐

More than 1 year but less than 2 years ☐

More than 2 years but less than 5 years ☐

More than 5 years but less than 10 years ☐

More than 10 years ☐

7) Please indicate your present level of employment

Clinical Nurse Specialist ☐

Clinical Nurse ☐

Registered Nurse ☐

Enrolled Nurse ☐

Other - please specify _____

THANKYOU FOR COMPLETING SUCH A LONG QUESTIONNAIRE

YOUR CO-OPERATION IS MOST APPRECIATED

PLEASE RETURN TO: Mrs G. M. RIORDAN

[redacted]

APPENDIX C

QUESTIONNAIRE 2

SURVEY OF WESTERN AUSTRALIAN ACCIDENT AND EMERGENCY DEPARTMENTS

DEPARTMENTS WITHOUT A DESIGNATED TRIAGE NURSE

SECTION A

1) How many beds are there in your hospital? _____

2) How many patients do you see in A & E

per annum? _____

or

per week? _____

3) How many nursing staff on duty in department?

	CN	RN	EN	TOTAL EACH SHIFT
AM	_____	_____	_____	_____
PM	_____	_____	_____	_____
NOCTE	_____	_____	_____	_____

PLEASE TICK THE APPROPRIATE ANSWER TO EACH QUESTION

4) Is your hospital Metropolitan? ☐

or

Country? ☐

5) How is your department covered by medical staff?

Resident medical staff within your department ☐

Resident medical staff on call within the hospital ☐

GPs on call ☐

SECTION B

PLEASE TICK THE APPROPRIATE ANSWER TO EACH QUESTION

1) Who sees the patient on arrival?

Receptionist ☐

Nurse ☐

Other - Please specify _____

2) When the receptionists sees the patient first, approximately how long could a patient be kept waiting to see a nurse?

PLEASE TICK ONE ANSWER ONLY IN THE USUALLY COLUMN, PLEASE INDICATE THE APPROXIMATE PERCENTAGE OF THE TIME TO ALL OF THE SOMETIMES COLUMN.

	USUALLY = at least 80% of the time	SOMETIMES = APPROX % of the time
1 - 3 MINUTES	☐	☐
4 - 5 MINUTES	☐	☐
5 - 10 MINUTES	☐	☐
10 - 20 MINUTES	☐	☐
More than 20 MINUTES	☐	☐

3) Does the location of the nurse and/ or receptionist in the department allow:

PLEASE TICK ALL APPROPRIATE ANSWERS

	NURSE	RECEPTIONIST
Visibility of all patients entering department	☐	☐
Visibility of ambulance entrance	☐	☐
Visibility of the waiting room	☐	☐

4) Does the area where the patient is interviewed for their initial assessment:

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
Allow for private conversation	☐	☐
Allow for visual assessment to take place	☐	☐
Allow for physical assessment to take place	☐	☐
Allow for first aid treatment	☐	☐

5) Who decides the priority of patient care. That is, if one patient needs to be seen before another because their problem is more urgent?

Receptionist ☐

Registered Nurse only ☐

Enrolled Nurse only ☐

RN or EN ☐

Receptionist or RN or EN ☐

Other - Please specify _____

6) Who decides the most appropriate place for the patient to be seen for their treatment. For example, the major treatment area, minor treatment area, consulting room or sent to see a GP.

Receptionist ☐

Registered Nurse only ☐

Enrolled Nurse only ☐

RN or EN ☐

Receptionist or RN or EN ☐

Other - Please specify _____

7) What minimum experience must staff have in the accident and emergency department, before assessing patients and deciding the priority of their care and the most appropriate area for their care?

0 - 6 months ☐

7 months - 1 year ☐

More than 1 year, but less than 2 years ☐

More than 2 years ☐

8) What is the average time taken to initially interview and assess a patient?

1 - 3 MINUTES ☐

4 - 5 MINUTES ☐

6 - 10 MINUTES ☐

More than 10 MINUTES ☐

9) Do you have a training program for the person making decisions on:

i) patient assessment

YES ☐

NO ☐

ii) the priority of patient care

YES ☐

NO ☐

9) (Continued). Do you have a training program for the person making decisions on:

iii) sending patients to the most appropriate area for their care?

YES ☐

NO ☐

If you have answered no to all sections of this question proceed to Question (11)

10) What is involved in the training program?

PLEASE TICK ALL THE APPROPRIATE ANSWERS

Preceptoring ☐ How many hours involved? _____ hrs

Lectures ☐ How many hours involved? _____ hrs

Assessment skills ☐ How many hours involved? _____ hrs

Interpersonal skills ☐ How many hours involved? _____ hrs

11) How does the person who assesses the patient and prioritises their care, decide how urgently, and where, a patient needs to be seen?

PLEASE TICK ALL THE APPROPRIATE ANSWERS

	YES	NO
Have written policy and guidelines in the department	☐	☐
By visual and verbal assessment	☐	☐
By physical assessment	☐	☐
By experience	☐	☐
By intuition	☐	☐

Other - please specify _____

12) Do you have written formal categories for prioritising care?

YES ☐ Please specify below

NO ☐ If no proceed to Question (18)

Number of categories TWO ☐

THREE ☐

FOUR ☐

FIVE ☐

MORE THAN FIVE - Please specify _____

PLEASE GIVE DETAILS OF EACH CATEGORY _____

_____

_____

_____

_____

_____

_____

_____

13) Do the categories correspond to those used for disaster situations?

YES ☐

NO ☐

14) Do you document patient category in the patient notes?

YES ☐

NO ☐

15) Do you have colour codes for categories?

YES ☐ Please specify below

NO ☐

Colour codes _____

_____

_____

_____

_____

_____

16) Do you document the colour code in the patient notes?

YES ☐

NO ☐

17) Do you have time limits, for each priority category, by which each patient should be seen by a doctor?

YES ☐ Please specify below

NO ☐

Time limits for each category _____

_____

_____

_____

18) Do you reassess all patients waiting to be seen by a doctor, at specified time intervals?

YES ☐ Please specify below

NO ☐

Reassessment times _____

_____

_____

19) What is documented by a nurse prior to a patient being seen by a doctor?

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
Demographic details: e.g. age, date of birth, address, next of kin	☐	☐
History of presenting complaint	☐	☐
Temperature, Pulse and BP	☐	☐
Allergies	☐	☐
Present medications	☐	☐
Tetanus cover	☐	☐

Other - please specify _____.

_____

_____

_____

_____

20) Is the documentation as described in Question (19):

	YES	NO
Part of the patients notes?	☐	☐
A separate document:		
included in patients notes	☐	☐
not included in patient notes	☐	☐
not retained	☐	☐

Other - please specify _____

21) Is triage documentation, as described in Question (19) signed by the nurse?

YES ☐

NO ☐

22) Can non urgent patients be redirected to a GP without reference to a doctor?

YES ☐

NO ☐ If no proceed to Question (29)

23) Who makes the decision if a patient is redirected without reference to a doctor?

Receptionist ☐

Registered Nurse only ☐

Enrolled Nurse only ☐

RN or EN ☐

Receptionist or RN or EN ☐

Other - Please specify _____

24) What minimum experience must staff have in the department, before redirecting a patient without reference to a doctor?

0 - 6 months ☐

7 months - 1 year ☐

More than 1 year, but less than 2 years ☐

More than 2 years ☐

25) Do you have written criteria for redirecting patients?

YES ☐

NO ☐

26) Is documentation always kept if a patient is redirected?

YES ☐

NO ☐

27) Is the patient given written directions to a GP?

YES ☐

NO ☐

28) If redirected to a GP, is the patient given written information as to when it is appropriate to use the accident and emergency department?

YES ☐

NO ☐

29) What minor problems do you treat without reference to a doctor?

_____

_____

_____

30) Do you have written guidelines for treating minor problems without reference to a doctor?

YES ☐

NO ☐

31) Who makes the decision to treat a patient without reference to a doctor?

Registered Nurse only ☐

Enrolled Nurse only ☐

RN or EN ☐

Other - Please specify _____

32) What minimum experience must staff have in the department before treating a patient without reference to a doctor?

0 - 6 months ☐

7 months - 1 year ☐

More than 1 year, but less than 2 years ☐

More than 2 years ☐

33) Are there any investigations that may be ordered without reference to a doctor?

PLEASE TICK ALL APPROPRIATE ANSWERS

	YES	NO
X-rays	☐	☐
Blood sugar level	☐	☐
Peak flows	☐	☐
ECG	☐	☐

Other - please specify _____

_____

_____

34) Who makes the decision to order investigations without reference to a doctor?

Registered Nurse only ☐

Enrolled Nurse only ☐

RN or EN ☐

Other - Please specify _____

7) What minimum experience must staff have in the department before ordering investigations without reference to a doctor?

0 - 6 months ☐

7 months - 1 year ☐

More than 1 year, but less than 2 years ☐

More than 2 years ☐

SECTION C

1) Would the introduction of a nurse with the following specific duties, be of benefit to your department?

   i) Be the first person to see the patient on their arrival in the department, that is, before the receptionist

   ii) Assess the patient

   iii) Prioritise the patient's care and assign the area for that care

   iv) Handle all telephone and ambulance calls

   v) Able to view the waiting room

YES ☐

NO ☐

2) Would the introduction of a nurse, as described in Section C, Question (1), require extra staff in your department?

YES ☐

NO ☐

3) Would major changes be necessary to the layout of the department to allow the introduction of a nurse as described in Section C, Question (1). Privacy for interviewing and assessment must be taken into account when considering this.

YES ☐

NO ☐

4) Please comment on any point you wish to make about your department, in relation to the above questionnaire, on how you could improve your system?

5) Have you any suggestions for other departments which you consider is a positive aspect of your system?

6) How many years have you been employed in accident and emergency nursing?

Less than 6 months ☐

More than 6 months but less than 1 year ☐

More than 1 year but less than 2 years ☐

More than 2 years but less than 5 years ☐

More than 5 years but less than 10 years ☐

More than 10 years ☐

7) How many years have you been employed since you have completed your initial nursing education diploma/degree?

Less than 6 months ☐

More than 6 months but less than 1 year ☐

More than 1 year but less than 2 years ☐

More than 2 years but less than 5 years ☐

More than 5 years but less than 10 years ☐

More than 10 years ☐

8) Please indicate your present level of employment

Clinical Nurse Specialist ☐

Clinical Nurse ☐

Registered Nurse ☐

Enrolled Nurse ☐

Other - please specify _____

THANKYOU FOR COMPLETING SUCH A LONG QUESTIONNAIRE

YOUR CO-OPERATION IS MOST APPRECIATED

PLEASE RETURN TO: Mrs G. M. RIORDAN

[redacted]

APPENDIX D

Structured Telephone Interview of Receptionists

1) What do you do when a patient arrives in the hospital?

2) How do you decide if they need to have medical treatment straight away?

3) Do you have anything written to say when to call medical or nursing staff for patients urgently?

4) Have you been given any education on when to call medical or nursing staff to see patients?

5) Have you ever referred patients to a doctors surgery without first getting nursing staff to see them?

6) Have any patients been sent elsewhere without any documentation being made about them?

APPENDIX E

Content Validity Questionnaire

The PURPOSE of this questionnaire is to determine any significant differences in relation to the person performing triage, their responsibilities and the organisation and staffing of the department.

DEFINITIONS FOR THIS STUDY:

TRIAGEUR: The first person to have contact with the patient on their arrival in the department.

RESPONSIBILITIES: The responsibilities of the triageur include patient assessment, treatments, ordering of investigations, documentation, phone enquiries, knowing the location of all patients within the department and any redirection of the patient.

ORGANISATION: Organisation includes the area where the triageur is located, the equipment available to the triageur, the design of the department and the staffing of the department.

PLEASE RATE EACH QUESTION FOR ITS RELEVANCE TO THE PURPOSE OF THIS STUDY

SECTION A

	RELEVANT FOR PURPOSE	
QUESTION	**YES**	**NO**
(1)	☐	☐
(2)	☐	☐
(3)	☐	☐
(4)	☐	☐

SECTION B

QUESTION	RELEVANT FOR PURPOSE YES	NO
(1)	☐	☐
(2)	☐	☐
..... (continued to) (42)	☐	☐

SECTION C

QUESTION	RELEVANT FOR PURPOSE YES	NO
(1)	☐	☐
(2)	☐	☐
(3)	☐	☐
(4)	☐	☐

Are there any other areas or questions which you consider have not been addressed by the questionnaire?

APPENDIX F

Letters of Approval for the Study

1. Edith Cowan University

EDITH COWAN
UNIVERSITY
PERTH WESTERN AUSTRALIA
CLAREMONT CAMPUS

Office of Research and Development

Goldsworthy Road Claremont
Western Australia 6010
Telephone (09) 383 0333
Facsimile (09) 383 1786

LETTER OF APPROVAL

Name: Ms Geraldine Riordan,

Home address: [redacted]

Dear Geraldine,

The Committee for the Conduct of Ethical Research has considered the ethical implications of your research project and I am pleased to advise it has been cleared for implementation.

Yours sincerely,

[redacted]

Eric Graham
Committee for the Conduct of Ethical Research

26th November, 1992

Approval number 92/ H 117

2. Commissioner of Health For Western Australia

[redacted] Western Australia

Health Department of Western Australia

Your ref
Our ref
Enquiries Susanne Williams 222 4076

Ms G M Riordan
[redacted]

Dear Ms Riordan

I refer to your letter requesting permission to conduct a survey related to nursing triage in Accident and Emergency Departments.

Your survey, as outlined in the abstract you submitted, may enhance a project being implemented by this department and I would suggest that you contact the Project Manager to clarify areas of common concern. (copy of advertisement attached).

In principle I have no objection to you conducting the survey as proposed, however, as management of hospitals is largely devolved to regions, it will be necessary for you to obtain permission from each hospital you intend to survey, via each Regional Director. I have appended a list of contacts for you.

May I take this opportunity to wish you well in your studies. I would be most interested to receive the results of your survey once written.

Yours sincerely

[redacted]
Paul W Solomon
A/COMMISSIONER OF HEALTH

11 January 1993

30111SW2

189 Royal St East Perth WA 6004 Tel (09) 222 4222
Telegrams WAHEALTH Letters PO box 8172 Stirling St Perth 6849

3. Sample Letter to the Directors of Regional Health Services

[redacted]
Date

Mr B Clarke
Acting Regional Director
Pilbara Health Region

Dear Sir,

Please find enclosed an abstract for a study I wish to do as part of my Master of Nursing course at Edith Cowan University. I would like your permission to conduct this survey within general hospitals of the Health Department of Western Australia, Pilbara Health Region, that have Accident and Emergency Departments staffed over 24 hours per day. I presently work in a regional hospital in Western Australia and feel the introduction of a formal triage system would be beneficial. Permission has been granted by the Committee for the Conduct of Ethical Research, Edith Cowan University (approval number 92/H117), for this study to be completed as a requirement for my degree.

A/Commissioner of Health, P. Solomon has informed me that in principle he has no objection to my conducting the survey, within all regions of the state, however, I need to obtain your permission to conduct the survey within hospitals in your region. If permission is granted, could you please supply a list of hospitals within your region, that have Accident and Emergency departments that are staffed 24 hours per day and also a list of those hospitals where there are nurses designated as triage nurses on duty within the Accident and Emergency department.

Should you require any further information please do not hesitate to contact me.

Thanking you in anticipation.
Yours sincerely

Geraldine M. RIORDAN

APPENDIX G

Covering Letter to all Participants

[redacted]
[redacted]

Date

Dear Sir / Madam,

As part of my studies at Edith Cowan University, for Masters of Nursing, I am conducting a survey on triage, within general hospitals of the Health Department of Western Australia that have staff in the Accident and Emergency Department 24 hours a day.

The purpose of this survey is to identify triage systems currently in place and to identify how triage is affected by the staffing and organisation of the department, the number of patient attendances, and the responsibilities of the triage person. Departments with a designated triage nurse will be compared with those departments without a designated triage nurse. From the information received I will be able to recommend a system that will be effective within any department. This information will be of particular benefit to country hospitals, with smaller patient attendance figures.

A number of nurses from your department have been asked to complete this questionnaire. Could you please answer the questions without consulting with these nurses.

All responses to this questionnaire will be kept confidential. A summary will be sent to your department on completion of the study.

Thank you for your time in completing this questionnaire. Please find enclosed a stamped, addressed envelope for the return of the questionnaire.

If you have any queries please feel free to contact me.

Thanking you,
Yours sincerely

Geraldine M. RIORDAN

APPENDIX H

Facilities Available to the Triage Nurse at Metropolitan Hospitals as Reported by a Majority of Respondents

Facility	Hospital A	Hospital B	Hospital C
Hand washing	no	no	no
Gloves	yes	yes	yes
Internal phone	yes	yes	yes
External phone	yes	yes	yes
Ambulance phone	no	yes	no
Interpreter phone [a]	-	-	yes
Security bell [a]	-	yes	yes
Orderly room nearby [a]	-	yes	yes
Emergency call	yes	yes	yes [b]
Oxygen and suction [a]	yes	yes	-
Oropharyngeal airways [a]	-	yes	yes
Air Viva [a]	-	yes	-
Resuscitation mask [a]	-	-	yes
Fire blanket [a]	-	yes	-
Temperature, pulse, respiration and blood pressure	yes [c]	no	no
Glucometer	no	no	no
Peak flow meter [a]	yes	-	-
Ice packs	no	yes	no
Dressings and bandages	yes	yes	yes
Splints	yes	yes	no
Slings [a]	-	yes	-
Eye pads [a]	-	yes	-
Emesis bowls [a]	yes	yes	-
Mid stream urine packs [a]	yes	-	-
Tissues [a]	-	yes	yes
Resource file [a]	-	yes	yes
Intercom system to all department [a]	-	-	yes

Note. A dash indicates no respondent nominated this item.

[a] Included by any nurse from each hospital when asked what other facilities available. [b] Does not have cardiac arrest bell. [c] Only temperature, pulse and respiration