Patients who present to the Emergency Department but do not wait

An exploratory study

by

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Glossary of Terms

ACEM	-	Australasian College of Emergency Medicine
ANA	-	American Nurses Association
ATS	-	Australasian Triage Scale
CENA	-	*College of Emergency Nurses Australia*
CENNZ	-	*College of Emergency Nurses New Zealand*
DHB	-	*District Health Board*
DNW	-	*Did not wait*
ED	-	*Emergency Department*
ENA	-	*Emergency Nurses Association*
GP	-	*General Practitioner*
ID	-	*Irregular Discharge*
LD	-	*Left Department*
MoH	-	*Ministry of Health*
MUHEC	-	*Massey University Human Ethics Committee*
NZ	-	*New Zealand*
PHO	-	*Primary Health Organisation*
SD	-	*Self Discharge*

Abstract

People who do not require urgent treatment often visit Emergency Departments. Furthermore, a small - yet significant - group leave the Emergency Department (ED) before even being seen by a doctor. Previous studies suggest that most people who do not wait (DNW) having presented to the ED and then leave without being seen by a doctor may have non-urgent conditions. However, other studies contradict this.

This is an exploratory study into this subject. Its main aims are to:

- correctly define this DNW group who present to EDs;
- identify the size of a DNW population in a New Zealand setting;
- establish common factors that influence people's decision to present then leave and;
- ascertain whether nursing practice may impact on this population of emergency presentations.

Data collection took place, over a period of 4 months, in a Level 5 District Health Board Emergency Department in New Zealand. The study uses a retrospective cross-sectional postal survey design to secure data on people's experiences of the ED, asking them, amongst other things, why they did not wait. The study sample consisted of 642 people. 489 people were sent postal surveys which resulted in a response rate of 18% (n = 92). Data was analysed and compared using a combination of quantitative and qualitative techniques, using SPSS© and MS Excel© statistics software, elements of operations research (field observation) and content analysis. Subjective data was illuminated and extended by qualitative methods, namely interpretative and descriptive content analysis and an abstract conceptualisation of the themes generated is offered. Regional Ethics Committee approval was sought and granted prior to this investigation commencing.

The results indicate that the majority of DNWs occur during daylight hours. The mean age of those who DNW was 27 years. They tended to be male. The greatest proportion of the DNW population analysed lived locally and waited a mean time of 112 minutes before choosing to leave. All Australasian Triage Scale categories (except ATS 1) demonstrated examples of those who took a DNW discharge. The most common complaints people presented with were ones they had endured for more than 12 hours and were sometimes days old. A high proportion of people reported that they received definitive treatment within 12 -24 hours following their departure from the ED. Common themes identified as reasons people chose to leave the ED related to their perception of action, perception of their illness and environment. Additional themes extracted from the data that influenced people's decisions to leave concerned their perceptions of staff communication/behaviour; systems processes; feelings of abandonment; other commitments and waiting time.

Preface

The nature of trauma and emergency nursing can be inherently stressful and arduous, whilst at the same time rewarding and gratifying, from the very challenges it asks and demands of those who deliver these services daily. This unusual paradox expresses itself in terms of the physical demands and mental stamina necessary to be a kind of 'jack-of-all-trades-and-master-of-none' whilst simultaneously *embroidering* the rational and intellectual burdens the profession demands to further express, define and protect its ideals and principle beliefs. It is often challenging, for example, to demonstrate the sufficient degree of rationality expected when faced with such absurdity or unrealistic-expectation that often abound from a public whose anticipation and demand for its services increases exponentially. And, at such a pace too, that it is almost impossible to keep up with in the context of dwindling human and material resources with which most health professionals usually have to contend. Despite all this, however, emergency nurses' trudge on and this study could be considered a testament to those aforementioned attributes that are perhaps intrinsic to the very nature of nursing but more particularly within in this specialty.

It is these dimensions that have, in their own small way, influenced this study. When I initially approached some colleagues to inform them of my decision to research this topic, their responses were varied but included: "*Why? It's all to do with waiting too long, isn't it*?" If that were true, immersing myself in this subject for the last 12 months would have been straightforward – I already had the answer, hadn't I? However, it would be fair to say that nursing practice must continually look for ways to improve itself and, perhaps more importantly, it needs to better define itself and the ways it does things to benefit people and the service they provide. In this context 'people' are those who present to Emergency Departments looking, quite simply, for help. This study does not seek to define if those who DNW in EDs are inappropriate – that is another research question. The results of this research study aim to clarify some facts that may offer nurses the means they require to suggest those changes (they may already know instinctively or intuitively) they need to make within their own settings. Provision of care, after all, is the business of nurses worldwide. It is not necessarily the business of nurses, however, to ask first whether their provision of help/care is appropriate or not. Another way of putting it might be this: people who do not wait are those who do not get help when they want or need it. This is where I started my investigation.

It was for these reasons (and others) that I felt compelled to undertake a project that I hoped would add something which not only alluded to helping people but might also help to better define what nurses do. I hope that you will find some value and learn from the pages that follow.

Acknowledgements

Typically, behind any research project is a wealth of precious *hidden treasures* whose contribution to the project (and its completion on time) have been tacit, salient yet hugely invaluable. This study is no exception. My list of hidden treasures includes the contribution of the following generous individuals:

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My sincere thanks must also extend to my fellow charge nurses and the members of, if I may be so bold, *my* team – Angela Joseph, Iona Bichan and Beth Dickins. Thanks for 'covering' for me and sticking with me through thick and thin. I must also mention the poor woman who has had to endure my many moments of profanity and hot-temper taken out on the PC – Charlotte Thomson, Clinical Nurse Educator, who has had the misfortune to share the same office space with me for the last year – my sincere thanks to you for your perseverance and for freely sharing your vast insight and experience of emergency nursing.

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Last, but by no means least, my sincere love and thanks go to my wonderful family for their fortitude and forbearance of the journey I have taken them on, spreading over three continents and the last five years and *without* necessarily always seeking their informed consent first. Fiona, my superb wife, for her endurance, understanding and relentless composure despite my frequent and infuriating episodes of apparent *absence*. My beautiful children, Heidi and Angus, for allowing me to be a part-time Dad and full-time nurse and scholar for the last seven years. My love and thanks to you all.

Frontispiece

"For millions of years, mankind lived just like the animals.
Then something happened,
which unleashed the power of our imagination,
we learned to talk.

It doesn't have to be like this.
All we need to do is make sure we keep talking" [1].

Stephen Hawking PhD, 1994.

[1] The significance of this quote appeared to the author to be wonderfully and inadvertently sculpted to a few of the main attributes of this study and its inherent findings. It's a general quote about communication and the power it can have to help us change. But it also conveys a simple message of hope that, by communicating better, we can reach higher levels of understanding. Professor Hawking is largely held in the scientific community as a present-day genius, often compared with the likes of Sir Isaac Newton or Albert Einstein. He is a physicist who has developed, amongst other works, the Big Bang Theory about the creation of the cosmos. This is, perhaps, the biggest question ever asked. He is a scientist steeped in the language of mathematics and the study of quantum physics. Hawking is a living (and unfathomable) example of how someone can use the quantitative approach to explain our reality.

The irony in the quote stems from the man himself, who is severely disabled by Motor neurone Disease and is required to communicate with the aid of a sophisticated computer synthesiser. Hawking's genius and resourcefulness – in his ability to cope with such a debilitating disease whilst simultaneously conveying the infinite complexities of the creation of life using the language of numbers and mathematics – was an inspiration to me. I felt that, if this unique individual could do what he has in the face of such adversity – without having the ability to speak or to write – then surely conveying the more straightforward themes offered by this study would be achievable in time I had set myself. The quote appears in a song, from the popular rock band Pink Floyd, called *Keep Talking* - which is also apt as I am a huge fan.

Chapter 1

Introduction & Overview

Introduction

The challenges currently facing emergency departments (EDs) in New Zealand are by no means unique or vastly different to those experienced globally (Bagust, Place, & Posnett, 1999; Cook, Higgins & Kidd, 2003; Cook, Wilson, Halsall & Roalfe, 2004; Dwyer & Jackson, 2001; Herren, Mackway-Jones & Richards, 2001; Hider, Kirk, Bidwell, Weir, Cook & Tolan, 1998; Hider, 1998; MoH, 2001 a & b; NSW Health Council, 2000; Scottish Executive, 2001; Scottish Office, 1998). District Health Boards (DHBs) in New Zealand (NZ) are currently being challenged to meet an increasing demand for quality, acute in-patient care (Derlett & Richards, 2000; MidCentral Health, 1999; MoH, 1998; Nairn, Whotton, Marshal, Roberts & Swann, 2004). This global experience of increased demand is set against a backdrop of escalating waiting lists for elective surgery; reduced overall numbers of available in-patient beds; daily bed-blocking issues; departmental overcrowding and bottle-necking; together with a nursing and medical personnel shortage (Fatovitch & Hirsch, 2003; Pickard, Bubeck, & Woolmore, 2004; Quinn, Polevoi, Kramer, & Callham, 2003; Tanner & Bellack, 2001; Williams, Jelnek, Rogers, Wenban & Jacobs, 2001). Figure 1 demonstrates that more people appear to be attending NZ emergency departments than with fewer still being admitted to acute in-patient beds.

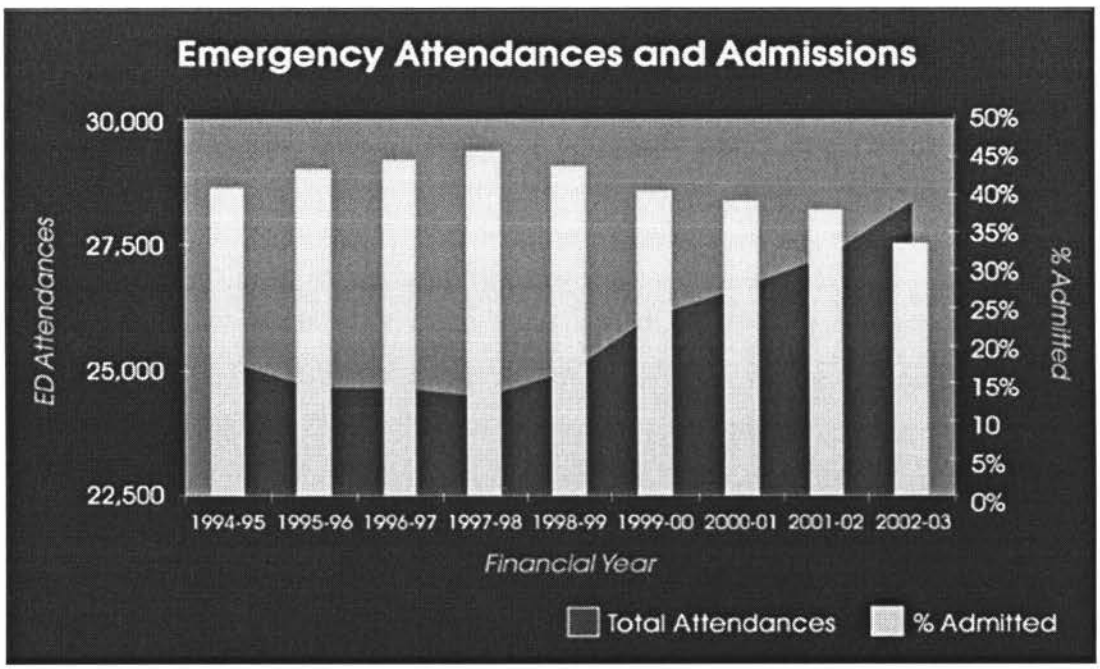

Figure 1 – An Example of Emergency Department Attendances & In-patient Admissions in New Zealand *(Wood, 2004). Table reproduced with kind permission from MCHDHB*

In order to address these issues a number of countries have investigated why patient demand for acute services is increasing and what strategies maybe employed to best meet these challenges and increased demand (Crouch, 2003; DoH, 2001; O'Connell, 2003a; Ross, Naylor, Compton, Gibb & Wilson, 2001). A number of countries have initiated collaborative networks to share best practice and to support system modifications that enhance the patient experience of emergency care. (DoH, 2003; National Institute of Clinical Studies [NICS], 2003). One such initiative is the advent of Nurse Practitioners™ (NP) in the emergency department setting within New Zealand. At a recent conference of the College of Emergency Nurses in New Zealand (CENNZ, 2004) there was wide debate as to the role of the NP in the ED setting, although it is widely anticipated and expected that their introduction will positively influence the ED service. There is little doubt that the heralding of such roles will benefit both the users and providers of the service. However if they are to reach their true potential, NP's must first allude to their role in delivering quality care and offer more clarity in the definition and expectation that their role will proffer.

Improving the quality of the service people receive when they attend the ED is a source of continual political and social debate (MacDonald, 2005). It can make emergency departments easy-prey for those looking to fill headlines in newspapers (MacDonald, 2005) and can often come off worse-for-ware due to poor public understanding (and poor reporting) of the multivariate nature of factors that affect the ability to provide a quality service. Quality has been defined (Oakland 1989, p.3) as "meeting customer requirements". However application of this definition can often prove to be challenging at best in the health care field (Fernandes et al, 1994). Biros (2002) also notes the difficulty and elusive nature of quality. However one possible clinical indicator of quality in health care might be outlined if one was to examine those who present to EDs but do not wait (DNW) for treatment. They comprise a group that can be studied objectively and tracked periodically. Highlighting these patients as a sub group of ED attendees is important both in terms of enhancing their clinical outcomes and minimising risk management due to the increased potential threat (Dent, Rofe & Sansom, 1999) from leaving with undifferentiated health problems. Studying DNWs allows for further exploration of the facets and influences that impact on peoples decision making from service-user perspectives of quality.

DNW – The Context for a growing problem in NZ

At a recent international emergency nurses conference (Fry, Thompson, Chan, & Carpenter, 2003) in New South Wales, it was reported that there has been a documented increase in the number of patients who attend the ED but did not wait (DNW) for treatment compared with previous years. Whilst undesirable, this is also common in New Zealand (Baur, 2004). As in Australia, the increasing volume of those who choose to DNW appears to be paralleled in New Zealand (Appendix A & B). Although health care providers may be collecting data locally on patients who DNW, this information is often difficult to access

externally for a number of reasons. The definition, characteristics and context in which people make their decision to DNW remains largely unquantified in New Zealand. Their clinical outcome remains unclear unless they have a serious adverse event. People who decide to leave the ED before being seen by doctor largely fall into an undifferentiated population of people and their final diagnosis is often never fully investigated or identified.

Medico-Legal Debate - Case Study

Those who DNW remain a source of medico-legal debate which has recently been brought to the forefront in New Zealand with the tragic death of a young woman from meningococcal septicaemia in 2003 - the day after travelling by ambulance to an emergency department after apparently hurting her neck at work. She waited almost three hours to be seen but eventually gave up and left. She saw a doctor at an urgent medical centre shortly afterwards. The doctor diagnosed neck strain; prescribed pain relief and sent her home. At about 1.30am - almost 10 hours after leaving the ED - her flatmate found her lying on the floor, delirious and asking for water with uncontrollable shaking. He gave her water and returned her to bed, where tragically she was found dead the following day (Evans, 2004). The reasons why a young woman with a fatal septicaemia - albeit in the difficult to accurately diagnose and evolving stages (Yung & McDonald, 2003) - decided to leave an emergency department and not wait to see a doctor are not entirely clear, despite a thorough inquest (Evans, 2004). Considerable media publicity was attached to this women's tragic outcome with a number of general and specific recommendations targeted at the DHB concerned. These recommendations were numerous, detailed and focused around the assessment/triage and management of people attending EDs, as well as environmental issues such as staffing, care pathways and the clinical roles of nursing staff within the ED.

However there appears to be one fascinating omission from the Coroner's report that may leave some, particularly within nursing circles, incredulous. For example, there was not a single recommendation about the need for research into the incidence of DNWs. Many misleading assumptions were made by the media (and therefore the public) about the circumstances and events that lead to the death of this woman and related to a perceived lack of care received by the patient. Common and perhaps unfair inferences were made about the ED service and it could be argued that these have been perpetuated by the media and from the Court's findings – despite the fact that the Court assured the public that its examination of the evidence was entirely with a *'tabula rasa'*. This can be demonstrated by the following, as there is a great deal in the report that discusses:

- meningicoccal disease – its diagnosis, treatment, management and outcomes;
- implementation of working party recommendations originating from the UK;
- observation and assessment at triage;
- the importance of keeping a sufficient number of hospital beds available.

None of these recommendations could be seriously disputed in light of the overwhelming evidence to support them and the report ought to be commended in coming to the conclusions it did. However, so much remains unknown about this specific patient population (DNW) that it might seem obvious a recommendation of further research into this serious issue would come from the Coroner's report. One might reasonably have expected, for example, that a review into the elements and characteristics of DNW patient populations have been recommended as a bare minimum. Yet sadly, this was never eventuated and that omission is one of the reasons why this study ought to be undertaken.

One explanation for this omission may relate to the purpose of the Court itself. A Court in such matters is appointed to adjudicate and primarily investigate a matter of public concern but is also expected to provide and deliver the maintenance of *right* or *justice*. The Court is expected to remain objective in such cases with a mandate to provide for public justice to be done. Seeking accountability and/or reasons for the outcome is a perfunctory role of the Court and were the foundations of the recommendations that came from the court. With such a mandate to achieve however this bares the question whether a Court can be entirely impartial? The Court's public mandate to seek justice in such matters may in fact supersede its very ability to objectively identify why such outcomes occur.

It is for this very reason why research must be undertaken into this subject as it directly relates to the way in which the conclusions and recommendations have come about. Conducting quantitative research allows a researcher to come to conclusions and make generalisations which are free from bias, obtained from observing fact and without the expectation (or demand) for providing public justice. It may be argued that the court was expected to come to some form of justice as there was such high public interest/expectation due to the tragic nature of a potentially preventable death of a young woman in a developed country. The Court even felt it necessary, in its final report for example, to allude to the high media profile that this case had generated. However, if a Court can routinely be objective and come to its conclusions without duress from the media, it remains unclear why it was necessary to directly mention this specifically in the final report.

The young woman's disease pathology joined part of the widely differentiated meningicoccal septicaemia population (Yung & McDonald, 2003), which was extensively reported on by expert witnesses and in medical literature. Interestingly, no expert nursing witnesses were called to give evidence on behalf of the nursing profession and it remains unclear why. However, the young woman was also part of a DNW population which was not reported on. The startling fact remains that the Court came to the conclusions it did without a working definition of the composition of a DNW population, why it occurs and

what its main characteristics are. Although the public now knows that this woman's septicaemia eventually caused her death, they still do not know – and can now only speculate about – what made her decide to leave the ED before she saw a doctor. Could her septicaemia, for example, be the reason for her deciding to leave the Emergency Department? This should be of particular pubic concern as it is highly likely that more people will decide to take a DNW from increasingly busy Emergency Departments in future than will contract fatal meningicoccal septicaemia. Therefore, the nature of DNWs before medical assessment should be of utmost concern to all those providing ED services and be tasked to manage them with the best possible outcome.

What is absolute (and has been demonstrated by the young woman's death) is that people who present to emergency departments but do not wait to see a doctor and leave are actually at risk and therefore pose significant medico-legal consequences - particularly to nurses *and* to patients themselves - due to the undifferentiated nature of their complaints. Therefore nurses have a responsibility (perhaps more of an obligation than doctors, some may argue) to identify why DNWs occur and make suggestions on how they might best be managed so as to minimise risk. EDs can be shown to be constantly altering, augmenting, developing and improving the services they provide such initiatives cannot be deemed to be appropriate or indeed justifiable if they do not provide the evidence to support such action. Therefore as DNW populations remain elusive, they demand further investigation.

Aims and Objectives

These are the reasons for undertaking a research study to establish quantifiable data on this phenomenon – particularly in a New Zealand context where local data is scant. The main aims and objectives of the study are:

Define a DNW population.

- To identify if the DNW population in NZ is increasing as it has reported to have been in other countries. However, to identify this correctly, the research needs to be clear about just what population group is being studied. Discussions about DNW populations cannot be fully understood or properly generalised unless there is an accepted definition. It is important, too, as a working definition of the DNW population was omitted from the case presented earlier. It is also necessary to select the correct sample from the data.
- To identify whether the characteristics of a DNW population differ significantly from that of the general population attending an ED but who *do* wait for treatment. Variables such as age, Australasian Triage Score (ATS), gender, address, presenting complaint and waiting times are compared. If the characteristics of a DNW population can be recognised, they can be described. If they can be described, they can be measured and if they can be measured, they can

potentially be anticipated. If this can be achieved and DNW populations can be adequately anticipated, it might be arguable that they might be prevented – assuming that is the goal when managing patients who DNW.

- To suggest a working definition of DNW. If a DNW population can be adequately, defined then the systems processes (both human and material) that influence people's decisions to DNW may be identified. The events that led to the tragic outcome for the young woman described earlier could possibly be altered to prevent deaths from similar circumstances occurring in the future. This was what the Court aspired to in its recommendations but fell short by offering no working definition of DNW.
- To consider the influence of ED systems processes on the incidence of DNW. DNW populations cannot be defined without simultaneously describing the context in which they occur. Due to the random nature of events and illness pathologies that EDs commonly manage, it needs to be ascertained if the EDs systems and clinical processes – together with their inherent strengths and weaknesses - influence or contribute to patients misguidedly leaving Emergency Departments without getting help when they most need it. Discussion about public expectation and appropriate use of and access to ED services by the public is required when considering DNW populations.

DNW and clinical outcomes.

To initiate the research, demographic data and potential sample numbers were extracted, collected and compared from a DHB database. A DNW sample was identified and – after careful selection criteria were met – participants were sent postal surveys. The research aims to show if a relationship exists between those who DNW and their outcome. The objective is to identify if significant acute illness is being missed by EDs when people leave.

Commonalities or Themes of DNW

Content thematic analysis was used to analyse the responses to open-ended questions used in the survey. It was also applied to the responses gained from email and participant correspondence. Categories and themes were developed from the responses. This was undertaken to establish whether or the interaction at triage had any impact on a patient's decision to leave before being seen by a doctor.

Nature of the presenting complaints for DNW

To ascertain if acute illness is being missed by EDs when people decide to DNW, the Australasian Triage Scale (ATS) code of DNW patients was used to identify the nature of their presenting complaints. Questions relating to their pain management both at the time and after they left ED allowed the researcher to construct evidence of how patients

perceived their injuries/illnesses. This was undertaken specifically to identify where improvements might be made. The aim is to identify possible alternatives, based on ideas gained from consumer responses, which may help to reduce the DNW population and improve the experience, delivery and outcome of patients presenting to EDs.

Summary

The following summary of the chapters gives a brief outline of what has been undertaken to explore this phenomenon.

Chapter 1

Chapter 1 introduces the key elements contributing to this study. It begins with a current description of issues relating to the Did Not Wait phenomenon and used a recent case to illustrate the actual threats to patients who decide to leave Emergency Departments without seeing a doctor. A brief outline of the study design follows and it concludes with a summary of the most salient points of the discussion.

Chapter 2

This chapter provides a research context for this study. A review of the relevant health related journals and publications' concerning the DNW phenomenon was undertaken and relevant material presented. It examines key elements underpinning what is believed or already known about the DNW issue – in reality, little *is* known about what happens to people who DNW, particularly from New Zealand research. A number of overseas research studies, stretching back to 1983, are therefore considered. It concludes with critical elements which prompted this research study and the methods employed to explore it.

Chapter 3

Here, the paradigms and methodologies of this study are introduced. It discusses the quantitative (survey) and qualitative (thematic analysis) aspects of research techniques used and it describes the concept of triangulation of data gained from adopting elements of methods from the two research paradigms. A general description of the study's setting, design and data collection methods are discussed and there is an examination of the specific ethical considerations that were followed. A case study is presented to highlight the precautions undertaken in the research to adhere the ethical principles required by those undertaking research enquiries. Quantitative data collection and analysis are then discussed in greater detail.

Chapter 4

This chapter presents the descriptive data results collected and is split into two sub-sections. It begins with a general description of the overall study sample and issues related to the gathering of the statistical data. It is followed by a general description of how the

data were analysed. A description of the patient sample and data related to hypothesis 1 (are there significant differences in age, gender, address, triage score and time of presentation between DNW sample studied against the actual population who presented and waited) is presented. The quantitative sub-section closes with a summary of all the salient descriptive statistical findings.

The following section outlines the qualitative data gathered from: open-ended questioning; participant correspondence and; email communications received by the researcher during the course of the data collection. Content analysis is used in order to identify a true meaning from what was shared from the participants. Participant numbers are used instead of names to maintain and preserve participant anonymity but also to enable readers to identify participants and develop a mental-picture of their personal experience. Themes generated are discussed with an abstract conceptualisation[2] offered to enable nurses to operationalise[3] these concepts in practice when dealing with the issue of DNW particularly at triage.

Chapter 5

This seeks to integrate and distil the significance of the data collected and analysed using the methods discussed in earlier chapters. Data are used to support and illuminate the discussion and inform further theoretical consideration. The main themes of perception of illness, action and environment are discussed and related back to additional literature found. Throughout the discussion of the data there is constant reference to theoretical ideals of the research process and what was actually accomplished.

Chapter 6

This highlights the main findings of the study. It explains the implicit experience of both the participants and researchers. The limitations of the study are outlined and discussed in further detail and recommendations based on the research outcomes are offered. It concludes with a statement which seeks to encapsulate the essence of the research experience and its implications for nursing practice in this specialty.

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[2] *Conceptualisation* - is largely concerned with developing an agreed definition of essentially abstract concepts.
[3] *Operationalisation* –is concerned with working out how to measure concepts once they have been defined. (Harris, 1999 p. 73)

Chapter Two

Literature Review

Introduction

In line with traditional quantitative research technique (Harris, 1999; Heard & Harris, 1999; Gillis & Jackson, 2002), a topic-based literature search was undertaken before engaging further with the subject to identify what were the fundamental elements of the project. Engaging with the literature before further investigation (a technique suggested by the quantitative approach) allowed the research to identify the substantive gaps in the data, particularly from a New Zealand perspective. This literature review is not the result of a single-structured search strategy *per se* but is the result of a number of small topic-related searches undertaken before, during and after data collection and during the writing of this document. This strategy proved useful in keeping abreast of current publications and helped to strengthen the rationale for the research and development of a conceptual framework for the study and the processes and methods used to collect and analyse the data.

Study Selection

Inclusion criteria

The lack of recent research available on this subject from local ED centres meant that the searches dated from 1983 onwards. The searches were mainly conducted between September 2003 and January 2005. They were primarily limited to English language material. Studies were selected for inclusion according to their relevance to the primary subject. The research selected a broad range of study approaches and methods including meta-analyses, randomised controlled trials, quasi-experimental studies and cohort studies. Due to the nature of the subject, a number of retrospective cross-sectional studies and some expert opinion articles were also selected.

As this is intended to be an exploratory study, no attempt was made to focus or limit the result of the searches on any specific study design. This resulted in the selection of studies which were possibly less methodologically robust with possible discrepancies in their choice of methodology. Descriptions of the methods employed and results have been included. A categorical decision was made to include this broad number of studies to widen and strengthen the scope of the search. Non-English language studies were relevant for inclusion as long as they were published in English language journals and were understood by the author. Reports found in the search included material from both adult and paediatric emergency services. This was because the setting of this study was undertaken in an Emergency Department that delivers services to both adults and children.

Exclusion criteria

The following criteria were developed to exclude articles from the literature search:

- Studies with limited or little relation to a New Zealand context.
- Letters to the editors of journals, since they may often be construed as rhetorical and opinion-based, with little evidence of useable substance.

Appraisal & Levels of Evidence

Many authors who undertake literature searches using the quantitative paradigm often grade literature that is found and finally used. This demonstrates that some form of formalized critical appraisal of the literature has been undertaken to differentiate between the stronger and weaker studies. Tools, such as those developed by the US Preventative Services Task Force (1989), allow researchers to apply a grade to the level of evidence found. This has not been undertaken in this search. However, research studies that are considered by the author to be methodologically stronger than others available have been generated using a quantitative research methodology. For example, studies which can exhibit elements of randomisation; show use of control groups; demonstrate where prospective studies have been tried; or have been exposed to rigorous or wide peer review with quantifiable data supporting the authors conclusions are considered more robust. Conclusions have been largely dependent on the studies' relevant design, sample size and research findings.

Limitations of the literature search

The financial and time constraints of undertaking in-depth literature searches associated with the quantitative methodology meant that studies selected were limited to those immediately available within New Zealand. Preferential selection of articles was given to those articles that were easily obtainable and affordable and were not subject to often substantial inter-loan library and transport fees. Abstracts of articles not immediately available were heavily scrutinised before making the decision to obtain full copies from overseas libraries. These constraints meant that this particular search technique had certain limitations. It is conceivable therefore, that some relevant or associated literature may not have been included in this project. Not all available internet sites were able to be accessed.

Electronic Databases

Topic-based, electronic-database searches have been undertaken utilising various MeSH headings (for example emergency department; did not wait and; emergency services) and then using phrases such as *self-discharge*; *left-without-being-seen; refuse treatment* and *irregular discharge* were used to extract further research material.

A number of electronic resources have been accessed. These include:

- Medline©
- MEDLINE In-Process & Other Non-Indexed Citations©
- CINAHL©
- Cochrane Libraries©
- PreMedline©
- Health Star©

In addition to the electronic databases mentioned a number of electronic bibliographic sources were used and included the following;

- New Zealand university medical library catalogues
- New Zealand bibliographic network©
- Index New Zealand©
- Her Majesty's Stationary Office© (HMSO) Publications catalogues
- Database of Abstracts of reviews of effectiveness
- Kings Fund Catalogue of Publications
- Material referenced in obtained publications during the course of this literature search
- Internet Web Sites and personal/professional gained contacts from collegial networks

Results

DNW – An Urgent Problem or Not?

There is great debate about exactly where the demarcation lines are drawn between urgent and non-urgent cases (Afilalo et al, 2004, Gill, 1994; Wabschall, 1983). There is also relatively little published research which quantifies the size of the DNW phenomenon – the reasons why it may occur or the clinical outcome of patients who decide to leave the Emergency Department against medical advice (Fernandes et al, 1997; Lee, Wong, Chan & Lau, 1998; Liao et al, 2002; McMullen & Veser, 2003; Pennycook, McNaughton & Hogg, 1992; Quinn et al, 2003; Weissberg et al, 1986). Some studies have suggested that most Emergency Department patients who leave without being seen by a physician may be non-

urgent (Fernandes, Daya, Barry & Palmer, 1994; Lee et al, 1998; Liao et al, 2002). Yet there are studies that suggest otherwise (Davy, Bing & Bodiwala, 1999; Dent, Phillips, Chenhall & MacGregor, 2003; Fernandes et al, 1997) and suggest that many patients who leave without being seen may, in fact, be classified as urgent at presentation. Dent, Rofe and Sansom (1999) concluded that, whilst triage categories maybe a useful tool for prioritising acute patients and indicating illness severity, patients in lower triage categories often have fatal illnesses and have been shown numerically to be the largest group of all admissions. Patients who die after admission to hospital through an ED have been shown to present mainly in ATS category 4 (semi-urgent).

The Australasian Triage Scale

The Australasian Triage Scale (ACEM, 2005; CENNZ Triage Course, 2004) focuses on the immediate and primary assessment of patients presenting to the emergency department. It provides a snapshot in time of a patients' acute condition. It is a method which establishes treatment priorities amongst a number of patients and seeks to discover the chief complaint whilst simultaneously assessing for clinical urgency and any necessary time-critical intervention required. The priorities of assessment are structured in a logically sequential manner and have a validated tool to support consistent clinical practice. It follows the ABCD priorities which stand for A for Airway (with need for C-Spine immobilisation); B for Breathing; C for Circulation, D for Disability and R for Risk factors. It does not seek to diagnose or provide an in-depth physical assessment. It is meant to take no longer 2-3 minutes and is usually provided by a suitably experienced or qualified registered nurse at the entrance to the emergency department. All patients who present to the emergency department are meant to be assessed in this fashion. The following table outlines the ATS scoring system.

Table 1. - Australasian Triage Scale

Australasian Triage Scale	*Description*	*Time to be seen*
ATS 1	Immediately Life Threatening.	*Must be seen immediately on arrival.*
ATS 2	Life threatening or Important time critical treatment or Humane practise to relieve pain or distress.	*Must be seen within 10 mins.*
ATS 3	Potentially life threatening or Situational urgency or Humane practise to relieve pain or distress.	*Must be seen within 30 mins*
ATS 4	Potentially serious or Situational urgency or Significant complexity or severity.	*Must be seen within 60 mins*
ATS 5	Less urgent or Clinico-administrative problems	*Should not wait longer than two hours*

Defining DNW

The literature search was pivotal in identifying the meaning of what a DNW patient population is considered to be. Many terms are used in the literature to describe such patients. These include:

LWBS	-	Patients who Leave Without Being Seen by a doctor
DNW	-	Patients who Did Not Wait
ID	-	Patients who took an Irregular Discharge
SD	-	Patients who Self-Discharged
LWT	-	Left Without Treatment
WO	-	Walk-Outs
ED	-	Early Discharge

On remedial inspection of the literature, the differences in terminology describing the DNW populations in ED did not appear initially significant and often proved a good way of finding material as it gave a greater scope for catching literature that may otherwise have been over looked. There might be an expectation that the terms described above – all taken from titles of published research — relate to the same subset of ED presentations (Liggins, 1993; Toki, 1997; Toulson, 1996). However, they do not. The considerable variation in definitions available has led to DNW being associated with people who are non-urgent. Therefore, one specific characteristic of non-urgent populations – including those who DNW – according to Richardson & Hwang (2001, p.1030) "is distinguished only by a remarkable lack of precision and widespread confusion". This is significant when one considers the global initiatives in altering emergency service delivery, such as those described on the internet (NICS, 2003; DoH, 2003) and in the literature (DoH, 2001; Frampton, Browne, Lam, Cooper & Lane, 2003; Heath et al, 2003; Holden & Smart, 1999; King, 2003; Marr et al, 2003;). The meanings and therefore an understanding of what a DNW population consists of can have substantial implications for clinicians and administrators alike. For example, a common confounding factor in DNW studies relate to those patients who attend EDs and do not register who: may still be seen by a triage nurse; they may be given advice regarding their ailment and; often may leave with dressings or have education on the safe care of their ailment. If clinicians cannot adequately define these patients or describe the service they provide, how are services to be best altered or managed to meet consumer demand to reduce DNWs from recurring (Sainsbury, 1990)?

Alternatively, patients who do register and *are* triaged may receive intervention such as: simple to complex pain relief administration; intravenous fluid management; radiological examination; blood tests; electrocardiography and/or have medication administered all by nursing staff. Patients who then decide to leave might still be assigned a LWBS, DNW, SD or ID code – depending on local directives and IT systems used – only because the

medical staff have not yet seen the patient. Abbreviations such as LWBS or DNW do not necessarily mean did-not-receive-treatment and are therefore non-urgent, which the term may imply. This is a concern, as government statistics are often directly linked to the terms used to define sub-sets of patients presenting to the ED. However, a national dataset cannot be properly collected if there is an inconsistency in the use and meanings of the terms adopted by each DHB for this subset of patients. It is also important for triage nurses to know what a DNW is defined as when applying ACEM & CENNZ (Australasian College of Emergency Medicine and College of Emergency Nurses New Zealand) standards to the triage process on patients who present. Therefore, any study aimed at looking at patients who leave Emergency Departments must explore this concept more fully and define clearly – by constructing a set of criteria to work from – what is meant and understood by patients who LWBS, DNW, leave-without-treatment and so on .

To understand the nature of people who DNW, investigation into the changing nature of emergency healthcare and the increased demand is valuable. In a qualitative study, Malone (1995) concludes that there are three main themes related to the increase in rising ED visits. The first is emphasized by the medical model adopted by ED service providers who may judge heavy users of the service as inappropriate (only by medical definition) through use of criteria. The second Malone calls (1995, p.468) "the public health premise" and is viewed as a direct symptom of sub-optimal social health and welfare provision in the community. This is particularly indicative in the New Zealand setting as patients are charged for primary care services accessed through their GP but not for those primary care services accessed through the ED – although as fiscal constraints continue to take hold this might be subject to change in future. The final theme relates directly to funding within the primary healthcare setting. This article was written during the mid-Nineties when District Health Boards were market driven and financial incentives were awarded on deregulation of services. However, while the context has changed, the essence of Malone's argument remains true today as funding is being redirected from secondary service providers and invested into primary health initiatives such as Public Health Organisations or PHO's.

Levels of Urgency

Afilalo et al, (2004) believe that non urgent patients who present to ED are different from semi or urgent patients and have multiple reasons for not seeking primary care before going to the ED. Some commentators (Davies, 1986) have further argued that the reasons people attend ED are important to them and therefore appear enduring. The patients' belief is that the Emergency Department provides the most convenient service, so their custom (although they don't pay) should be supported. ED attendance and the provision of GP or primary care are therefore closely linked. Some cross-sectional studies found that most ED attendances are from people in lower socio-economic groups who do not have regular primary care (Grumbach, Keane & Bindman, 1993; Hurley, Freund & Taylor,

1989a). However, access to care involves other factors such as cost, staff communication, provision of privacy and security issues, and ethnic considerations (Gill & Riley, 1996; Stuart, Parker & Rogers, 2003).

Appropriate Attendance

Although it is not the direct focus of this study, an essential component of any review of the literature must take account of the appropriateness of ED-based care, its relationship with GPs and primary service care provision and the evaluation of which setting is more effective at providing quality primary care. Steel (1995) presents an excellent list of factors that describe why patients inappropriately attend the ED and not their GP. These include:

- Proximity to the ED.
- Social deprivation.
- Inability to attend or access a GP.
- A poor perception of GP services available.
- Lack of 24 hour service.
- Perceived urgency of the complaint and need for investigation in an acute setting.

When DNW can occur

When considering patients who leave the ED prior to treatment therefore, it remains inexplicit from much of the literature found as to where exactly on the continuum of ED care, people actually decide to leave the emergency department. Figure 2 illustrates a common continuum of care for patients attending emergency departments. It is important to note that a patients journey through the ED continuum of care may not be as linear as Figure 2, might suggest. For example, specific interventions and treatment can start (and frequently do) at the triage area and continues throughout the persons passage through the ED. It is also vital to note that not all EDs will require people having to register their details first before seeing the triage nurse.

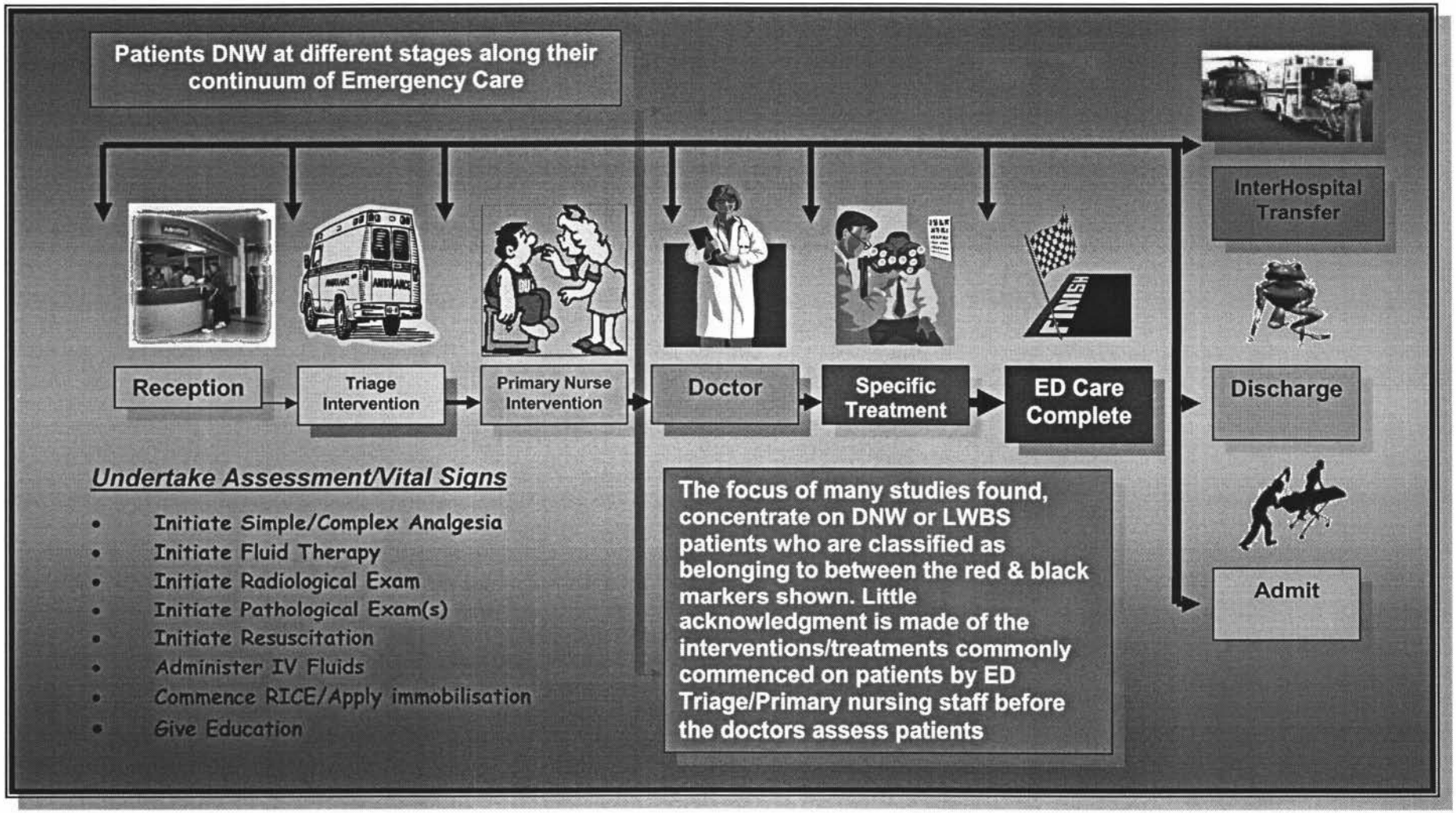

Figure. 2 - A Common Treatment Continuum for patients attending the ED

Communication

Through modifications in triage assessment systems and primary nursing roles in many EDs world wide, patients are now experiencing - detailed assessment and intervention before medical staff actually see them (Crouch, 2003; Frampton et al, 2003; Heath et al, 2003; Marr et al, 2003; O'Connell, 2003b). The main focus of a recent Emergency Nurses conference in New Zealand (CENNZ, 2004) validated this with its *Specialist to Practitioner* theme. It demonstrated several examples of the current and future importance of the Nurse Practitioner™ in NZ's emergency departments. This also impacts on the meaning of a DNW. A review of the studies highlighted a persistent failure to adequately acknowledge either the positive or negative contribution nursing may have on patients who decide to leave the ED before seeing a doctor. For example, are nurses, providing patients with what they want or not? And, are patients' needs being met (or not) without actually requiring to see a doctor?

In the literature, Ardent, Sadosty, Weaver, Brent and Boie (2003, p.323) consider the issues which might prevent people from leaving EDs and conclude that:

> Communication of estimated waiting time and the availability of immediate treatments for minor injuries or symptoms might increase the time patients are willing to wait and therefore might decrease [the] rate of patients leaving without being seen.

Yet these authors fail to specify what nursing interventions (if any) took place in the triage/reception/waiting areas of the department they studied before patients left. Communication in the triage area is also primarily a nursing responsibility but is not stated as such in these authors' conclusions. Interestingly, Coleman, Irons and Nicholl (2001) report that almost one quarter of a population surveyed of low priority patients who self-presented to the ED gave seeing a nurse practitioner for advice as the least likely response.

Communication both verbal and non-verbal can have a huge impact on a patient's decision. The way information is shared can directly influence a patient's decision. George and Quattrone (1992) believe there is a relationship between a patient and the Emergency Department if a patient has in fact gone through triage, been registered and been told to wait for care. These authors believe that utilising the waiting room by ED staff for non-urgent presentations for prolonged periods (1992, p. 267), "sends a subtle message [that] may be interpreted as: "*You may as well go home; you may be here all night waiting to be seen*". This type of message, which may be interpreted as abandonment, can subject the hospital and ED staff to potential liability when aligned to their duty of care.

Who conveys messages to patients and the methods by which that information is conveyed also influences why people decide to leave before seeing a doctor. For example, if patients are immediately told what the waiting times are before an assessment of any kind has taken place, they might often conclude that nobody cares (Stuart et al, 2003). This may again indicate a very clear liability for EDs in terms of their duty to care, even if that what the patient asks.

Estimation of waiting times

It may seem fairly obvious that the time people have to wait to see a doctor is a consideration that requires deeper analysis when discussing patients who DNW in the Emergency Department. Many patients whose primary care facilities are rare or non-existent have little or no choice but to wait for treatment and have been recorded waiting for significant periods (Lee et al, 1998). But are people's recollections accurate? In one study (Thompson Yarnold, Adams & Spacone, 1996a; Thompson, Yarnold, Williams & Adams, 1996b), patients were found to over-estimate their waiting times. Maister (1985) suggests that the perception of the length of wait is affected by factors such as time spent unoccupied; levels of anxiety at presentation; uncertain wait times seeming to be longer than finite waits; solo waits felt to be longer than group waits. So, studies of DNW populations need to consider: not only the context and setting during the period which patients attend but also; the time people waited before deciding to leave.

Satisfaction

Patient satisfaction and expectation are often used – either rightly or wrongly – as benchmarks of the quality of the service provided (Beattie, Mackway-Jones 2004; Bursch, Beezy & Shaw, 1993; Kennedy, Allen & Allen, 2003; Oakland, 1989; Raper, 1996; Raper, Davis & Scott 1999; Stuart, Parker & Rogers, 2003; Sun et al, 2000). Some studies into the factors associated with patients who leave before being seen (Quinn et al, 2003) – have shown that exceeding an EDs capacity might correlate to a greater number of patients who DNW. Although 100% capacity is not necessarily a sensitive indicator of over-crowding, these authors believe that the presence of emergency medicine training schemes in ED's appears to be an important factor when using DNW as a quality indicator. This is because ED training schemes in variably indicate the degree of senior presence. Increased senior presence on the clinical floor is felt to diminish the effects of such things as waiting time.

Other studies (McMullan & Vesser, 2003) suggest increasing doctor load and patient acuity causes DNW numbers to rise. There are therefore a number of questions that require to be considered further when looking at DNW populations. In New Zealand this has been recognised recently by the Ministry of Health (MoH, 2001a&b) which has placed a significant emphasis on the development of emergency medicine training schemes around the country. However, as DHBs and Emergency Departments work towards improving patient satisfaction and meeting patient demand, it is unclear whether this will simply further

increase patient expectations. Any anticipated exponential increase in patient expectation would be mirrored historically in some areas of industry according to Deming's concept of quality improving continuously and forever (Walton, 1986). This in turn raises the question of the level, scope and volume of non-urgent services that EDs *ought* to be providing both now and in the future.

A recent literature review by Nairn et al, (2004) on patients' experience of Emergency Departments described six recurrent themes related to waiting times: communication, cultural aspects of care, pain, the environment and accessing the patient experience. Relying on patient satisfaction (Mowen, Licata & McPhail, 1993) as a surrogate marker for how well services are managed within the ED setting has been shown to be largely erroneous (Blank et al, 2001). It should therefore not be relied upon solely by researchers. Focus should not be on satisfaction alone but more on the outcome of events, for example, did people have a negative outcome from their decision not to wait?

ED – A Primary Care service?

Some argue that receiving primary care from the ED is often inferior to the services provided by a GP (Shea, Misra, & Ehrlich, 1992; Spivak, Levy, & Bonano, 1980). A NZHTA (1998) report suggests some reasons for this may include:

- ED staff are not trained to provide primary care (Thompson & Radcliffe, 1992).
- ED staff may over-investigate.
- ED care is episodic and not continuous.

This is partially demonstrated by an interesting retrospective study carried out by Eder (2003) in relation to pain assessment, its treatment and evaluation in Emergency Departments. This author concludes that while over 85% of patients arrived at the ED with moderate to severe pain, 47% experienced moderate to severe pain upon either discharge from the ED or admission to the hospital. Of the 261 complete charts reviewed, 94% showed evidence that patients had some form of initial pain assessment documented but that this was not followed up by evaluation of their pain. Only 19% of patients who were given analgesia had a documented evaluation on the effectiveness of the analgesia they had been given. This might demonstrate that some EDs clearly have difficulty with the fundamentals of delivering a quality service if they first cannot manage pain optimally. It also demonstrates that when nurses fail to document adequately it can contribute to their work becoming less visible. This author was not able to identify any articles on pain management/evaluation from a primary care perspective. However, pain and its management have recently been recognised within many DHBs around New Zealand as the "fifth vital sign" and a strong emphasis is placed on its identification, treatment and evaluation (Leader, 2003).

Dent et al, (2003, p. 322) found from their retrospective review of five hundred ED patient presentations that:

> The majority of the presentations – by the heaviest users of an ED in an [inner] city hospital – are not suitable for general practice. Attempting diversion of the heaviest users to a general practice in this setting may not be successful due to the acuity and nature of casemix of the presentations and would have minimal input on overcrowding in similar Emergency Departments."

Coleman, Irons and Nichol (2001) suggest that increasing the availability of alternative services which offer first contact for non-urgent health problems is likely to have little impact on the demand for A&E services. However, Uden and Crebolder (2004) suggest that reorganising out-of-hours primary care may lead to a shift in patient contacts from emergency care back to primary care. Some studies (Saver, Cydulka & Baker, 2002) suggest lack of trust or dissatisfaction with one's own GP may cause people to present to EDs with non-urgent problems.

Patients who DNW – Outcome

Very little is known of the impact that DNW populations have on personal health, society and health sector finance. Bar, Leitner and Thomas (2004, p108), believe that "aftercare arrangements were significantly less likely to be made for those patients who took early discharge". Therefore the fact remains that there is a lack of robust evidence to prove or refute the assertion that ED does not provide as good primary care as GPs. It remains largely unknown whether ED or primary care providers have better outcomes for their patients who require non-urgent care or for those who do not have a GP(Dale & Green, 1991; Shesser, Kirsch, Smith & Hirsch, 1991; Vaughan & Gamester, 1996).

ED – A Place of Safety?

Some commentators have highlighted how safety can play a significant role in the decision-making of patients who DNW. Fry (2003), in her address to the College of Emergency Nurses Australia, believes that many patients DNW as they feel their safety may be compromised and is at serious risk when waiting either to be seen by the triage nurse or for further assessment by a doctor. Sadly, to corroborate this assertion there has been a steady increase in reported incidents of aggressive behaviour and violence towards Emergency Department staff (Kuhn, 1999; Scott, 2001; Crilly, Chaboyer & Creedy, 2004). Therefore it is vitally important to consider environment as factor – particularly when EDs provide care for children - when assessing people's reasons for not wanting to wait (Wabschall, 1983).

DNW – A Mental Health issue?

There is a suggestion from the literature that people who present to the ED with self-harm are considerably more likely than others to discharge themselves before their assessment

or treatment has been completed (Horrocks, House & Owens, 2002). Barr, Leitner and Thomas (2004) found that 18% of self-harm patients per annum took early discharge and that after care arrangements were less likely to be made for those who took early discharge. It is necessary therefore to identify if there are any significant Mental Health components to those who DNW in this study.

Summary

As always, performing a literature search answers some fundamental questions but offers, in their place, new ones that require consideration before researching the issues surrounding patients who DNW. The questions that have been answered so far are:

Literature available on DNW patients is inconclusive. There has been little Grade 1 quantitative research undertaken in this area. Definitive scientific conclusions are therefore difficult to extract from current data. The considerable difficulty exploring this within the nurse-patient relationship generates significant problems for both academics and clinicians (Allen, 2001). Emergency Departments may not currently have an ability accurately or consistently to account for what happens to their DNW populations unless these patients re-present – and even then this is not always reliable (Wilkins & Beckett, 1992) – or they are directly followed-up by the department staff, which has often proved to be impractical in the past and served little purpose (Baur, 2004). Some evidence suggests that patients who DNW are non-urgent, but there are also studies that contradict this. Again, some evidence suggests that communication of wait times and access to minor injuries services may reduce the number of patients who DNW but there has been little evaluation to support or refute these claims.

The method of choice for researchers appears to be retrospective, cross-sectional studies. Some evidence does exist of follow-up research being undertaken on the outcome of patients who present and do not wait. However, this is also scant. At the time of this report, no current studies in a New Zealand context could be found relating to this subset of ED patients other than those undertaken by this author (Baur, 2004). People's experiences of Emergency Departments are nebulous in nature and researchers are therefore warned against trying to construct a questionnaire that restricts them – and therefore their participants – to a limited set of variables (Nairn et al, 2004). Some argue that research in this area is (Nairn et al, 2004; Williams, 1994) being dominated by quantitative measurements but it is accepted that this approach can elicit useful data and can act as a good foundation for later projects focused on qualitative criterion.

Definitions of a DNW Patient

There appears to be little consistency in the definitions used by authors when describing the research they have undertaken to test the assumption that ED attendees who DNW are all

non-urgent. There is little or no nationwide data on DNW patients. The data that might be available may have little relevance because there does not appear to be any consistency in definitions of what a DNW patient is thought to be. For example, is a DNW patient someone who registers their details but leaves before seeing a doctor? Or is it someone who attends and does not even wait to register but still gets advice/treatment from nursing staff? There does not appear to be any national criteria set for this sub-group of ED attendees and conversely how they are effectively managed.

Emergency care can be expensive. So no discussion about potentially non-urgent care provision in this setting can occur without mention of the suitability of the non-urgent/DNW presentation groups. No valid or reliable method yet exists to define inappropriate care at an ED. Clinicians, administrators and consumers all have their own definitions of appropriate attendance at the ED (Afilalo et al, 2004, Gill, 1994;). This study does not aim to define whether or not it is appropriate for patients to DNW. The fact is they do occur and appear to be increasing in frequency. The case study presented in the introduction demonstrates that DNW patients are at risk. To understand if they are inappropriate, the researcher first has to ask why it happens and what happens to them. Only after gathering this data – which hasn't been undertaken to any real extent in New Zealand, anyway – can the question of non-urgent service provision and patients who DNW be tackled fairly.

Currently within New Zealand the provision of emergency services remains free of charge to people needing them. In primary health settings, the rising cost of visiting a GP may persuade people to attend an ED rather than visiting their own GP, if in fact they have one (Rankin, 2004). So it is important to establish why someone attends the ED rather than before being able to identify how this might influence their subsequent decision to DNW. Certainly, experience from countries like the UK where primary healthcare is free at the point of service, appears to have little relevance to those non-urgent attendees who present to the ED (Coleman et al, 2001).

Conclusion

Proximity to the ED, social deprivation, poor understanding of available GP services, lack of 24-hour services and perceived urgency of the complaint may all be factors leading to non-urgent presentation to the ED. However, they do not fully explain why people DNW once they have taken the trouble to attend. Little definitive data exists yet to adequately suggest or explain at which point consumers actually decide to leave the Emergency Department.

Therefore, DHBs and their Emergency Departments charged with providing a quality service are left with a kind of hollow-compass with which to chart a safe and effective passage for quality service improvements in this area. Data is scant – particularly from a nursing perspective. What, for example, is the overall objective? Is it to reduce DNW presentation

rates overall? And is this achieved by providing those who do attend with an optimal primary healthcare service at the interface between primary and secondary healthcare provision – in other words, reduce DNW rates essentially by giving the public with what they appear to want/need? Many authors have made suggestions and recommendations, but no real definitive answers yet abound. Are Emergency Departments or even DHBs, for example, willing to ride the waves of potential litigation by simply accepting that people will DNW whilst being aware of the significant risks to people like those alluded to in Chapter One from allowing DNW to occur unchecked?

The question of whether nursing is perpetuating this issue of patients who DNW remains unclear, too. There is evidence of advanced nursing practice taking place in EDs (and at also at Triage), but there appears to be little or no recognition of whether this may or may not have taken place before patients left the ED. This is because triage times are defined as "time to see a doctor" despite increasing evidence of definitive advanced nursing practice initiatives occurring before the doctor's assessment. Evidence therefore remains inconclusive within nursing circles. Should nurses, for example, be working towards creating an environment ripe for exploitation by yet more emergency medicine trainees? Or should they be advancing their own skills to enhance the quality of triage management services they provide, expedite timely and effective patient care and, ultimately, reduce the number of DNWs by acquiring knowledge, skill and expertise in the form of Nurse Practitioners? Perhaps the only way to get answers is directly to ask the people who DNW and find out what their outcome and experience was when they did not wait after presenting to the ED.

The reasons why patients leave the ED are assorted and diverse. The following research methods have been developed through the insight gained from undertaking this literature search and learning what has been done (and more importantly what has not been done) before. Although time to see a doctor might be an obvious reason why some patients do not wait, it is clearly not the only or even the main explanation. Most importantly however it is vital that time alone should be emphasised and understood as not the only factor which results in people deciding to take a DNW discharge.

Chapter Three

Methods & Methodology

Introduction

Nursing practice may be thought of as a nebulous phenomenon. Maggs-Rapport (2000, p. 223) describes the nature of nursing practice as "multi-faceted and perhaps unknowable in its entirety". This maybe true, but what is also undeniable is that many nursing scholars have used research to develop (and regularly challenge) the philosophical foundations of nursing as a science (Allen, Benner, & Dieklemann, 1986; Holmes, 1990; Minichiello, Sullivan, Greenwood & Axeford, 1999; Munhall, 1982). Nursing research is, after all, a tool that has been used to address, answer and contribute to the philosophical foundations and practice beliefs of the nursing profession since the days of Nightingale in the Crimea. Regardless of the philosophical beliefs about nursing that nurses themselves may have, one issue is difficult to dispute. The whole point of conducting research is to answer questions, to test the validity of assumptions and hypotheses and to apply meaning to phenomena. Research paradigms and their associated methodology offer the tools with which nurse researchers can achieve a clearer understanding of their reality – define, describe and explain their profession and practice, and to locate Nursing's inherent role within the ever-expanding areas of healthcare provision (Allen, 2001).

Therefore, it may be useful first to state what this research study is not intended to achieve. Its purpose is not, for example, to chart new or uncultivated pathways in the application of research methodology simply to produce more authoritative answers to particular research questions (Coyle & Williams, 2000; Crotty, 1998; Ford-Gilboe, Campbell & Bermann, 1995; Scumacher & Gortner, 1992). In fact, researchers (irrespective of background or philosophical viewpoint) are often warned against compromising methodological rigour in the struggle to achieve new ways to research and gain understanding (De Santis & Ugarriza, 2000). Eclectic or assorted methodological approaches for answering questions – where they exist within the numerous paradigm options open to researchers – still require their methodology to have a foundation built on the paradigmatic suppositions that underlie each chosen mode of enquiry (Foster, 1997). More simply, one would not use a map of London's Underground Tube-system and reasonably expect to navigate their way correctly or safely around London's inner city when driving a car.

Neither is this study primarily focused on patient satisfaction. As a performance indicator, patient satisfaction has not always been shown to correlate adequately with positive outcome (Oakland, 1989; Kennedy, Allen & Allen, 2003; Stuart, Parker & Rogers, 2003). This is an exploratory study which does not seek to test any particular hypothesis or

disprove null hypotheses – another common function of research. Finally, this study does not deliberately seek to contribute to the debate about the philosophical foundation of nursing *per se*.

Purpose

The purpose of this research study is three-fold. Firstly, it is to explore, describe and offer further insight into the reasons people present to an emergency department, but do not wait to see a doctor. Secondly, it was intended to identify what the outcome had been from those who DNW. In order to answer these questions - within the usual constraints of finance and time frames normally associated with a study of this size (these will be discussed later) - the appropriate paradigmatic approach, methodology and methods applied need to be carefully selected, discussed and outlined. This then alludes to the third purpose of this research study which is to demonstrate a suitable level of knowledge of the necessary research techniques required (and willingness to embrace and adhere to them) to gain a meaningful understanding of the DNW issue.

If this study is to suggest new insight on this subject, data must be collected directly from those who DNW – something that has not been reported on recently to any great extent in a New Zealand context. Therefore a retrospective, cross-sectional, quantitative, postal survey design combined with elements of operations research (Bowling, 1999) and some triangulation (Patton, 1999; Shih, 1998) have been developed to look at this issue. Deciding on the varying methodologies available – and remaining true to the paradigm (post positivist) that encapsulates the chosen methodology – involves a level of pragmatism i.e. what can reasonably be achieved with the tools and time currently available? It is intended that, by undertaking a formal, quantitative analysis of the DNW subject, a coherent, valid and methodologically rigorous nursing response is properly constructed and generated for others to use and build upon for future research enquiry – within a New Zealand context.

Combining statistical data gained from the survey responses – elements of operations research, triangulation and thematic or content analysis have been applied as the basis of the scientific methods for this exploratory study. This is to adequately survey the complex systems surrounding people who DNW, as it contains numerous intangible elements such as random events, unpredictable human behaviour, motivation and subjective components, such as perception of pain and threat to personal safety. It is a method that is concerned with the study of randomly occurring and scheduled events such as the demand or perceived need for delivery of quality acute emergency healthcare services, their association with other services, processes and outcomes. Utilising a quantitative methodology is important as it demonstrates a willingness to apply methods, which have perhaps been redundant of late – particularly within nursing realms – in favour of research paradigms whose philosophical foundations for scientific enquiry have been more

consonant with the phenomenological, ethnographic, social critical theory or feminist approaches than with a positivist nature in general.

The quantitative paradigm will now be described, to build upon what is already known and understood and to identify if existing results are reproducible, similar or different to those described in Chapter Two.

Methodology

Positivist Paradigms

Quantitative research is based mainly on the empirical/rational doctrine developed from a twentieth century variant of empiricism known as logical positivism. The development of logic-based theory from observational analysis was considered by some at the time as infallible in its ability to truly explain the reality in which we exist. It is concerned mainly with measuring quantities or amounts using a mixture of sensory and cognitive observation techniques (Harris, 1999). This form of post positivist paradigm enquiry seeks to discover a reality that can be studied objectively, measured empirically and known without prejudice (Polit & Hungler, 1997). Modern day examples of research that falls into this empirical/positivistic/objective model include: randomised control trials (RCTs); experimental and quasi-experimental studies; evaluative, descriptive, exploratory and correlational studies. Schumacher and Gortner (1992) suggest, however, that there has been a shift in emphasis (particularly in nursing-focused, quantitative research) from verification to justification knowledge claims. These authors suggest that post-positivistic, quantitative inquiry can often be referred to as "traditional" and is often (1992, p.1) "portrayed as a static and monolithic entity, serving mostly as a foil against which to describe the philosophical position of the [nursing] authors". If Maggs-Rapport (2000, p.223) is correct, therefore, in describing nursing as "many layered and multi-faceted", herein lies a fundamental paradox when considering such a nebulous entity as nursing and applying the rules of "traditional" science to it.

In quantitative research, the epistemological focus lies in a clear separation between the researcher and the research question in order to make generalized, objective statements that are as free from bias as possible and that may be applicable to other similar settings. Quantitative data are normally analysed statistically i.e. formulas and rules are followed (Patton, 1999). Objective reality is assumed to exist regardless of human observation and is, according to Ford-Gilboe, Campbell and Bermann (1995), important as long as the environment is adequately controlled in order to examine the phenomena being studied. Therefore, if reality is meant to exist regardless of human observation then the phenomenon of people who, DNW will occur without having to introduce control. To remain true to this methodology, no attempt was made to introduce any form of control, as no post-testing was

going to occur. This study was intended from the outset to reflect a moment in time. Randomisation occurred naturally and the researcher did not directly control or influence those who DNW over those who waited for treatment. There was minimal manipulation of the variables being measured as no hypothesis or null hypothesis were offered. This is discussed in greater detail in Chapter Four.

Operations Research Method

The purpose of undertaking much healthcare or clinical research includes the testing of hypothesis/theories and/or evaluating of the effectiveness of specific therapeutic interventions. To generalize on the effectiveness of these interventions, Heard & Harris (1999, p. 98) suggest that "the ability to show that a particular intervention works is fundamental to clinical practice". Therefore, in order to provide a research design that yields meaningful and valid data, health service research – or operational research as this is also sometimes referred to – can allow researchers (Hovenga 1999, p.272) "to relate healthcare inputs to processes, outputs and outcomes to examine these relationships within the context of organisational structures". Bowling (1997, p.6) states that quantitative operations research is "concerned with the relationship between the provision, effectiveness and efficient use of health services and the health needs of their population". It offers a clear example of field research that is applicable to the examination of organisational performance that nurses, whether they wish to accept or reject, are consummately involved in and to which they are therefore obliged to respond.

Operations research (Hovenga, 1999) is a discipline within its own right and is concerned with analysing such variables as clinical and resource management, decision-making regarding treatment options and co-ordination of services by utilising observational studies and secondary data sources. Examples of secondary data sources are described by Hovenga (1999, p.272) as "paper-based documents (either in use or from historical archives), charts and records and...databases". Both paper-generated documents (clinical patient files) and DHB databases (PIMS/Homer™) were accessed for the purposes of this study.

Although Hovenga believes that little is written about its application in the field of health, there are some excellent recent examples of health service research design that demonstrate otherwise (Roades, Brown, Smith, Willand & Bell, 2002; Smith et al, 2002). Any enquirer embarking on this type of research is required to have practical and theoretical insight into service input, process, output and outcome relationships. Therefore, it may not always be the most appropriate form of enquiry to embark on as a truly objective observer and could be criticized for encouraging bias from the outset. Experience in research application, design and method is also essential as researchers utilizing this method are required to identify and interpret factors that directly influence the service input, process,

output and outcome relationships during the data collection and interpretation phases of the research project.

LeFort (1993) offers excellent guidance for researchers interested in the quantitative methodology and considers the substance of the statistical versus clinical significance debate and makes four main suggestions for consideration when undertaking a quantitative approach to research. These include:

- Providing descriptive data on individual changes or relationships that have evolved during the project.
- Providing measures of magnitude of relationships (if any) between the variables being considered.
- Collecting normative data that is gender or culture-specific on the variables considered.
- Issues relating to any clinical limitations ought to be addressed in the methodology and discussion sections of the research report.

In keeping with Lefort's suggestions chi (X_2) testing was utilised in order to demonstrate if there were any significant relationships in age, gender, triage code, address or length of stay between those who DNW and the rest of those who stayed to be seen. Descriptive frequencies were collected and analysed on the variables selected and are described in more detail in Chapter Four.

Interpretive Paradigms

Qualitative research analysis, often regarded as the contrast to quantitative enquiry, derives from social science epistemology or ethnographic paradigms. It is often described as a methodology that is better equipped to offer meaning to the lived experience of a particular phenomenon that is impossible or difficult to quantify through purely observational means (Minichiello, Fulton & Sullivan, 1999). When studying people's reasons for leaving the ED, therefore, it would be imprudent entirely to ignore this method. It is a creative process which depends upon the skills and capabilities of the researcher. Content analysis, or "thematic moments" as some commentators call them (Bergum, 1991), arise as a further way to elaborate on the collection of elements that stand out from the open-ended questioning employed. It's not an exact science as the researcher needs to pick out or foster characterisation of particular themes from participant responses. Astute pattern recognition arising from immersion in the data when thematic strand analysis is used is, of course, open to interpretation and hence researcher bias which can affect the validity and reliability of results. The researcher aimed to identify the day-to-day experiences and give meaning to the incidents of participants who DNW. This is more akin to techniques adopted in phenomenology, grounded theory and ethnography. Participant responses both individually

and as a group were analysed and interpreted to identify meaning and common themes were then triangulated against the statistical data generated to see if any relationships existed and if participant responses were supported.

Data Triangulation

A definition of triangulation according to the Oxford Concise English dictionary (Thompson, 1995) relates to the division of an area into triangles for land surveying purposes and navigation. In research, however, Minichiello, Fulton and Sullivan (1999, p.45) report that, "triangulation is the process by which the same issue is investigated in different ways so that different types of evidence are produced to support a particular finding". Bergin and While (2000) and Kimchi, Polivka and Stevenson (1991) warn that, due to the different meanings – and therefore perceptions and understanding – of triangulation, the purpose and the type of triangulation adopted needs to be highlighted in the study in order for the correct interpretation to be understood in the context of the study

It is therefore vitally important to state that the methods employed in this study are not an attempt to undertake what may be considered a classical triangulated study. However elements of data triangulation were used in this study which involved the use of quantitative and qualitative data simultaneously to measure the same phenomena. Figure 3 outlines the data triangulation techniques undertaken to measure and observe the DNW phenomenon. A typical triangulated study is largely concerned with combining two or more alternative data collection approaches to measure the same variable. In the measurement of such discrete variables used in this study, elements of triangulation contributed to the investigators efforts to achieve [or deny] convergent validity. For example, were the themes gained from participant responses acquired from the open-ended questions of the survey (thematic analysis) supported or negated by the data gained from statistical analysis of the same participants? Participants gave some surprising and unexpected results which are described in more detail in Chapter Four and discussed further in Chapter Five.

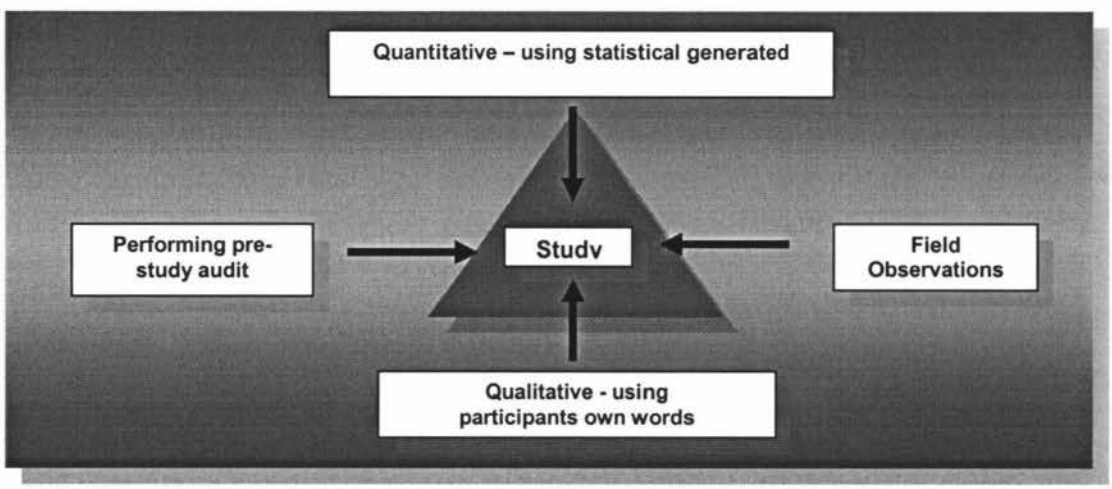

Figure. 3 – Elements of Triangulation

Summary

Post-positivist notions of research are clearly guiding philosophical arguments in nursing to conclude that there are now too many examples of research questions where neither purely quantitative or qualitative explanation are capable of adequately offering true meaning (Schumacher & Gortner, 1992). Therefore, researchers are left to be guided by works from such authors as Newton-Smith (1981) who concludes that while observation and theory remain largely indistinguishable, they could be more simply be considered as equal concepts on a reality continuum with theory at one end of the "reality-spectrum" and observation at the other. Researchers are encouraged to meet in the middle of this hypothetical "reality-spectrum" and undertake research which incorporates a robust design that adequately and pragmatically addresses and balances both the strengths and weaknesses of the quantitative and qualitative paradigms. Shih (1998) stresses the need for new perspectives and priorities in existing nursing philosophical paradigms, if they are to conceptualise human responses to health issues and their impact on service provision.

As previously stated, one aim of the study is not to identify "satisfaction" as a particular indicator of service quality but rather to identify if the quality of service received (perceived by the respondents) had any inherent impact on their outcome as a result of leaving before seeing a doctor. Quantitative and qualitative data were obtained through a validated survey sent to people who DNW in the Emergency Department. These data were statistically and comparatively analysed and are presented separately in Chapter Four to minimise potential researcher bias (Mays & Pope, 1995a). Therefore, to remain a robust study, the researcher will highlight both the inherent strengths and weakness of the study and its methods once the data has been collected and then suggest alternatives (see Chapter Six).

Methods

Study Phases

Due to tight time frames – the completed project within the academic year – the study needed to be conceived and divided into distinct phases. These are outlined in Table 2. Although this outline may infer a linear fashion of events, a number of things were able to be undertaken simultaneously. For example, obtaining software and construction of the SPSS database took place at the same time as gaining ethics approval and creating a master document. As monthly objectives and targets were set at the beginning of the year, this assisted in gauging performance and identifying priorities to meet objectives. This proved to be a useful technique as time was limited and allowed the researcher to show what had been achieved, what was yet to be achieved and what challenges had been encountered that required further assistance. It also allowed for the look of the project to develop and show where deficiencies needed to be addressed to meet targets.

Table 2. - Phases of study

Pre- Data Collection Stage	*Data Collection Stage*	*Analysis & Interpretation Stage*
Phase One	**Phase Two**	**Phase Three**
• Determine Research Proposal • Commence Literature search • Commence obtaining & reading literature • Formulate survey & recruit assistant • Formulate DNW Inclusion & Exclusion Criteria • Gain validation of survey from peer review (Appendix N) • Formulate ethics proposal • Submit for scientific review • Make all recommended alterations and submit for regional ethics committee approval • Gain permission for study from all relevant bodies • Specify & Set monthly objectives/targets • Meet with academic supervisor monthly	• Start sending out surveys • Commence building SPSS database • Access DHB statistics • Formulate pivot tables from data gained • As responses were received commence data entry of responses gained • Continue specific literature searches and gain more literature to read • Recode statistical data as required • Check DNW data collected against DHB DNW data • Ensure surveys are being posted out and identify any issues or problems. • Create master document and start writing thesis • Perform systems process analysis & write up flow chart of patient flow	• Perform statistical testing • Perform qualitative data analysis and interpretation – as described in Figure 5 • Continue to write up results as they were generated • Perform triangulation of results • Interpret significance and discuss results • Continue to write main document • Determine a date for first draft submission • Await results and make appropriate changes • Submit final thesis • Initiate proposed utilising appropriate change management process • Disseminate results • Publish results

As material for each chapter was developed, this was used as the focus for discussion with the academic supervisor, which also helped to achieve the objectives. It also allowed for the look of the project to develop and show where obvious deficiencies existed in the text and diagrammatical support that needed to be addressed in order to meet targets.

Study Setting

Surveys (Appendix C.) were posted to people who attended the Emergency Department of a Level 5 district hospital that provides some tertiary services in New Zealand. The surveys were sent to those who presented and registered their details but did not wait to see a doctor. All participants received a documented triage assessment and were allocated a triage score. Surveys were sent to participants between May 31st and October 2nd, 2004. The timing of the survey may be relevant as it took place during winter months which historically demonstrate higher levels of Emergent Department activity. In fact, during the study period this particular ED experienced record numbers of presentations for which the reasons continue to remain difficult to explain fully (Rankin, 2004). Therefore, all data collected required to be subjected to seasonal variance testing. The annual presentations to this department are approximately 29,000-31,000, with an annual growth rate of around 5%.

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Sampling

There are a number of sampling techniques open to researchers who want to undertake quantitative research. Some researchers conclude (Schofield & Jamieson, 1999) that, for a variety of reasons, it is often impossible to access whole populations one would like to research. They discuss the need for using sampling frames. Therefore, once the target population had been identified and before researchers commence data collection, they need to operationalise the target population by developing criteria or specific descriptors for that population to be studied (see Table 3, p.51). Actual data numbers were accessed for those who did not wait during the time the study was being conducted as the population size was fairly small (n=642). Demographic data was able to be collected without having to contact participants. Times of presentation, triage score and a brief description of presenting complaint were transcribed onto the surveys sent to participants.

Selecting a sample by this method is an example of a non-probability sample that are more akin to qualitative designs. Random sampling is the preferred option in true quantitative designs, as they reduce the chance of bias in the selection. However, as mentioned, researchers also have to be pragmatic and because the researcher using this design already has specialized insight into service input and output, the target population to be researched had already been predetermined and selected by those who chose to take a DNW (Robinson, Woods, Snedecker, Lynch & Chambers, 2002; Bagust, Place & Posnett, 1999).

There are four main types of non-random (probability) samples which include: convenience; purposive; quota and snowball sampling. The researcher utilising a quantitative design might decide that a purposive sampling method might be appropriate. This is because the researcher is required to have specific knowledge about the population – one that was fairly small and not necessarily that widely dispersed, enabling the researcher to hand pick from the selection criteria set. There is a risk of being highly biased, but the reasons for choosing this – perhaps *weaker* – sampling method have already been stated. Later studies might be able to examine or compare more closely the DNW patients being selected with inclusion criteria. It might be here that a researcher could begin to employ simple, systematic or stratified probability sampling – but that would be a different research question.

Validation

Questions were analysed from previous studies (Fry Thompson, Chan & Carpenter, 2003) and used as the basis for formulating the questions sent to participants in the final draft of the survey. The researcher performed an audit of this topic to further develop and validate the final questions before commencing this study. The results of this audit were presented at a recent national nursing conference (CENNZ, 2004). Undertaking this initial four-week audit and presenting the results to peers allowed the researcher to further modify questions and refine *how* those questions ought to be asked in order to maximise response rates. Networking with colleagues allowed for rich discussion about this issue and how the DNW issue was managed in other centres

During the audit, people were also contacted by telephone. However it quickly became clear that engaging with people about their reasons for taking a DNW was going to be too time-consuming. These telephone conversations often lasted an hour or more. Whilst these conversations generated a good deal of consumer responses, it became too difficult to sustain in the predetermined time frames.

Columb, Haji-Michael & Nightingale (2003) offer some specific guidance to those conducting research in the ED environment for those who work in the same setting. They suggest that data collection activity ought to be appropriately designed to enable staff to conduct their normal work simultaneously. Therefore, the telephone survey aspect was dropped and the project developed as a purely postal survey. The format of the survey was developed from reflection of the audit results. Initially, the questionnaire appeared on four single-sided A4 sheets. However, this was modified to a single, double-sided A4 sheet consisting of 38 questions designed using Microsoft©™ Excel spreadsheet format. Space was maximised to ensure that participants were not discouraged from responding by receiving a protracted questionnaire. Participants were encouraged to elaborate on their answers in case the survey's format prevented them from fully explaining their answers. A number of respondents took this opportunity to expand on their answers.

Questioning

A variety of techniques were employed when constructing the survey. Questioning included the use of both open and closed questions. Implied and explicit alternatives were offered also. Question order was considered and participant information not related to the focus of the study was moved to the end as directed by the Scientific Review Panel. Numerical, Feeling Thermometers and Likert Scales were employed. According to deVaus (1999), providing more than two options when constructing response categories offers greater flexibility and provides measures or indicators of intensity, extremity and direction which can later be collapsed if required. This was not required in the final data analysis. Questions were set in English language.

Response

Questionnaires were posted only once due to time restrictions. To generate better response rates, the researcher was aware that two or often three postings to participants are often undertaken (Altman, 1995). Surveys were posted together with Information Sheets (Appendix D) in postage-paid, self-addressed return envelopes. Once all responses had been received, they were spiral bound for ease of use as they were constantly referred to during the analysis of the open-ended responses.

The researcher aimed to capture between 60-70 responses. As postal surveys typically generate response rates of around 20%, it was anticipated that as many as 300-400 DNW people might need to be sent surveys (Altman, 1995; Columb et al, 2003; deVaus, 1999; Lefort, 1993; Jones et al, 2003). For the data to be representative, the researcher needed to gain responses from at least 10% of the annual DNW population for this Emergency Department. The population needed to be estimated before surveys were sent. The mean annual DNW population for this department had been 656 for the last 3 years and, on that basis, the researcher estimated that approximately 60-70 responses was a reasonable target.

Participants were encouraged to add any additional comments, should they not have the space to give their answers as they wanted. These were usually stapled to the returned surveys by participants. Providing participants with an email contact allowed another opportunity to respond to the questionnaire. A number of participants utilised this option with email correspondence being sent directly to the researcher from participants about their experience. These are discussed further in Chapter Four.

Ethical Considerations

A majority of the specific methods that were employed when undertaking the data collection were dictated largely by the nature of the information that was being collected and how that information was to be accessed. It seems logical at this point, therefore, to discuss and explain the ethical considerations that had to be adhered to in order to proceed with the data collection process.

All researchers, no matter what type of research they intend to carry out, have an obligation to ensure the confidentiality, anonymity, safety and protection of their participants. Nurse researchers are bound by Codes of Conduct (NZNC, 2003) but are also obliged when undertaking research to abide by many ethical principles (Snook, 1999; Thomson, Melia & Boyd, 1995;). These include the principles of beneficence, non-maleficence, honesty and veracity. When submitting a proposal to undertake a research project, the researcher is obliged to gain approval from the local Ethics Committee to ensure that these principles and others were upheld. These committees review the intended research project and assess risks for any potential participants in the proposed research study. Assessment includes:

- analysis of the risks associated with access to information;
- incentives and inducements (if used);
- where the research is intended to be carried out;
- use of photographic and/or AV recordings;
- procedures undertaken to gain full informed consent;
- adequate monitoring of research data and research methods (Parsons, 1999).

The suitability of the researcher as a researcher and his corresponding capability to competently carry out the research needed to be assessed also. The impartiality of the researcher can only be gained if there is strict adherence to all university and regional Ethics Committee recommendations (Appendix E) and the research cannot develop further until approval has been granted by both Committees.

Ethics Committee Approval & Validation

There were a number of reasons why this project required regional Ethics Committee approval before it could proceed. These included:

- Participants were DHB patients whose clinical records were to be accessed by the researcher.
- The project dealt with participants who were children and other vulnerable people.
- Scholarship funding had been sought to part-fund this project, so any potential conflict of interests around this sponsorship needed to be assessed (Appendix F).

Conflict of Interest

There was a potential conflict of interest with this project and its researcher. The main researcher is the Charge Nurse of the unit in which the research project was proposed. A potential conflict of interest would have arisen if the results of the research pointed directly to poor performance by members of the ED staff for whom the researcher had operational responsibility as Charge Nurse. The researcher might be left in a potentially difficult and compromising situation – as researcher, he might be privy to information of which he might not have been aware as Charge Nurse. To remain true to the positivist paradigm, the researcher needed to demonstrate that he was not inhibited in collecting data and would remain separated from the subject he was measuring/exploring.

To manage this, the researcher's activities were overseen/monitored at the operational level by the Team Leader/Clinical Director of the Emergency Department and the DHBs Director of Nursing. This ensured that patient participation and research conduct adhered to all ethical, professional, legal and legislative requirements and obligations. Any conflict of interest, either actual or potential, was discussed at length with the Group Manager for surgical services, Team Leader and Clinical Director for Emergency Services beforehand. As a result, where the researcher identified serious conduct issues, with the staff, gained from participant responses then this was to be reported directly to the Team Leader. The Team Leader would then deal with this according to hospital policy/protocol. Staff performance never needed to be addressed by the researcher in his capacity as Charge Nurse or referred to the Team Leader .

Permission was sought from Clinical Director, Team Leader and Surgical Services Manager of the Emergency Department before commencing the study (Appendix G). The research project was also obliged to strictly adhere to the relevant DHB policies on research and innovative practice and actively demonstrate how steps had been taken to adhere to this DHB policy. (Appendix H). The researcher needed to ensure that undertaking the research project would not have a negative impact on the normal activities of work expected of the Charge Nurse. The researcher set up a monthly reporting system with Team Leader in the ED. Monthly reports and project development were added to the agenda of the senior team meetings held in the ED and shared on a monthly basis with the Group Manager for Surgical Services. Study development with incremental results was shared on an *ad hoc* basis with Department staff, if time permitted, during weekly staff meetings.

Researcher/participant relationship

To avoid any potential pressure to participate – such as fear of negative consequences for the participants if they refused to complete a survey – the researcher might have been expected to take leave of absence from active duty whilst collecting data. However, this was not possible, so the use of a research assistant (Appendix I) was acquired to

demonstrate a reasonable degree of distance between researcher and participant. The research assistant was recruited from within the ranks of the existing nursing staff complement of the Emergency Department. This was a necessary stipulation because the nature of the exclusion criteria (see Figure 3, p.51) needed to be fully understood by the research assistant and applied with reasonable knowledge and insight of the context of the study's aims – but without a negative impact on the study's validity.

Additionally, participants were told on the Information Sheet only that the researcher was a Charge Nurse at the DHB where the research was being conducted. It was felt that not informing participants that the researcher was actually the Charge Nurse of the Emergency Department they attended might dispel any potential or actual fear or threat about participating. All participants were given the option of receiving a final research report. Therefore, participants needed to be traced at the conclusion of the study so that the results could be correctly disseminated to those who participated and had indicated they would like to know the final outcomes of the study's findings. The research assistant was a necessary step to maintain participant anonymity and the ability to trace participants. However, the Ethics Committees felt that a significant element of relationship between the researcher and participants still existed and needed to be acknowledged during data collection. The researcher therefore needed to be aware of this relationship and this can be validated by the following case study generated from collection of the data.

Patient X – Case Study

Patient X was a 14-year-old female who presented late one evening with ingestion of cannabis oil. The girl presented to the Department with friends and registered her details. However, after 35 minutes she decided to leave. She didn't inform staff of her intention to leave. She had been given an ATS code of 4 – History: Ingestion of Cannabis Oil (A: Airway- Patent; B: Breathing – No problems. Respiratory Rate 18/min; C: Circulation: Pulse normal radial pulse; Colour good; D: Disability GCS 15 with pupils equal and reactive to light, although she felt nauseated and lethargic. R: Risk Factors included ingestion of unknown amount of a drug). As she was a minor then, her age placed her in a potentially vulnerable category. She hadn't vomited and denied other substance abuse. She denied suicidal intent and indicated that her drug-taking was purely recreational but thought she'd just had a little too much and was concerned. As she had company, this patient was managed safely in the waiting room by triage staff. But she decided to DNW a short time later.

Patient X's details were discovered retrospectively by the researcher and were excluded from the study. However, her details were passed onto the Team Leader to follow up. The researcher felt that there was insufficient information to adequately ascertain this child's risk. Therefore, further investigation was felt appropriate. Staff members from the DHB Child

Health Unit were contacted for guidance. The girl's GP was contacted to establish if they were familiar with the child. The Local and National events register of Homer Database was accessed to establish if she was known to any other agencies. She was known both to the Public Health Team and the Child, Youth and Family Service Teams. Contact was made with these agencies. Details were passed on about how this information had been obtained and asked whether contacting this patient and/or her parents or guardians would be appropriate.

It was felt that contact would be made in the first instance through the Public Health Team and that they would access the child through school to establish if her *recreational* drug-use was escalating and/or if she needed additional help. This would be done initially by school staff as they knew the girl and her family circumstances. Although there was never any direct contact between the researcher and Patient X, resources were mobilised to investigate this issue further and a therapeutic relationship can be argued to have existed, albeit indirectly.

Beneficence & Non-Maleficence

The research study needed to demonstrate that knowledge gained from undertaking the research would benefit those who participated and that they would not be harmed by participating. The case study presented above is a good example of how care was taken of those who didn't directly contribute to the study but whose circumstances required further support. The researcher, by highlighting this girl's attendance and presenting problems to the ED, may have been putting the girl at risk of harm as he was not equipped with all the details of her family and social circumstances. Alternatively however, if he had done nothing and not inquired further into the girl's circumstances, then a child's escalating drug habit might have been missed by other health channels – so putting her in further danger.

By sharing the participants' experience of visiting the Emergency Department, the researcher's aim is to gain direct insight into the reasons why people decide to leave before assessment by a doctor. From this knowledge, the researcher may be able to suggest how improvements might be made to encourage people to seek appropriate treatment whilst simultaneously assessing their safety. It has been highlighted that the researcher was able to identify potentially and/or actual risky situations – for both users and providers of Emergency Department services – and make recommendations on how to reduce this problem. The primary goal is to gain insight into emergency services from a consumer's perspective so as to make suggestions on how to improve the service.

Confidentiality & Data Protection

Accessing the intended DNW sample could only be undertaken by extracting participants' information from the DHB databases (PIMS/Homer®™). As mentioned earlier, this permission was sought from both the relevant DHB and Ethics Committee.

Lists were constructed by the research assistant by utilising Patient Identification Labels created by the PIMS/Homer system. Patient identification labels and corresponding study participant numbers allocated by the research assistant were constructed. This was kept by the Team Leader of the Emergency Department and not shown to the researcher (Appendix J). This list was to ensure that participants could be traced incase they were found from their responses to be at significant risk in terms of their health, and also so that final reports could be sent.

A second list that mirrored the Team Leader's list was constructed by the research assistant and given to the researcher (Appendix K). It had a patient identification label, study number, triage code, presentation times and brief description of presenting complaint. However, on this list all identifiable participant information was blanked out by the research assistant. Collecting this information permitted the researcher to achieve three important things whilst waiting for responses that were:

- preserved the anonymity of participants from the researcher.
- enabled the researcher to collect demographic data on all people who DNW against those participants who responded to the survey. This information was used to begin construction of the SPSS database (discussed later) subsequently employed to transpose and analyse all data received.
- enabled the researcher to identify those participants who wished to receive final research reports as well as those who didn't, when responses were finally received.

Data Security

All data directly associated with this study was securely stored in the Charge Nurse Office in the Emergency Department where the researcher was employed. The office remained locked when unattended and all hard data collected remained in a dedicated locked filing-cabinet drawer. Any information later transcribed to databases (see later) preserved the anonymity of participants and had monthly renewable password protection known only to the researcher and DHB Information Systems staff. The researcher, academic supervisors and Team Leader for the Emergency Department had access to these lists of participants sent surveys only in the event that a participant needed to be traced. Information connected to the study that the researcher kept/used at home was password - protected on the family computer and transported in a lockable briefcase. The researcher's supervisor was responsible for the safe and appropriate disposal of all information as directed by Massey University after a period of five years.

Vulnerability and Potential for Distress for Participants

There was the potential for breach in participant confidentiality. Contacting patients to identify their willingness to participate in the study highlighted that these individuals have

actually attended the Emergency Department, a fact that some participants may wish to conceal, for whatever reason. This, it was decided, would largely depend on the nature of the reasons surrounding the participant's presentation. Once the surveys were posted out however, the researcher had no control on who actually opened the letter. However, to manage this, the research assistant screened all DNW patient notes first to identify if there were any obvious reasons to exclude them from the study (see Table 3, p.51).

For similar reasons, it was considered possible that receiving such a questionnaire might cause participants or their families emotional upset/distress – for example, participants who presented to the Emergency Department and later died. Similarly, patients who are terminally ill may feel vulnerable as a result of experiencing pain and discomfort (Randall & Downie, 1996) and may lack normal defences against intrusion (Aranda, 1995). Elderly patients are doubly vulnerable as they experience both ageing and illness, two factors which may diminish autonomy (Moore & Miler, 1999). Terminally ill patients' poor physical condition and shorter life expectancy is likely to further increase researchers' reluctance to make demands on them. The family of elderly, palliative or recently bereaved relatives may feel that receiving such a questionnaire would be distasteful and/or disrespectful, as clearly no one had taken the time to check if the patient is able to complete the survey.

To manage these problems, the research assistant ran a check through the Local and National events section of the PIMS database. Participants who DNW but who did not reside within the DHB region may not have been traceable using this strategy. Therefore, an attempt to contact these participants by telephone was taken before sending the postal survey to establish if they would be willing to participate and if it was appropriate to send the survey. It was felt that this demonstrated a reasonable method of ensuring suitability of the potential participant and their ability to complete the survey.

Risks

If any participant was found, from the information provided in the returned survey, to be at risk of impending or actual serious/critical illness, the researcher would instigate a predetermined plan to manage and ensure the safety of these participants. Once information from respondents had been analysed by the researcher and they were found to be at risk, he would take immediate steps to inform the Team Leader or Clinical Director of the Emergency Department. The participant would then immediately be excluded from the study. The participant would be traced from the list created by the research assistant (discussed earlier) or delegated staff member. Either Emergency Department staff or other appropriate DHB support people would be directed by the Team Leader or Clinical Director to make attempts to contact these participants, if it was deemed necessary. Once contacted, a brief assessment of the person's present condition would be made by an appropriately trained individual to establish the participant's current health status. Advice

would be given to the participants on their present condition and what appropriate steps they ought to take to ensure their physical health and/or safety. It would be the participants' responsibility to follow any advice given at their discretion. The researcher, associated University or DHB would not be able to accept responsibility for the consequences or outcome if the person failed carefully to adhere to advice given to them at that time.

Contact details of the researcher undertaking the study were made available to participants on the information sheet. However, any risk was considered to be minimal, as these details only pertained to business contact information that is freely available to the public through normal channels. There was also a potential for encouraging certain participants to re-attend the Emergency Department unnecessarily (see exclusion criteria for those patients with known Munchausens Disease. See Table 3, p.51). The researcher did not want to be seen to be encouraging patients to contact the ED unnecessarily as this would have placed an unnecessary strain on already over stretched resources. However, this was unlikely, as the research assistant was able to identify common presenters known to the Department and consider their suitability for inclusion.

Informed Choice and Implied Consent

Each participant was sent an Information Sheet with the survey (Appendix C). The information given to participants was largely dictated by the Ethics Committee. Each information sheet had to include certain mandatory fields to ensure people could make an informed choice to participate or withdraw at their discretion (MUHEC, 2004). It also contained details of the project which were posted onto the DHB website once Ethical Committee approval had been obtained. The Information Sheet informed participants that completing the survey and returning it to the researcher implied and assumed their consent to participate in the study. If participants took the time to complete and return the survey, it seemed a little unnecessary to ask them to sign a form saying that they gave their consent for the information to be used by the researcher. If respondents hadn't wanted to participate then they didn't need to return anything. Participants were also given the option of contacting the researcher to ensure that their demographic data be excluded from the study as they had the right to withdraw from the study at anytime. This did not occur. Participants were also given the option of contacting the research team by email should they not choose to complete the survey but wished to share their experience in their own words. This did occur and a number of participant responses were gained from this method from people who never actually completed or returned the survey.

It was possible that a variety of vulnerable people might have been contacted during the course of this research activity — such as the elderly, disabled, people with mental illness etc. However, this was sometimes difficult to discern from the details that the research assistant held when posting out the surveys. For people who could not read, write or understand the Information Sheet, a contact person was nominated to help participants who

might wish assistance in completing the survey. Surveys were sent to each participant and, for those under the age of 16 years, surveys were sent c/o their parents or caregivers. It was up to the discretion of the parent or guardian to complete and return the survey on the child's behalf or allow the child to complete the survey. For children, the researcher sought guidance from the Clinical Nurse Specialist and Clinical Director for Child Health at DHB.

Cultural, Ethnicity & Researcher's Capability Aspects

Ethnicity was not a prime focus of this research topic. All consumers of the emergency service would be considered potential participants and would not be excluded on grounds of their ethnicity. To address the challenges of cross-cultural research (Spoonley, 1999), the researcher needed to present his study in a manner that ensured it would not negatively impact on those being investigated. The researcher was required to demonstrate that he had been a practising nurse in a New Zealand setting for a number of years and gained a deep insight into the many issues surrounding bi-culturalism and its implications for practicing in a culturally safe way. The researcher has also practised as a nurse in the UK, Australia, and Germany. From this experience, the researcher has gained an extensive and broad experience of caring for people from a wider diversity of ethnic groups than are commonly seen in a New Zealand setting.

To steer away from what Te Awekotuku (cited in Tolich & Davidson, 1999 p. 92) calls "cultural imperialism of past research practice in New Zealand", the researcher actively worked to recognise and demonstrate, in all aspects of the research project, the importance of information as taonga and that knowledge belongs to tangata whenua. As such, information was not removed or handed on without participants' express approval. The researcher understood the need for appropriate dialogue and communication with Maori participants and was particularly focused on ensuring that information was understood and that their participation was valued. The researcher attended a two-day workshop on the Treaty of Waitangi and undertook cultural safety training with its application to the healthcare setting. The researcher also completed elective sociology papers on endangered cultures and introductory sociology topics during undergraduate study and therefore actively worked to ensure that all relevant articles of the Treaty of Waitangi were respected in any dealings with Maori participants.

These actions mentioned were not mutually exclusive and extended to all participants contacted during the study. As it was likely that potentially all ethnic/social groups present in the study's region might be contacted during the course of this research project, it was not anticipated that the project would impact directly on Maori persons as Maori. However, the remote possibility that it might remained. It was acknowledged that Maori are a recognised disadvantaged group that has difficulties with access to healthcare. Tolich and Davidson (1999, p.94) outline a number of specifics and establish the benchmarks of "partnership and

accountability" when exploring the practicalities of making contact with groups to which the researcher does not belong. Therefore, it was decided that, if found during the course of the research that the project negatively impacted on Maori persons as Maori, then direct guidance would be sought from the Maori Health Unit connected to the DHB. The researcher sought advice/guidance on cultural issues from Te Whare Rapuora/Mâori Health Unit before commencing the study. All participants who required assistance with completing this survey could access services from this unit (Appendix L).

Quantitative Data

The next section provides a description of the research process used to obtain and process the quantitative data including the measures. In-depth analysis of this data can be found in Chapter Four. All quantitative and qualitative hard data can be found on the CD-Rom supplied in Appendix M. Any identifiable participant data have been excluded to maintain participant confidentiality and anonymity.

Data Collection Steps.

Patient records generated as a result of patients presenting/registering but who subsequently did not wait were collected by reception staff at the time patients presented. Participants were also identified by accessing the District Health Board database. Utilising the Patient Information Management System (PIMS) allowed the identification of DNW categories of patients. These were extracted weekly by the research assistant and matched against those collected by the research assistant. This step ensured that all DNW patients were correctly identified and minimised the number of people being missed. All DNW patients extracted from the DHB database comprised the pool of the potential participants for this study. Each set of patient notes was analysed and compared to the following criteria (see Table 3.) developed for patient exclusion by the research assistant.

Once participants were successfully excluded from the study, surveys were then prepared by the research assistant. Three identical patient identification labels for each DNW participant were created using the DHB information system (PIMS). One label was placed on the survey to be posted with name, address, and NHI and other unique identification numbers indelibly blanked out. Participant numbers were allocated and assigned to the survey. Date of presentation, patient's age and GP were left legible on the printed label. Time of presentation and leaving were documented together with a brief description of presenting complaint and triage score. The other two labels were used to create the lists for the ED Team Leader and the lead researcher. List One (created for the Team Leader) contained a patient identification label (showing all information) with the corresponding participant number (Appendix J). List Two contained all the information about each participant who had been sent surveys including those who had been excluded (Appendix K).

Table 3 - Participant Exclusion Criteria
1. **Participants of no fixed abode.**
2. **Deceased patients – National events register checked for every participant to identify if they are still alive.**
3. **Participants who are in police/prison custody at the time of their presentation.**
4. **Participants escorted from the Emergency Department by police/security staff/ military police before being assessed by medical/nursing staff.**
5. **Tourists/Visitors to NZ who register their details as resident overseas.**
6. **Victims of abuse including sexual, emotional, racial and/or physical.**
7. **Participants who present with problems resulting from potentially compromising or questionable behaviour/activity.**
8. **Participants with confirmed Munchausens disease or Munchausens-by-proxy. Patients with this pathology have the potential for skewing the results. It is recognised that these individuals often have a pathological need to present to the Emergency Departments even when there is nothing physically wrong. They are also well known to the department staff.**
9. **Individual participants who consistently present to the ED and DNW more than three times in the same week. These individuals also are usually known to the department and have underlying medical conditions and/or social issues that may skew the results.**
10. **Participants with genito-urinary or sexual health problems. These participants were to be saved any unnecessary embarrassment or distress that highlighting a visit to the Emergency Department might incur for them.**

The surveys were placed in an addressed envelope along with the Information Sheet and a self-addressed, postage-paid envelope. Once completed, the surveys were returned by willing participants to the researcher at the Emergency Department. Figures 4 and 5 outline the processes followed by the research assistant and lead researcher once surveys were returned.

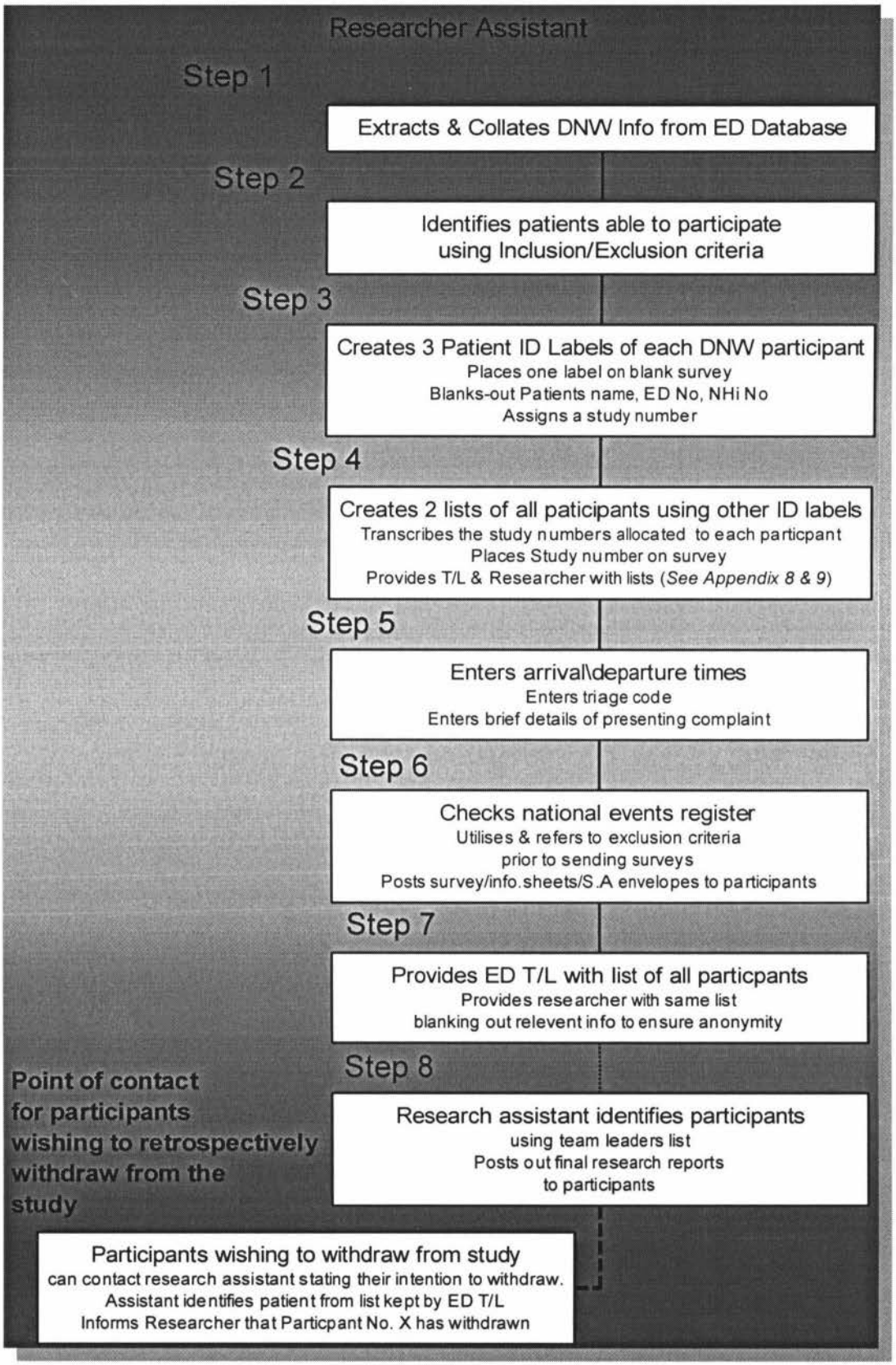


Figure. 4 – Role of the Research Assistant

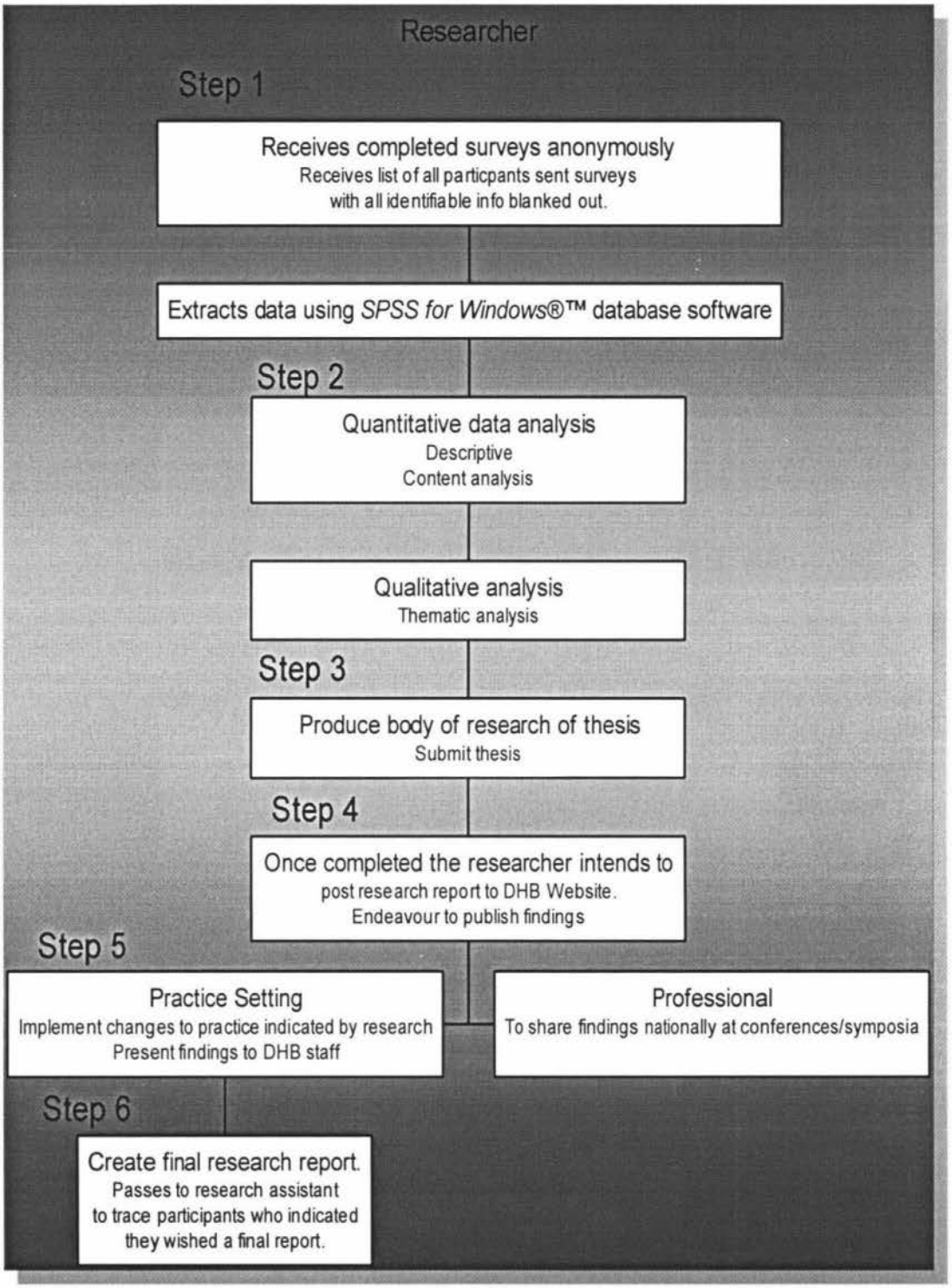


Figure. 5 – Role of Lead Researcher

Using SPSS®™ software for data analysis.

As with most quantitative approaches to research, the complex and often multivariate nature of operations research requires a heavy reliance on mathematical modelling. The dependence of operational research on probability theory, mathematics and statistics, understanding of random variables and sampling, regression and sensitivity analysis are common in operations research. Data is often collected using databases, therefore a keen understanding of the appropriate IT device and data extraction techniques is essential. Data collected from surveys were transposed onto a database constructed by the researcher using SPSS statistics software both before and after surveys were sent.

SPSS 10.0 ®™ is a sophisticated piece of computer software commonly used by social scientists and related professionals for statistical and analytical purposes. Although a number of versions are currently available on the market, version 10.0 (a slightly older version) was the particular one used by the researcher. There are many advantages to using a computer to carry out statistical analyses. These include:

- increased accuracy and speed allowing quicker data analysis;
- versatility – by offering a wider range of statistical techniques;
- graphical trends, plots and histograms can be developed to inspect raw data;
- flexibility – permitting small changes to data to allow repetition of previous statistical testing without laborious re-analysis;
- vast volumes of data can be more easily dealt with;
- easy transfer of data electronically between computers.

However, Altman (1991, p109) discusses the disadvantages of over-emphasis and over-reliance on computer packages, warning that:

- Not all statistical programmes are well written and may give false results due to inadequate understanding of the relevant statistical theory;
- Versatility, whilst an advantage, can also be a disadvantage because it can lead to researchers attempting to conduct inappropriate testing of their data which doesn't support particular methods employed;
- Number crunching can lead to a *removal* or *distancing* from the data which means that researchers may get no feel for the way individuals respond;
- The "Garbage in, garbage out" theory indicates that results are only as strong as the data initially inputted. Coakes & Steed (1999, p.xii) perpetuate this theme with SPSS by insisting that at least a rudimentary "degree of statistical knowledge is assumed" and required by researchers if it is to be utilised correctly". It is essential

that all data collected is adequately screened for its suitability for transposition to the SPSS format.

Preparation of Data Files

The surveys sent had a number of variables that could be measured before a response was received. Preparing the data files prior to receiving responses meant that the researcher had an opportunity to rectify any data entry errors when responses were eventually received. Although careful screening of the available data took place, a number of errors were picked up when participant responses were loaded onto the database. These mainly demographic data included: participant number, gender, age, time of presentation, triage code, town where participants lived, brief description of presenting complaint and GP's name. The variables were defined according to the programme's parameters and value labels were applied. Alphanumeric codes for the variables could have been used but Coakes and Steed (1999) advise that numeric codes ought to be used wherever possible. For example, for gender the code of 1 for male and 2 for female was assigned. This type of variable is categorical because it has discrete categories. When variables were measured using interval or ratio scales then coding was not relevant unless categorisation was required.

Coding

Each question asked on the survey was a new variable that could be analysed. However, variables on SPSS programs can only have a maximum of eight characters and must begin with a letter. Therefore, for each question asked in the survey, the number of the questions as they appeared on the survey corresponded to the variable label. For example, the first question on the survey was: "Was this your first visit to an Emergency Department?" The variable label was Q1. Coding of the information was the principal component of the analysis with a varimax rotation applied to the data extracted.

As responses began to filter back to the researcher, information gained had to be coded before results could be inputted into the database. Therefore, answers required to be assigned corresponding codes. An example of this shown as follows:

- Q1. Was this your first visit to an Emergency Department?
  Response 1 = No
  2 = Yes
  3 = No response

For some statistical testing to be achieved – such as undertaking bivariate and partial correlations using Pearson's product-moment correlation (see Chapter Four) – each category of the dichotomous variable needed to be approximately equal and variables

required to be recoded as 0 and 1. Simple bivariate correlation, also referred to as Zero-order correlation (Coakes & Steed, 1999), refers to the correlation between two continuous variables and is the most common measure of linear relationship.

Analysis of Quantitative Data

Quantitative data generated were analysed using both SPSS and Microsoft Excel software programmes. Comparisons relating to the demographic characteristics (age, gender and address), clinical characteristics (ATS Code) were made between those who DNW and those who remained for their management and treatment to be completed. Data were analysed using chi square (X_2) testing – a non-parametric test which assesses whether a relationship exists between the categorical variables – to determine if there was a relationship between the biographical/social factors and the outcome. All tests were two-tailed, with statistical probability being set at the customary level of $p = 0.05$ using SPSS. Pivot tables from each programme (SPSS and Excel) were the prime tools utilised to extract data. Descriptive statistics were used to summarise the characteristics of the participants and provide means (averages) and standard deviations (which express the variability of the measurement). Pearson correlation was used to measure the relationship between time waited and whether people took a DNW.

Once data had been collected and transposed onto the SPSS database, another check was taken by the lead researcher to identify if any patients had been missed. The DHB Statistics department was contacted and asked to provide specific data on DNW patients and this was cross-matched against the data collected by the researcher. It is important to note that the total DNW population (n=646) is different to the sample DNW population (n=489). The reason for this is because a significant number of people were assigned triage categories of 0. This indicates those who registered their details but left before a triage assessment could be performed. Therefore statistical tests carried out are on two different population sizes and are indicated by the researcher.

The statistical tests and the results carried out on this data will be discussed and elaborated further in Chapter Four.

Qualitative Data

Analysis of the open-ended and email transcript data generated was based on the methods used by authors such as Burnard (1991). Burnard adapted his method of content analysis from the "Grounded Theorists" approach initially developed by Glaser and Strauss (1967). This says that the categorisation and codification of qualitative material should pass through various stages. Added to this, Brink (1991, p.178) believes that "analysis in qualitative research refers to the categorisation and ordering of information in such a way as to make sense of the data [collected]". Condensing, extrapolating and modelling are common

methods undertaken when working to create qualitative meanings from (often large) data sets. The fact that the open-ended responses and the email responses were fairly short, and little in number respectively, data was amenable to the possibility of computer manipulation using the SPSS software. However, the researcher felt that content or thematic analysis was a better method to employ when analysing these particular responses. An outline of the entire process is shown in Figure 6.

Phase One

In order to minimise researcher bias, all open-ended responses were transcribed by the researcher verbatim. Written communication details such as the use of capital letters and inverted commas were noted to reflect accurately the participants' use of inference to describe their experiences. One participant, for example, when answering the question: "Why did you leave the Emergency Department?" wrote: "Nurse inferred there was nothing wrong with me. Felt 'obliged' to leave". This approach attempted to ensure that the essence of what was written was accurately captured when placing the response in the correct category.

Phase Two

Brink (1991 p179) suggests that, to avoid selective inattention of data at the expense of other data, the researcher's analytical approach ought to be "exposed to a judge panel". Proper scrutinisation of the methods assists in assuring the data is valid and is a true account of what was said. Using this method, the actual categorisations or themes eventually generated aren't open to scrutiny *per se*, but the judgements about how the categorisations were finally selected can often be subject to criticism.

To ensure that a qualitative approach was maintained, the proposed techniques for analysing the open-ended responses were presented to the researcher's academic supervisors before the analysis itself began. The researcher was required to demonstrate that:

- a logical decision-making process was consistently applied when sifting through the responses received;
- there was adequate consistency in the inclusion and exclusion of all data;
- coding categories were mutually exclusive but also covered the universe of the content of the data;
- correct major and minor headings or themes were identified;
- content analysis was divided into descriptive and interpretative applications.

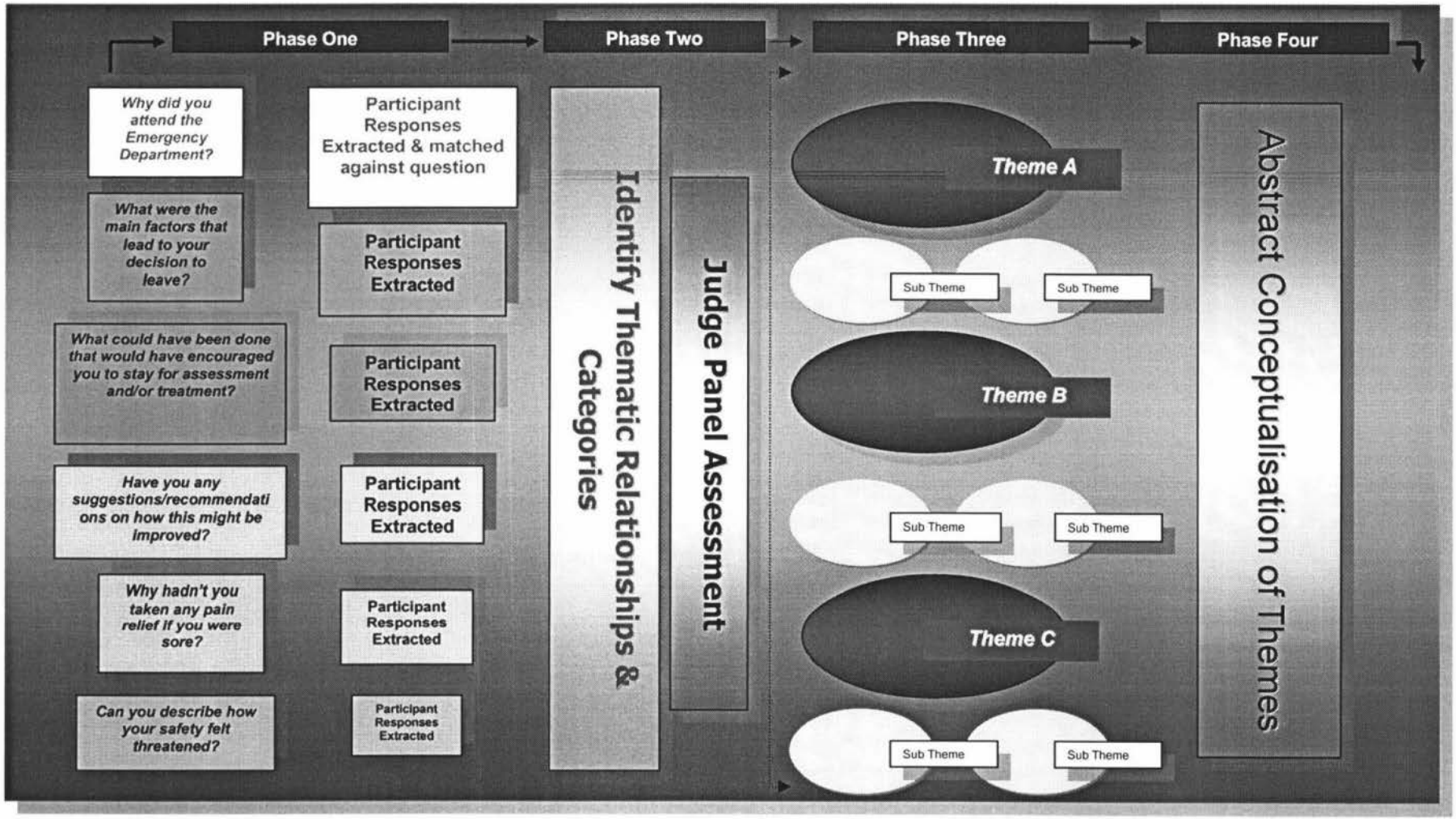


Figure. 6 - Methods used to extract themes from data

Phase Three

Individual patterns were then clustered to obtain general themes. The themes were noted under several headings and sub themes were created. From these five themes were initially identified which included:

- staff communication and behaviour,
- systems process,
- abandonment;
- other commitments and
- wait time too long (these will be analysed further in chapter five).

Individual patterns were then clustered to obtain general themes. The themes were noted under several headings and sub-themes were created. From these, five themes were initially identified which included: staff communication & behaviour; systems process; abandonment; other commitments and wait time too long (these will be analysed further in Chapter Four). Quantitative data was revisited and compared with the themes generated from the qualitative data. Written and email data were coded separately to allow for data triangulation (see Chapter Five). Descriptive content analysis and interpretative content analysis were then applied to describe, interpret and understand the meanings of the data collected.

Phase Four

To assist with the operationalisation of the information gained, abstract conceptualisation of the themes generated was undertaken with the themes drawn into a diagram (see Chapter Five). This was undertaken to show the main themes and how they rolled into one another. This, in turn, was intended to show why waiting is more easily identified when discussing DNW population groups and how it – and other concepts that affect DNW — may be considered by nurses when dealing with people at triage.

Conclusion

This Chapter has discussed the foundations of the social science applications utilised in this study's methods. The reasons for adopting a form of triangulation -between the quantitative and qualitative paradigms have been outlined. The aim is to explore fully the complex human and material systems which lead people to decide to leave the Emergency Department before seeing a doctor. It was suggested that the validity of research results might be enhanced by separating data and analysis so that readers can make their own comparisons, interpret their own connotations and absorb the meanings in their own ways. To minimise researcher bias in the presentation of results, qualitative and quantitative results are separated in their own dedicated sections in Chapter Four.

Chapter Four

Results

Introduction

This chapter outlines the findings of the study. This is followed by a description of the study sample and issues related to the gathering of the data. A description of how the data were analysed is then offered. There is a description of the patient sample and data related to the first question: "Is there a difference in characteristics between DNW and general ED populations?" This is then followed by a description of the biographical descriptive frequencies related to Question 2 which deals with correlations between those who Do Not Wait and their outcome. The Chapter is split in two separate sections with the first section offering the quantitative results generated. The second section deals with the qualitative aspects of the data collected. The Chapter's findings are then summarised.

Quantitative Results

Data Analysis

SPSS (Version 10.0) Microsoft Windows®™ compatible software was utilised to analyse the descriptive statistics generated from the demographic data collected. T-tests were used to examine differences in group means on the variables. Standardised values or Z-scores were also collected. These were useful when comparing the samples from DNW and general populations. Inspection of the Z-scores allowed identification of any outlying cases. In these analyses, an F-test of sample variances was carried out. If the probability of F was ≥.5, then it was assumed sample variances were equal and pooled variance estimates were used. If the probability of F was ≤.05, then it was assumed that sample variances were unequal and separate variance estimates of t were used (Snedecor & Cochrane, 1980; Altman, 1995). When expected cell frequencies were less than 5, Fishers exact testing was calculated. Pearson correlations were calculated to examine the relationships – where they existed – between demographic data and participant responses. Microsoft Excel©™ summary pivot tables and graphs were created from data extracted from DHB database Homer/PIMS©™ to represent the data found. Some results have been summarised using means or proportions and the 95% confidence intervals of differences.

Study Characteristics

The total number of ED presentations for the period of this study was 10,949. The total DNW population for this period was 642 and accounted for 5.9% of the total presentations. A total of 489 surveys were posted to participants over a four month period from a potential pool of 646 DNWs. 489 accounted for a 75% capture rate of the departments DNW population for that period. Of these, 84 participants (17.2%) responded directly to the survey. Five surveys (1%) were returned by the postal service as participants were not

recognised at the address they had given at their registration. Nine people (2%) were excluded from the survey as the nature of their presentation met the criteria for exclusion (see Table 3 p.51). Six people chose to respond via email but did not complete the actual survey. Three people returned the survey uncompleted.

The greatest proportion of DNWs fell into the less-urgent ATS Categories 4 & 5. One respondent was shown to have represented after his DNW presentation and admitted acutely with a deep venous thrombosis. He completed the survey as an in-patient. Distribution patterns were tested and shown to be normal. Participants indicated that they had had their problem for greater than 12 hours or more than one day before they sought help. 12% of respondents indicated that they had had their problem for weeks or even years. The mean age of a DNW was 27 years and was more likely to be male. There was an even distribution of DNW presentations between Monday to Friday but these increased significantly at the weekend. The DNW population studied demonstrated no significant characteristics – from the variables utilised – from the general ED population except that older people appear to wait longer and take DNW discharges less. Distribution patterns of the variables measured for triage, age, gender, address, time, were consistent with patterns for general population. A higher proportion of the DNW population lived locally than those who didn't. The three largest DNW groups presented to the ED exhibited the following problems: Respiratory/Chest/Rib pain (12.1%); Shoulder/Arm/Wrist/Hand injury (11.0%) and Leg Knee Ankle Foot Injuries (10.6%).

Missing Data

It should be made clear, at this point, that statistical testing could only be undertaken on a proportion (76.2%) of the total number (n=642) of DNW presentations. The reasons for this are as follows:

- 153 people (23.8%) that DNW, registered their details when they presented to the Department, but did not wait for a Triage assessment. Therefore when analysing the data for this group of DNWs, retrospective application of the exclusion criteria could not be applied. This is because not enough information existed for the research assistant to identify their eligibility to be included or excluded. Unfortunately the researcher was required to exclude them on ethical grounds.
- However as these people *had* registered their details, analysis of the information generated from their registration could be undertaken.

Biographical Data

Table 4 compares biographical details of the actual DNW population (642) and sample DNW population (489). These are measured against the entire ED general population measured (n=10,949) and the ED population who waited for treatment (n=10307). Later

statistics that are reported are calculated on the study sample measured (489). Males accounted for 55% of the DNW population but only 49% of the total ED population measured. Chi-Square (X_2) testing showed no significance for gender. The main age group for DNW was 14-64 years (75%). 60% of DNWs fell into the ATS Category 4 and 21% into Category 5. There was an equal daily distribution of DNWs occurring during week-days (13-15%) with a significantly higher proportion (almost double) at the weekends (23%). The highest proprotion of DNWs (30%) occurred between 12:00 and 17:59 hours. As the study progressed – during the winter months – the corresponding number of DNWs appeared to steadily rise and appears to correspond to increasing volumes of ED presentations. Most people who DNW, appear to do so, during the first two hours of their presentation. A higher proportion of people who present to the ED do not live locally (51.3%). More DNWs occur from those who live locally of the ED (within 5km). DNW appears to occur less in older age groups.

Table 4. – Comparison of Populations between June & Sept 04

	Total ED Population (n=10949)	ED Population who Waited (n=10307)	Total DNW Population (n=642)	DNW Sample (n=489)
Gender				
Male	*5414 (49%)*	*5062 (49.1%)*	*352 (55%)*	*271 (55%)*
Female	*5535 (51%)*	*5245 (50.9%)*	*290 (45%)*	*218 (45%)*
Age Group				
0-14	*2107 (19.7)*	*1963 (20.4%)*	*144 (22.4%)*	*106 (21.7%)*
15-64	*6095 (56.3)*	*5622 (54.5%)*	*473 (74.4%)*	*366 (74.8%)*
65+	*2747 (25.1)*	*2722 (26.6%)*	*25 (3.9%)*	*15 (3.5%)*
Address				
Local (within 5km)	*5407 (49%)*	*5023 (48.7%)*	*384 (60%)*	*288 (58.9%)*
Not Local (5 km+)	*5542 (51%)*	*5284 (51.3%)*	*258 (40%)*	*201 (41.1%)*
ATS Code				
3 or less	*5224 (52%)*	*5102 (49.5%)*	*122 (19%)*	*49(10.2%)*
4	*4175 (42%)*	*3790 (36.8%)*	*385 (60%)*	*249 (50.9%)*
5	*1250 (6%)*	*1115 (10.8%)*	*135 (21%)*	*190 (38.9%)*
Wait				
Up to 60 mins.	*1108 (10.1%)*	*959 (9.2%)*	*152(23.5%)*	*189 (38.7%)*
1-2 hrs	*2104 (19.2%)*	*1815 (17.6%)*	*289 (44.7%)*	*118 (24.1%)*
2-3 hrs	*2200 (20.1%)*	*2076 (20.1%)*	*124 (19.1%)*	*83 (17%)*
4+ hrs	*5537 (50.5%)*	*5426 (52.6%)*	*81 (12.5%)*	*99 (20.2%)*
Time of Presentation				
0000-0559	*1349 (12.3%)*	*1232 (11.9%)*	*117(18.2%)*	*87 (17.8%)*
0600-1159	*2638 (24.1%)*	*2492 (24.2%)*	*146 (22.7%)*	*106 (21.6%)*
1200-1759	*3901 (35.2%)*	*3708 (36.0%)*	*193 (30.1%)*	*140 (28.7%)*
1800-2359	*3061 (27.9%)*	*2875 (27.8%)*	*186 (28.9%)*	*156 (31.9%)*
Day of Week				
Mon	*1654 (15.1%)*	*1571 (15.2%)*	*83 (12.8%)*	*59 (12.1%)*
Tues	*1532 (13.9%)*	*1460 (14.2%)*	*72 (11.2%)*	*61 (12.5%)*
Wed	*1503 (13.7%)*	*1423 (13.8%)*	*80 (12.4%)*	*61 (12.5%)*
Thur	*1527 (13.9%)*	*1458 (14.1%)*	*69 (10.7%)*	*58 (11.9%)*
Fri	*1631 (15%)*	*1557 (15.1%)*	*74 (11.5%)*	*54 (11.0%)*
Sat	*1582 (17%)*	*1468 (14.2%)*	*114 (17.7%)*	*94 (19.2%)*
Sun	*1520 (17%)*	*1368 (13.8%)*	*152 (23.6%)*	*102 (20.9%)*
Month				
June	*2416 (22.1%)*	*2299 (22.3%)*	*117 (18.2%)*	*108 (22.1%)*
July	*2670 (24.4%)*	*2517 (24.4%)*	*153 (23.8%)*	*110 (22.5%)*
August	*2872 (26.2%)*	*2700 (26.2%)*	*172 (26.7%)*	*139 (28.4%)*
Sept	*2991 (27.3%)*	*2791 (27.1%)*	*200 (31.1%)*	*139 (28.4%)*

Waiting Times

Significant proportions of people appear to make their decision to DNW in the first two hours of presentation. However, significantly higher proportions of those DNW in the study sample (20.2%) left after waiting 4 hours or more. Tables 5 and 6 outline the frequencies of those who DNW with time as the variable measured. The highest proportion of the DNWs measured appeared to arrive between 12:00 and 14:59 hrs. People who presented to the Department after 22:00 hrs appeared to wait for longer (up to 156 minutes) than those who presented earlier in the day. People who DNW preferred to wait the least amount of time in late afternoon between the hours of 15:00 and 17:59 hours.

Table 5. - Frequency of DNW Arrival Times

Arrival Time

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0000-0259	51	10.4	10.4	10.4
	0300-0559	36	7.4	7.4	17.8
	0600-0859	32	6.5	6.5	24.3
	0900-1159	74	15.1	15.1	39.5
	1200-1459	84	17.2	17.2	56.6
	1500-1759	56	11.5	11.5	68.1
	1800-2059	76	15.5	15.5	83.6
	2100-2359	80	16.4	16.4	100.0
	Total	489	100.0	100.0	

Table 6. - Mean Waiting and Departure Times

Report

Actual Time Waited

Arrival Time	Mean	N	Std. Deviation
0000-0259	156.47	51	129.05
0300-0559	112.50	36	101.41
0600-0859	107.66	32	91.90
0900-1159	109.89	74	93.07
1200-1459	123.12	84	103.22
1500-1759	80.04	56	82.05
1800-2059	96.82	76	92.31
2100-2359	112.28	80	85.32
Total	112.01	489	98.58

DNW Age Groups and ATS Categories

Figure 7 outlines the triage categories and gender of those who did not wait. As stated earlier, a significant proportion of people appear to present to ED (n=152), register their details but leave before seeing a triage nurse. The highest proportions of non-triaged DNWs fall into 16-65 age group. More males (than females) appear to present with problems that fall in to the less urgent ATS categories (ATS 4 & 5) and then leave before medical assessment is undertaken. The same applies to those who DNW and leave prior to a triage assessment taking place. Figure 7 also shows that younger people appear more likely to attend the ED and DNW than those in the older age group category.

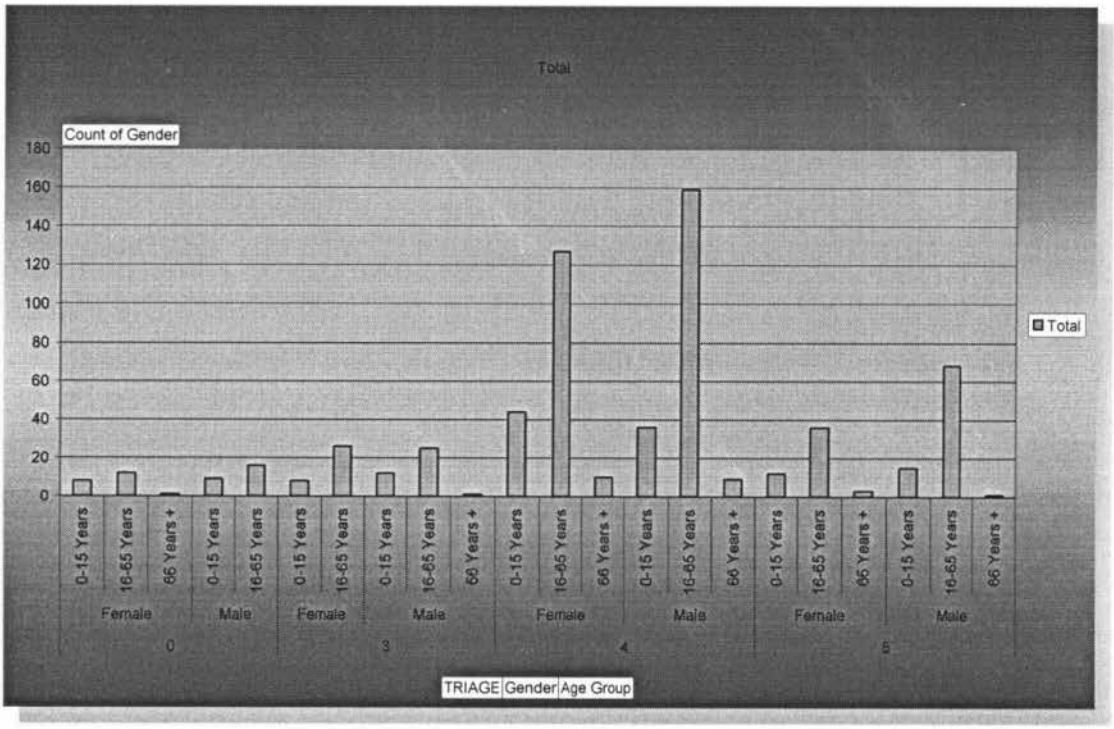


Figure 7. - AGE Groups & ATS Categories for DNW Populations

As anticipated, no people were found in ATS 1 category who DNW. Only one person in ATS category 2 took a DNW discharge. However this is demonstrated more clearly in Figure 8 using boxplot distributions.

Outliers

The box plot shown in Figure 8 nicely summarises information about the distribution of the ATS scores of those who DNW and allows for the identification of extreme scores. It supports what is already known – that that DNWs appear to occur more in the ATS Categories 3, 4 and 5.

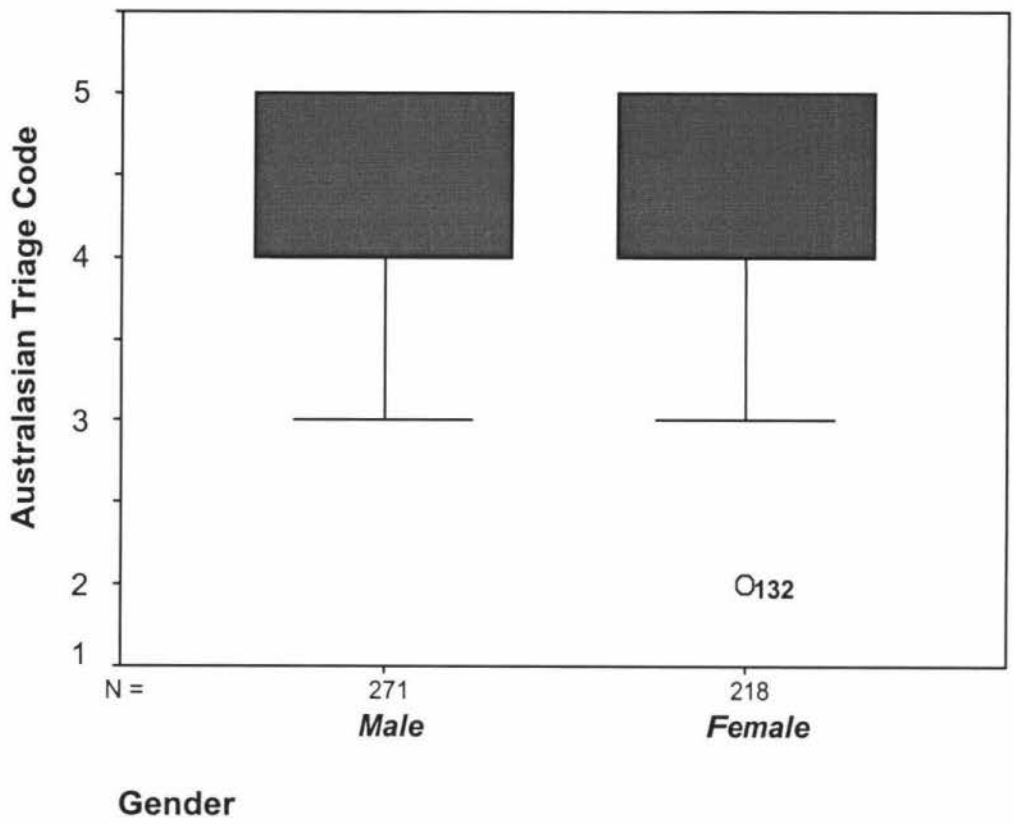


Figure 8. - Box Plots of Gender & ATS Code

However, this analysis also shows that one DNW individual in the sample had an ATS Category 2 score. This is significant as it shows that someone with a potentially severe illness had left the Department without medical assessment but had been triaged. Those assigned a triage score of ATS 2 should be seen within 10 minutes and therefore qualified for further investigation from the researcher. The researcher identified the person and undertook a trace and further assessment. This person did not respond to the survey. Her complaint was related to a mental health problem and she wanted to speak with the Mental Health Emergency Team (MHET) as she was found to be feeling anxious but not suicidal. Review of the patient documentation showed that staff made an effort to inform the MHET and, although she did not wait, she did eventually gain access to adequate and appropriate

services. It also demonstrates that people with more urgent ATS scores and who DNW may have mental health problems.

Age Variable in DNW & General ED Populations

In a normal probability plot each observed value is paired with its expected value from the normal distribution. Analysis found no significant differences between the variables measured between the DNW and general population groups. Therefore it can be demonstrated that the sample had a normal distribution as the cases fall more or less in a straight line.

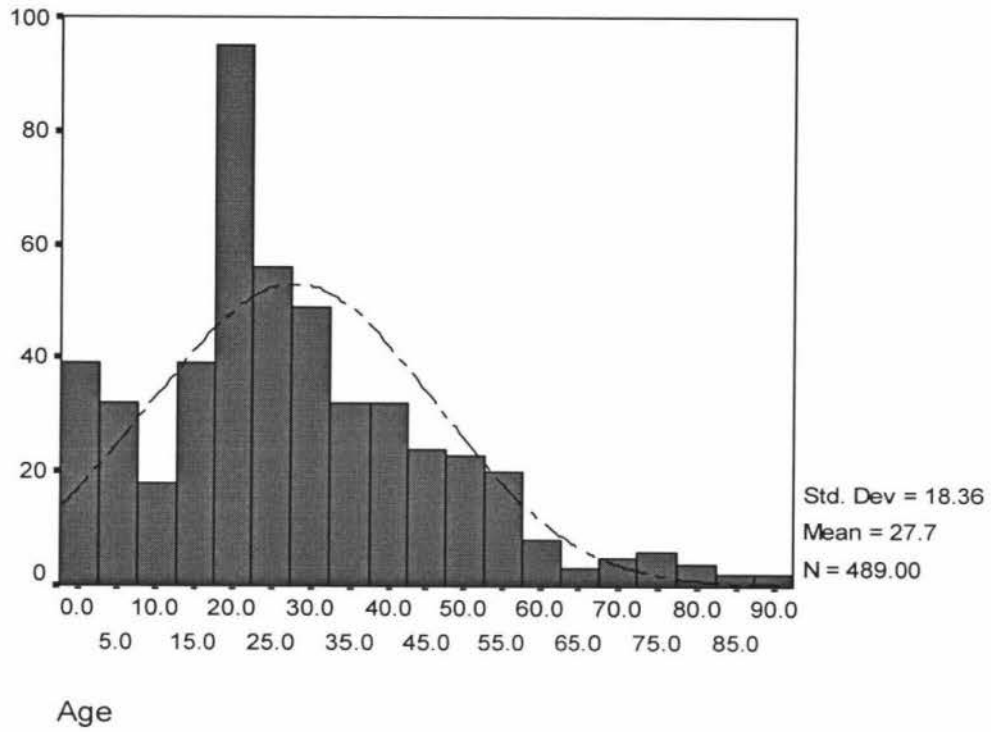
Expected Normal quartiles were calculated using Blom's proportional estimation formula and assigning the mean to ties. For variable age normal distribution parameters estimated: location = 27.689366 years with a scale =18.360095 years. Table 7. (showing confidence intervals) and Figure 9 also alludes that younger people are less willing to wait for long periods to see a doctor once they have presented to the ED. Interestingly when triangulated against wait times the older people are, the longer they are prepared to wait to see a doctor.

Table 7. – DNW Age Descriptive

DNW Age Descriptives

			Statistic	Std. Error
Age	Mean		27.69	.83
	95% Confidence Interval for Mean	Lower Bound	26.06	
		Upper Bound	29.32	
	5% Trimmed Mean		26.62	
	Median		24.00	
	Variance		337.093	
	Std. Deviation		18.36	
	Minimum		0	
	Maximum		90	
	Range		90	
	Interquartile Range		21.50	
	Skewness		.790	.110
	Kurtosis		.539	.220

Figure 9. - Histogram Demonstrating Age distribution of DNWs



Non-pararametic testing (Chi-Square testing)

Assumption testing is, according to Coakes and Steed (1999, p.197), "not as critical as for parametric methods" but a number of generic assumptions apply. These must be assured of including:

- Random sampling;
- Similar shape and variability across distributions;
- Independence of subject designs – subjects appear in only one group and are not related in any way.

In the following Tables, 8, 9 and 9a, the researcher seeks to establish if there are any significant differences in frequency between DNW patients who were (and were not) registered with a GP and who held a community services card.

Table 8. - Chi (X_2) Square Test Statistic

Test Statistics

	Do you currently hold a community services card?	General Practitioner
Chi-Square [a,b]	36.676	324.528
df	2	1
Asymp. Sig.	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 48.3.

b. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 353.5.

Table(s) 9 & 9a. – Pearsons Chi (X_2) Square Test Statistic for linear association

General Practitioner * Do you currently hold a community services card? Crosstabulation

			Do you currently hold a community services card?			
			Yes	No	No response	Total
General Practitioner	Yes	Count	63	50	11	124
		Expected Count	54.7	57.3	12.0	124.0
	No	Count	1	17	3	21
		Expected Count	9.3	9.7	2.0	21.0
Total		Count	64	67	14	145
		Expected Count	64.0	67.0	14.0	145.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.587[a]	2	.000
Likelihood Ratio	19.205	2	.000
Linear-by-Linear Association	11.271	1	.001
N of Valid Cases	145		

a. 1 cells (16.7%) have expected count less than 5. The minimum expected count is 2.03.

When interpreting the chi-square print-out, attention was paid to the Pearson statistic (short for Pearson's chi-square). In this example, Pearson has a value of 15.587 with a significance of 0.000. The significance value is well below the alpha value of .05 and thus indicates there may be significance. However, it can equally be demonstrated that the minimum expected cell frequency is 2.03, which indicates that one of the main assumptions of chi square may have been violated. Therefore, conclusions cannot be drawn about whether people who DNW are registered or not with a General Practitioner or hold community service cards. Although this is inferred, it cannot be proved at this stage or by using this statistical test.

Comparative & Correlational Statistics

When analysing the data it was found that a significant proportion of those who DNW (44%) had a community services card (CSC), therefore it was felt that further investigation into this was worth perusing (see Table 10).

Table 10. - Frequency Table for DNWs with Community Service Cards

Do you currently hold a community services card?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	40	8.2	44.0	44.0
	No	42	8.6	46.2	90.1
	No response	9	1.8	9.9	100.0
	Total	91	18.6	100.0	
Missing	System	398	81.4		
Total		489	100.0		

Correlational analysis was undertaken to identify if there was any relationship between age and those who DNW and had a CSC. According to Coakes & Steed (1999 p53), "correlational analysis has a number of underlying assumptions which include:

1. Data must be collected from related pairs.
2. Scale of measurement data needs to be interval or ratio in nature.
3. The scores within each variable should be normally distributed.
4. The relationship must be linear.
5. Homoscedasicity – how scores cluster in a uniform way about the regression line".

Pearson correlation testing was undertaken to identify if there was any relationship between the age groups of those who DNW and those who hold a community services card. To interpret the correlation coefficient, an examination of the coefficient and its associated significance value (P) must be examined.

The output in Tables 11 and 12 indicate that there is no significant positive relationship between the age groups of those who DNW and those who hold a community services card. ($r = .320$, $p \geq .05$). This is because the *p* value for a coefficient could not be computed in both 1 or 2-tailed significance values. However when one considers that most DNWs fall into the younger age groups - as shown earlier - this then offers a high suspicion that there must be some relationship between those who DNW and those who hold a CSC.

Table 11. - Pearsons Correlations Statistic

Correlations

		Age Group	Do you currently hold a community services card?
Age Group	Pearson Correlation	1.000	-.050
	Sig. (2-tailed)	.	.320
	N	489	91
Do you currently hold a community services card?	Pearson Correlation	-.050	1.000
	Sig. (2-tailed)	.320	.
	N	91	91

Table 12. – Partial Correlation Coefficients

	AGEGROUP	Q21
AGEGROUP	1.0000	-.0239
	(0)	(88)
	P= .	P= .411
Q21.	-.0239	1.0000
	(88)	(0)
	P= .411	P= .

(Coefficient / (D.F.) / 1-tailed Significance)

Outcome

From the responses generated 60% of those who DNW went to another healthcare provider after leaving the ED. Table 13 shows these frequencies. Table 14 demonstrates what investigations were undertaken on these participants and whether they were being followed up. Table 15 shows the proportions of people who required hospital follow-up and Table 16 identifies the time frames in which people were to be seen again.

Table 13. – Descriptive Statistic on DNW Outcome

Did you go else where?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	55	11.2	59.8	59.8
	No	28	5.7	30.4	90.2
	No response	9	1.8	9.8	100.0
	Total	92	18.8	100.0	
Missing	System	397	81.2		
Total		489	100.0		

Table 14. – Descriptive Statistics on DNW Outcome

Did you have any of the following?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Blood tests	5	1.0	5.6	5.6
	X Rays	14	2.9	15.7	21.3
	Specimens	2	.4	2.2	23.6
	USS/CT/MRI	2	.4	2.2	25.8
	Other	4	.8	4.5	30.3
	No Tests	14	2.9	15.7	46.1
	No response	47	9.6	52.8	98.9
	Cant remember	1	.2	1.1	100.0
	Total	89	18.2	100.0	
Missing	System	400	81.8		
Total		489	100.0		

DNW Follow-up

63% of those DNW measured did not require follow-up (see Table 15). This could possibly be used as another marker for the severity of their complaint. Of those who did require follow-up, 5.6% received an appointment within seven days of their injury/complaint with 7.6% being seen within 1 to 4 weeks (see Table 16). It is interesting to note that the majority of people who had tests performed after taking a DNW were to have radiological (X-ray) examination.

It is also important to note that there appears to be a discrepancy in the data. This can be shown when analysing the frequencies of those who were being followed up and measuring them against the time frames they were to be seen again. Table 15 indicates that 18 people responded they were going to be seen again. However when the researcher excluded those not applicable (n=22) and those who didn't respond to the question (n=53), the frequencies don't match and only 17 people could be found to be followed up. It is likely that one respondent did not answer the question even though they had indicated earlier that they were going to be seen again.

Table 15. – Follow-up of DNW responses

Are you being followd up by any hospital service?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	3.7	19.6	19.6
	No	58	11.9	63.0	82.6
	Not Applicable	2	.4	2.2	84.8
	No response	14	2.9	15.2	100.0
	Total	92	18.8	100.0	
Missing	System	397	81.2		
Total		489	100.0		

Table 16. – Timeframe for follow-up

If so in what time frame will you be seen again?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Days	5	1.0	5.4	5.4
	Weeks	7	1.4	7.6	13.0
	Months	3	.6	3.3	16.3
	Not Applicable	22	4.5	23.9	40.2
	No response	53	10.8	57.6	97.8
	Awaiting Appointment	2	.4	2.2	100.0
	Total	92	18.8	100.0	
Missing	System	397	81.2		
Total		489	100.0		

Systems Processes

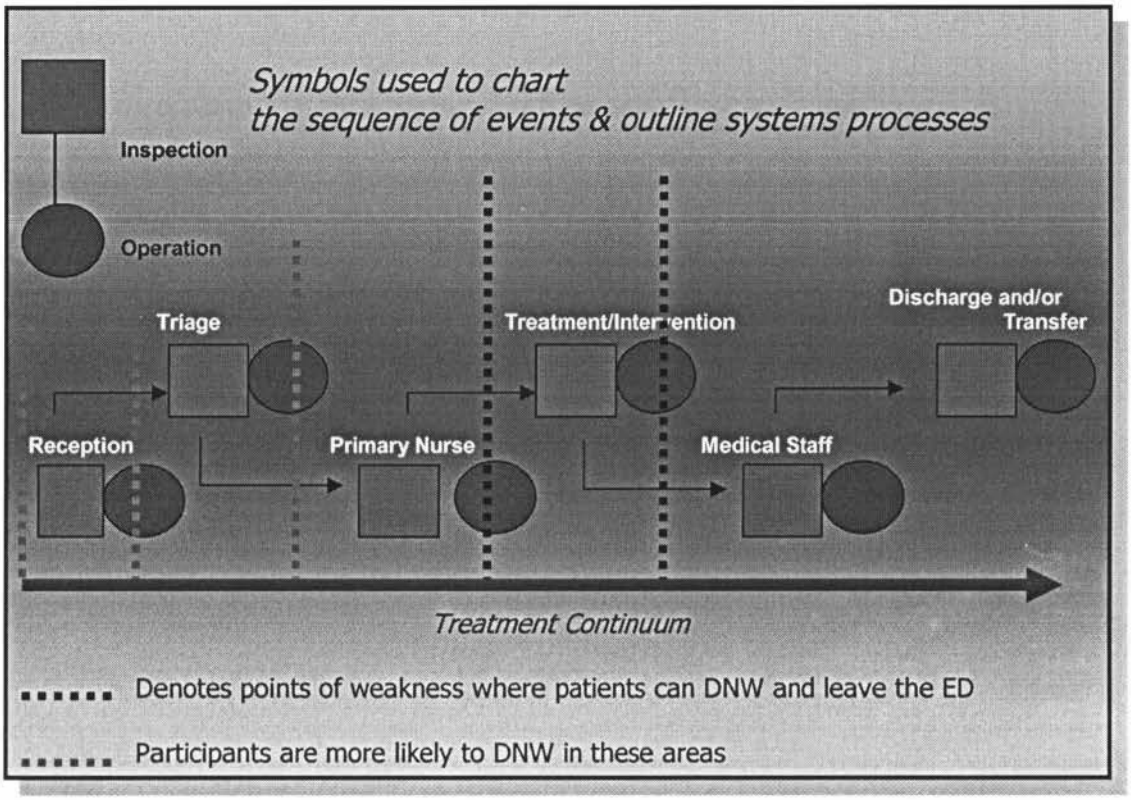
The researcher wanted to identify if there were any areas where more DNWs occurred during the treatment continuum of people who present to the ED. Constructing the flow diagram – as shown in Figure 17 – allowed the researcher to identify and demonstrate at which point on a typical ED treatment continuum people were more likely to decide to leave. To achieve this, therefore, the first task in the process is to define or outline a process chart. Hovenga (1999, p.273) describes this as a "graphic representation of the points at which materials (resources) are introduced into a process and the sequence of all operations and inspections (evaluations & points of decision-making) associated with this process using two recording symbols joined to denote a flow chart. Critical operations can then be identified". Defining symbols used to chart the sequence of processes can allow a flow chart to be constructed to describe patient flow. This permits the researcher to understand the reasons for variations between patients who DNW and how many desired outcomes might best be achieved.

Figure 10 is an example of how a process flow chart looks for patient flow in the Emergency Department used. Assessments were made by the researcher as a bystander at each inspection and operation point. If the variables were considered controllable, chi-square or t-tests were adopted to judge the significance in the data analysis. Conducting the systems analysis allowed for weaknesses, particularly in the physical layout and systems processes used in the Department. The factors that appeared to influence people who DNW related to a number of variables. Of these, the main weaknesses included:

Reception/Triage Area

- Reception staff were usually the first point of contact for patients who presented themselves to the Department when they walked in. People would routinely register their details with a receptionist before seeing a triage nurse.
- ED reception and triage nursing staff were contained behind reinforced glass for security purposes. This meant that people were required to speak loudly when communicating their details, thereby reducing the scope for privacy.
- The waiting area was isolated from main Department by security access door. This, in itself is not necessarily an issue, but staff resourcing of the Department meant that the dedicated triage nurse for each shift was required to cover two main entry points into the Department – the reception and ambulance triage areas. This regularly meant that nursing staff were often not present at the reception desk to receive people who presented themselves, as they were often attending to other patients.

Figure.10 - Flow Process of patients attending the Emergency Department



- The dedicated computers used for data entry purposes in the triage/reception area appeared to dictate the work processes and ultimately the flow of patients and how they were triaged/managed.
- The triage nurse was routinely required to take sicker patients from the waiting area through into the main Department and establish intervention until handover to the primary nurse could be performed, which again left triage unattended.
- This became intensified at night when the Triage & Shift Coordinator roles were amalgamated and undertaken by one person.
- A dedicated role of the triage nurse was to answer ambulance calls over the radio transmission system. This was often a distraction for triage staff.
- The scope of the triage role was actively being advanced during the course of the study, with the expectation that as many interventions were to take place in the waiting room wherever possible to facilitate and expedite patient treatment.

Systems Weaknesses

- Reception staff were not necessarily clearly identified as such – they did not wear uniforms and not all consistently wore name badges. This commonly led some people to think that they were speaking to a nurse

- The uniforms that the nursing staff wore were a mixture of standard issue DHB white tunics with green trousers/shorts together with blue surgical scrub often interspersed by some staff wearing blue surgical scrub tops.
- Signs explaining triage process were clearly ignored and perhaps not in obvious places
- Although triage nursing staff were experienced ED nurses, not all of them had necessarily been exposed to formalised triage training. This was being addressed within the Unit at the time of the study.
- Explanations to people of the triage process – how priority is given to the sickest/most injured – were not consistent, which left people with questions when waiting to see a doctor.
- Standing orders for certain procedures/interventions had not been formalised to allow/permit for many advanced nursing interventions to occur – such as the administration of simple oral analgesia and requisition of certain radiological examination in cases where it was clearly clinically indicated. Therefore, nursing intervention at the triage area was not always consistent, as the scope of practice of the nurses varied depending on the staff working at the time.

Figure 10 demonstrates that patients can decide to DNW at a number of different stages of their visit to an ED. Those who DNW are more likely to leave before medical staff are able to see them but after being seen by triage nurses. Chi-squared values for independence and trend returned *P* values of ≤0.01 for DNW at these stages through the ED continuum and suggest that DNW occurs more after triage has taken place. This suggests that people's decisions may be influenced by the interaction/intervention that may (or may not) have taken place at the ED reception/triage area. Further discussion about aspects of the systems weaknesses mentioned above are elaborated in Chapter Five.

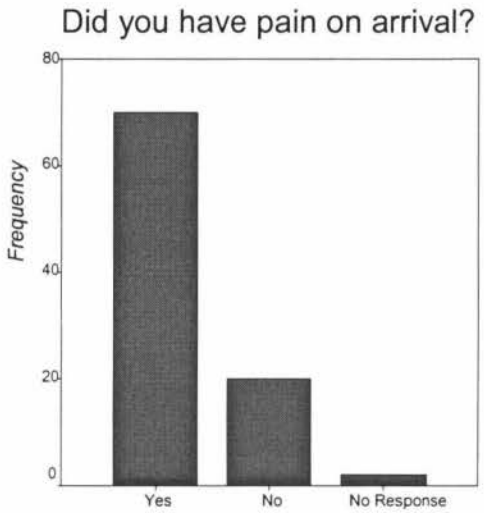
Pain

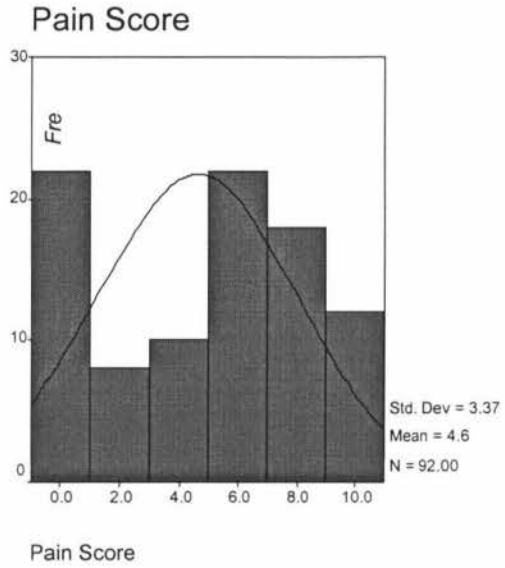
The researcher was aware that the concept of pain was something that needed to be addressed as result of the findings alluded to in Chapter 2. As pain is very much a subjective concept, the researcher focused more on what pain relief had been given/taken pre-hospital and the reasons why people hadn't taken pain relief prior to arrival. Remarkably most of the answers to the questions on pain could easily be categorised (see Figures. 11, 12 & 13) as answers were largely the same. The categories were easily identified as follows;

1. No Response – A large number of respondents did not answer the question as to why they hadn't taken any pain relief prior to attending ED even though they indicated they were sore and (in a number of cases) had been for sometime
2. Not applicable – as they had had access to pain relief either before their presentation, or en route to hospital or during their stay in the ED

3. Didn't have access to pain relief
4. Didn't require it
5. Didn't know what to take or if it was appropriate to take something
6. Didn't want to mask symptoms

As expected there was a significant amount of people who presented who had pain (65%) . The mean pain score was 5/10. Figures 11 and 12 demonstrate these statistics. Table 17 demonstrates that only 40% of people had had pain relief prior to attending the ED. Figure 20 seeks to identify the reasons why people had not taken pain relief prior to attending the ED and a staggering 37% stated that they weren't sure what to take for the pain.





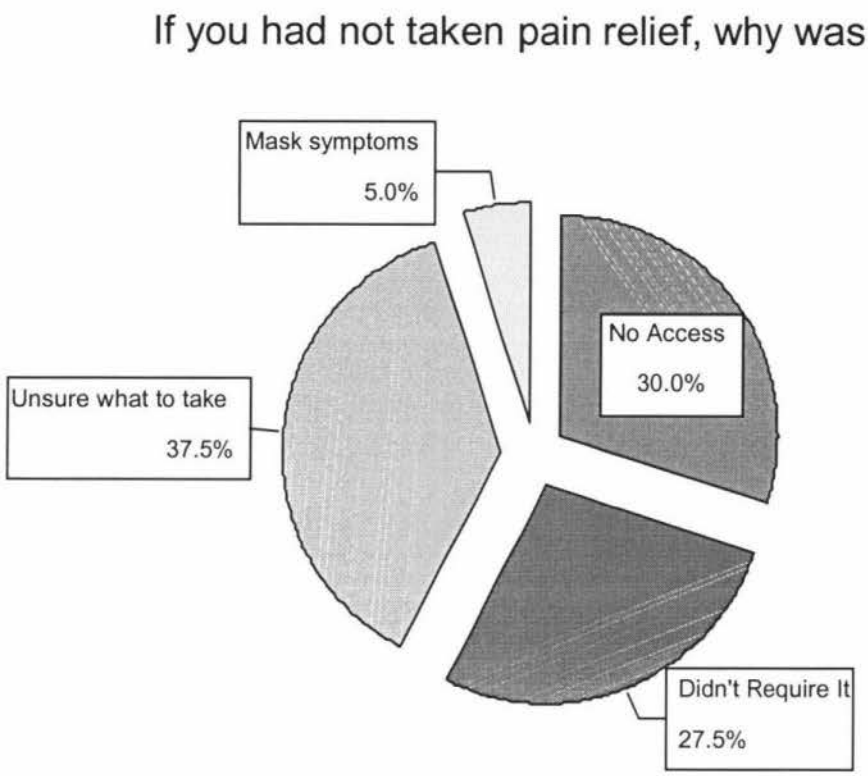
Figures. 11 & 12 - Pain Frequencies

Table. 17 – Pain Relief frequencies

Have you taken any pain relief prior to attending ED?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	37	7.6	40.2	40.2
	No	40	8.2	43.5	83.7
	No Response	15	3.1	16.3	100.0
	Total	92	18.8	100.0	
Missing	System	397	81.2		
Total		489	100.0		

Figure. 13 - Pain Pie Chart



The same number of respondents had taken pain relief as those who had not prior to attending the ED. For those who hadn't taken pain relief (43.5%), the main reason given was that they didn't know what to take. In total, 30% of patients didn't have access to pain relief prior to attending the ED. 33.4% of people indicated that they had had their pain for hours before presenting with 35% indicating that they had pain for days. 64% of respondents indicated that they experienced pain when they left the ED and 53% of those respondents indicated that they continued to experience pain despite their visit to the ED (and correspondingly their GP). Only 25% of those who responded indicated that they were offered pain relief before they left. There was significant volume of no responses to the pain questions on the surveys received.

Summary

The following summary describes the main points found from the quantitative data collected. The context in which the study was undertaken had similar characteristics to those described from overseas literature – with ED presentations increasing, in-patient admissions falling and DNW numbers consistently rising each year. The DNW population measured. accounted for 4.5% (n=489) of the ED population measured (n=10949). The survey generated a response rate of 17.8%. The mean time people waited before they decided to DNW was 112 minutes. People measured in this sample appeared to wait the least during daylight hours and would wait longer the older they were and the later it got. Interestingly, DNW occurred during periods when the Department was optimally resourced and had most staff working.

Of the respondents, 55 (60%) had visited an ED at least once before and 83 (17%) of the DNW population were not registered with a GP. No correlation was found between those who held a community services card and registration with a GP. Of the respondents, 65% indicated that they had pain on arrival at the ED and showed an equal distribution of intensity of pain experienced. Some 64% responded that they continued to have pain when they left the ED despite having had pain relief. They indicated an average moderate pain intensity score of 5/10. Of the respondents, 70% had not taken any form of pain relief before attending the ED.

Most DNW's occur between triage assessment and/or after triage/primary nurse intervention. A significant proportion of people (153) presented to the ED, but left before a triage assessment could take place. Of the respondents, 60% sought help elsewhere after leaving the ED. The largest proportion of people who sought help elsewhere (31%) went to drop-in medical centres with only 27% presenting back to their own GPs. Some 63% of people responded that they were not being followed-up by any hospital service and those that were (5%) usually fell into the orthopaedic category. Some 45% of respondents indicated that it took up to 12 hours for them to receive a satisfactory outcome for their problem, with 5% indicating that they still had not secured a satisfactory resolution of their problem.

The quantitative data generated is useful in assisting researchers to identify some unique characteristics of this DNW population as well as conceptualise some of the inherent systems processes that may influence a persons decision to DNW. However statistical analysis has limitations and does not yet adequately explain why people decided to DNW. Therefore, thematic analysis was undertaken using the open-ended responses gained. The results are outlined in the following section.

Qualitative Results

Introduction

This section outlines the data gathered from: participant responses to the open-ended survey questions; comments added by participants to the surveys and; direct email responses to the lead researcher from participants (Gribiich, 1999). The material obtained from all these sources was interpreted using content analysis. Participant's study numbers are used to ensure confidentiality and to enable the reader both to identify the participants and build up a picture of their personal experience. The nature of the themes generated from the data is elaborated further, with the description of an abstracted-interpretive conceptualisation of the themes offered in the form of a diagram to assist nurses with the operationalisation of the themes surrounding DNWs. Quantitative and qualitative responses from DNW group will be triangulated and analysed further during discussion of the results in Chapter Five.

Construction of the survey responses

Individual patterns were clustered to obtain general categories. As most responses were fairly concise, this was relatively straightforward. However, when respondents added their own comments, it took slightly longer to analyse. Transcription of the responses was undertaken by the researcher verbatim to create lists of all the corresponding answers to each question. Each question was colour-coded. Almost all data were able to be transcribed verbatim although divergence from the main theme occurred a number of times – particularly in the email responses but these were eventually not included. The categories were noted under several headings. From these categories, five themes were initially identified and included: wait; other commitments; abandonment; communication and systems processes. Quantitative data was revisited and compared with the themes generated from the qualitative data to identify if there were similarities. Written and email data were coded separately to permit data triangulation. Descriptive content analysis and interpretative content analysis were then applied to describe, interpret and understand the meanings of the data collected. Some categories identified were reduced by combining with similar categories, sometimes under broader headings, and the responses were colour-coded.

Framing of Questions

Many questions require that parameters within the question should be explicitly specified by the researcher (Foddy, 1993). This is because, without such frames of reference, participants will endeavour, according to deVaus (1999, p.363), "to produce their own question and therefore not answer the question asked". This can be shown to have occurred when analysing the open-ended responses.

For example, Question 38: "Did your safety ever feel threatened?", was framed in a particular way that implied one meaning but elicited other unexpected responses. Those respondents who indicated that their safety *did* feel threatened by waiting, explained that this was because they felt too sick to stay or that their illness required more urgent attention than they were getting. This is an interesting paradox considering their ED environment at the time. Another participant (381) stated that, "not knowing how bad the situation was" led to his decision to leave. One more (438) felt that "the cut on my hand was quite bad" – so he left. Another (*236*) noted that she was concerned about "passing out and no-one knowing".

Framing was also shown to be important in two other questions used in the survey. Respondents were asked two questions which were essentially the same: "What could have been done that would have encouraged you to stay?" and "Have you any suggestions on how this might be improved?" However, because they were framed slightly differently, they elicited different responses and this helped to build a broader understanding of their experience.

Reasons for Attending/Leaving

The framing of questions was also shown to be important in particular data that was hoped to be collected, but unfortunately never was. The participants were asked their reasons for attending the ED. The question was taken literally by respondents, even though the researcher had implied the choice between ED and alternative health care providers. It had been hoped by the researcher that respondents would give their specific reasons for choosing ED rather than using their GP when seeking help. But the survey's technique meant that the responses gained were unclear.

Participants were given a brief description of their reason for presentation on the top of their survey to remind them. Most responses collated were all regurgitations of what the researcher already knew – such as (225) "I had stomach pain" or (287) "I had been vomiting for several hours", and so on. To have been more effective, the researcher ought to have been more explicit and asked: "What made you decide to attend the Emergency Department instead your own GP?"

The main factors that lead to people choosing to leave were not surprising and related closely to those themes found in the literature. These included:

Staff communication/behaviour Responses in this category were very explicit which strongly indicated the potency of feeling that lay behind the meanings conveyed. It was an important category which the researcher, due to his role as Charge Nurse, often found difficult to analyse and remain impartial, objective and true to the quantitative paradigm. One respondent (123) wrote that the main reason for leaving was the "rudeness of staff".

Another said (152) "... would be seen sooner at City Doctors. Felt 'ENCOURAGED' to go there".

Others replied (150 & 167 respectively):

> "..if the staff had actually listened to me they would have discovered that I was not a time-waster and that my problem was in fact genuine".

> "I don't believe I was taken seriously, as the nurses seemed more interested in chatting about their weekend and a later arrival with no apparent emergency given priority over me".

Systems Processes –There appeared to be a common lack of understanding of the triage process where people are seen/assessed by a triage nurse and then seen by medical staff in order of priority. Participant 169 demonstrated this by observing:

> "Someone with no apparent injuries was taken before me".

An alarming issue concerning systems processes is demonstrated by respondents 478 and 309 who stated respectively:

> "All the receptionist did was to tell me that the cut on my foot was non-urgent and that I'd be seen quicker at City Doctors".

> "Having arrived at 2:10pm it appeared after advised by the receptionist that it was unlikely I would be seen for sometime yet...."

In fact, both these people had been seen and assessed by a triage nurse and hadn't even realised it, which suggests that communication and profile of the triage nurse may requiring highlighting.

Other commitments – A significant number of people re-assessed their level of illness/injury when it was realised they were going to have to wait to be seen. A number of people described other commitments on which they placed a higher priority. For example, (248) replied:

> "The pain went a bit + I had 2 children with me and it was getting late + I was getting stressed".

Participant (249) wrote : "I had an important meeting to attend in 2 hours".

Another respondent (319) answered: "I was catching a plane to Oz and didn't want to miss it".

Abandonment – Feelings of abandonment were common amongst those who DNW and could be demonstrated by responses such as (169, 236 & 319):

" I was waiting for four hours without anyone talking to me.

"...was then left for four hours on my own + not checked on and was told I was not urgent".

" I got fed up with waiting so long and I felt that they didn't care anyway".

Wait too long – The majority of people who responded felt that the wait time was too long to be endured and left. Common replies could be summed up by the following response (170):

"Over 3 hours and no doctor – was told it would probably be another 2 hours wait".

Unifying Themes

Careful analysis of all the sources of qualitative data related more to one of the latter aims of this study – perception of illness and factors influencing people's decisions to leave before assessment by a doctor. This revealed people's patterns of behaviour illustrated by the responses and the data collected quantitatively. These patterns coalesced around a significant unifying theme of perception of illness, action and environment.

It is important to define what is meant and understood by 'theme' in the context of this study so readers may identify the way in which it has been applied in purifying and refining the data collected. DeSantis and Ugarriza (2000) criticise the current use of themes in qualitative nursing research as ambiguous, imprecise and offering little substance when formulating strategies. They suggest that themes should make explicit the implicit meaning of the data, that they should be defining points and indicators of important issues and that they should represent important aspects of issues in people's lives. Therefore, the following interpretation of the themes generated and applied in this study meets the criteria outlined by these authors.

Perception of Illness

Respondents seemed to believe that their reasons for attending were inherently more serious than perceived by the triage nurse who had assessed them (where this occurred). They indicated that their safety (in the context of their health) was significantly at risk if they continued to stay and wait for attention in the Emergency Department and therefore indicated that this directly influenced their reason to leave (Björvell, 1991).

Poor understanding of illness was another common theme that came through from the data. For example respondent 435 wrote:

> "Headaches – blurred vision a neurological problem – surely with meningitis around quicker assessment should have been done & why tell people to return to the ED if condition reoccurs and not able to be seen – as I had been there 3 days earlier with the same condition".

The "Perception of illness" theme comes through in this response as this person's condition remains the same. The first time they were seen, they were discharged from the ED and the respondent admits that their condition is unchanged. So the question remains as to why they felt it necessary to re-present. After three days, it would be unlikely to be serious or even a life-threatening condition, and yet this person felt it necessary to re-present to the ED and not seek help from their GP. They used words such as "headaches", "neurological problem" and "meningitis" which would indicate that their reason for presenting was serious

enough to justify re-presentation, to themselves at least. This theme is also supported in the literature (Bartley & Cameron, 2000 p123) which finds that, among certain groups of patients, "fear of a dangerous or life-threatening condition not borne out in the doctor's assessment is common".

Action

Perception of illness appeared to relate directly to the emerging theme of "Action" which came through strongly as a reason why respondents felt that their safety was at risk. Where "Action" did not appear to be happening from the ED staff, the respondents felt obliged to take their own form of action and left the Department before medical assessment could took place. It is interesting to note that the interactions and information given to these patients (where they occurred), did not appear to be perceived by most of the respondents as a suitable form of action. This is demonstrated in the response (478): "All the receptionist did was to tell me that the cut on my foot was non-urgent and that I'd be seen quicker at City Doctors".

Expectation.

Both of the above themes – "Perception of illness" and "Action" – appeared to relate strongly to the concept of *expectation* about the level of service respondents anticipated they would receive when they injured themselves or had illness. There appears to be an expectation that when injury/illness occurs, any or indeed all corresponding intervention – in terms of immediacy and type of intervention – should be equal to the level of injury/illness perceived by those seeking the assistance, and not necessarily based on the clinical judgements of the health professional trained to treat and manage such injuries or illness. Participants indicated from their responses that they expected to see a doctor, at least as a minimum. Most indicated that they felt their injury/illness was inherently more serious than a nurse could deal with and that they ought to have been seen by a doctor.

The other expectation that came through from the data was that the respondent's only responsibility was to turn up at the ED – the rest was the job of the ED staff. This can be demonstrated in the following response (381):

> "I mean, I know they were busy but I'd hurt my hand and I thought that's what Emergency Departments were for, 'EMERGENCIES' ".

Another theme that came through may be shown as the alternative way respondents think about the ED. For example, respondent 439 answered that "there should be a GP for minor ailments at such times [during the night] especially when family GPs need not be disturbed". This indicates that people knowingly attend the ED with minor ailments and may feel

reluctant to contact their GP with minor ailments, even if they were available during the night.

Environment

Where illness was not perceived by the respondents as the primary catalyst for their reason for leaving, participants did not usually respond to the question. However, a number of parents responded on their child's attendance, with one replying (364) that: "3 months is too young to sit with other ill people".

One female respondent answered that she was, "getting hassled from two drunken people waiting to see a Dr as well".

These latter responses were the type the researcher had expected the majority of these answers to be like and related directly to environment.

Participant (146) made comment on the physical environment of the ED stating that the "toy area was rather dirty with bits of food lying around and had a broken gate". Environment only occasionally came up as the direct reason for patients' decision to leave on safety grounds but was mentioned significantly enough to have its own theme emerge.

Linking of Concepts

Two concepts presented within the one question were sometimes regarded as mutually exclusive by certain respondents – i.e. expectation and environment. For example, (participant 322) replied: '....because I have had a chest pain and did not know what to do".

To this participant, chest pain appeared to be the marker for perceived severity of illness. To know that chest pain is largely considered serious and treated as such in most Emergency Departments, this person might have attended an ED with similar symptoms before (which he had). Or he might have had some previous experience of chest pain to be aware that action ought to be taken as a result of this pain. This person used his lack of "knowing what to do" as his reason for doing something about the pain – and left (action). This person might also have been seeking retrospectively to justify the reasons for attending and then leaving.

The linking of concepts by respondents occurred regularly. The emerging themes regularly linked by participants can be demonstrated when they were asked directly about their reasons for leaving. The themes of "Environment" and "Systems Process" were linked a number of times. For example, participant 169 replied: ".....the waiting room was empty and someone with no apparent injuries was taken before me".

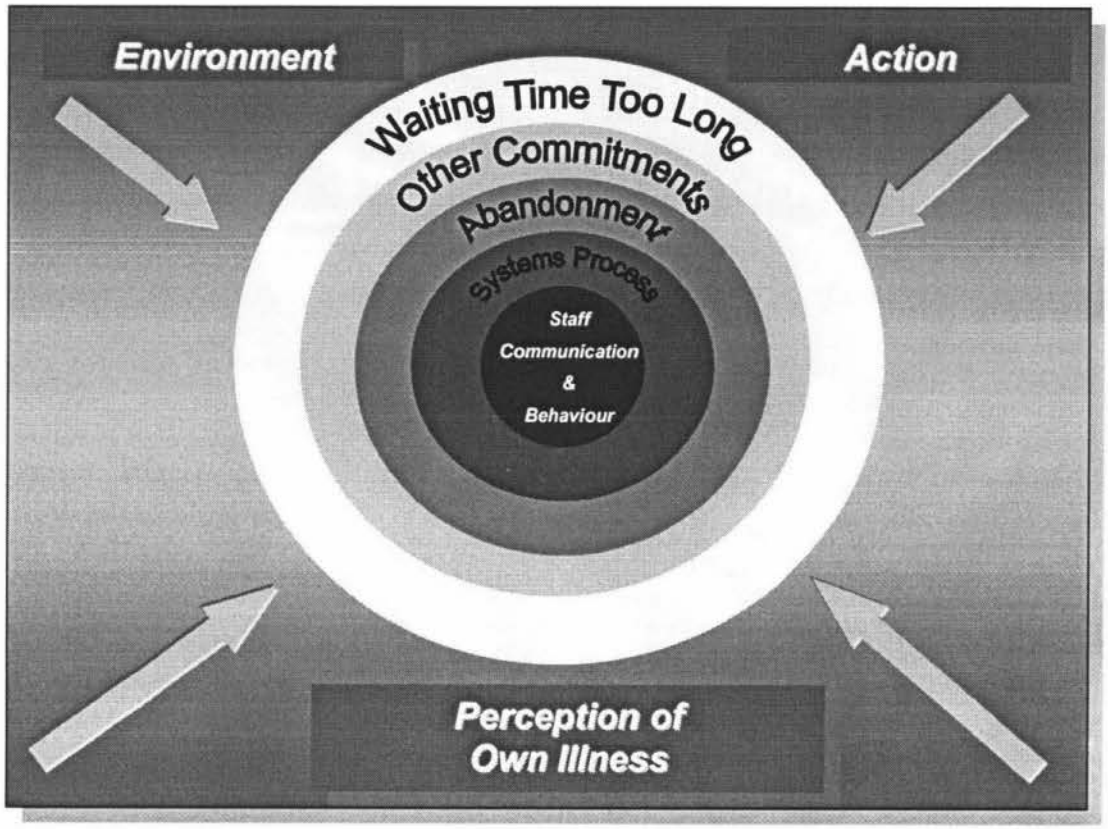
This answer implies a number of meanings. Firstly, it demonstrates that people may be expecting to come to the ED to find it busy. This can be explained by participant 169 using the waiting room being empty as an indicator of Department activity. Because they found the waiting room empty, it was difficult for this person to comprehend why they had to wait so long. Clearly, this person had no clear understanding of the triage process. If they had, they would have understood why people are taken as a priority. Also, they used the words "no apparent injuries" which indicates that this person might have felt that the ED was a place attended only by people with physical injuries. In fact, ED remains one of the few interfaces between primary and secondary care services (Richardson, 2001). It is the front-door to the hospital and is an environment where GPs send people for acute review by specialist medical/surgical teams – one particular reason for access block and bottle-necking. The patient that was seen ahead of participant 169 might have been a direct referral from a GP to a specialist doctor who was available to see their patient at that time. It also shows that people do not perceive the waiting room as a germane treatment area.

Other concepts regularly linked together were "waiting-time" and "staff behaviour/ communication". This can be demonstrated by the response of participant 152: 'Nursing staff advised there would be a wait for first one, then two hours and would be seen sooner at City Doctors. Felt 'encouraged' to go there".

Concentricity of Themes

It can be demonstrated from analysis of the data collected – particularly from the open-ended and email responses – that the themes drawn from the data all appear to have a common locus or epicentre. Harris (1999, p.73) suggests that, "conceptualisation is concerned with developing an agreed definition of essentially subjective concepts and operationalisation is concerned with working out how to measure the concepts once they have been defined". Conceptualisation of themes is thought to be useful for constructing ideas (Walker & Avant, 1988) when undertaking concept analysis. To conceptualise and assist with the operationalisation of the themes generated from this study, an abstracted interpretation has been constructed to show the intussusceptions of the themes generated (Figure 14). If one was to take a stone and throw it into a pond, the point at which the stone enters the water might be considered as the starting point of the concentric rings that ensue from the rippling-effect of the water. After a short time, once the water has settled, it becomes harder to identify a true starting point and the outer rings become easier to identify than the centre.

Figure. 14 - Conceptual Model depicting the Concentricity of Themes



If this concept is applied to the themes that have been constructed from the data collected on people who DNW, then some simple conclusions can be drawn. For example, when one examines DNW, it is easy to draw the conclusion that DNW's occur as a result of increased waiting time. Certainly, this was a common category extracted from the data. However, waiting time is not necessarily the locus or epicentre – i.e. the common feature for all people who decide to DNW. But, because it is the easiest ring to identify, it may be more easily assumed and accepted as the most rational explanation for the occurrence of DNW. Another reason why waiting time might be more easily identifiable as a reason for DNW's occurring is that people present to ED's with their own expectations of service and environment, their own perceptions about the seriousness of their illness/injuries and their own perception of likely action. These all appear directly to influence the ripple-effect or concentricity of the reasons people DNW. These latter themes act as a kind of buffer, allowing waiting time to be more easily observed but do not explain or describe commonalities that exist within this DNW population.

This was demonstrated when participants explained their decision to leave. Participants spontaneously sought to justify their own actions and gave unintentional and unsolicited insight into the real reasons for choosing to DNW. Although waiting time was found to be the most frequent answer provided, it was not the common thread that held their reasons

together. The locus or epicentre for DNW extracted from the data appeared always to relate back to "staff communication/behaviour". This was strongly implied from the data analysed as the common strand that interlinked the categories or ensuing ripples of information. "Systems processes" of this unit appeared to have similarly strong influences on people's decisions to leave and it was difficult for the researcher to decide whether this might actually have been at the locus or epicentre instead. However, as shown earlier, the reasons people DNW were not necessarily mutually exclusive and both could be considered an equally strong locus of events. As the ripples move outwards, the rings become easier to identify, with "feelings of abandonment", "other commitments" and "waiting time" each becoming easier to identify from the data as reasons for people deciding to DNW.

Summary

A wealth of qualitative material was obtained from the open-ended questioning, framing techniques, email responses and written comments received. This Chapter has outlined the main themes and categories generated from the qualitative techniques employed and discussed in detail in Chapter Three. These included "wait time too long", "other commitments", "feelings of abandonment", "systems processes" and "staff communication/behaviour". Often concepts/categories were regarded as mutually exclusive to most respondents and therefore a natural linking of these categories occurred. From these, the main themes such as "expectation", "action" and "environment" were then developed from content analysis. The nature of the themes generated from the data was elaborated further with the presentation of an abstracted-interpretation or conceptualisation of the themes to assist triage nurses in grasping the important themes surrounding DNWs. The locus or epicentre for DNW extracted from the data related strongly to "staff communication/behaviour" and was strongly implied from the data analysed as one of the common strands that interlinked the categories or ensuing ripples of information. It suggests that nurses must be conscious that behaviour modification, communication technique and how they interact will generally impact on someone's decision to leave.

Conclusion

Chapter Four describes the results generated from the surveys received. Demographic data was calculated using the total number of DNWs (n=646) that occurred during the study. Statistical testing was undertaken using the population measured (n=489). The chapter was split into two separate sections. The first section looked at the statistical data generated and the following section dealt with the qualitative aspects of the data collected.

Undertaking quantitative analysis allowed for trends to be constructed. This permitted the researcher to create a picture of the type of patients DNWs appear to be. DNWs appear to occur in all age groups. More males, aged between 20-30 years old who lived locally appeared more likely to DNW. Proportionately, DNW's appear to occur between midday and 6pm and at the weekend (between Friday night and Sunday morning). DNW's are presenting with a variety of problems and fall into the less urgent triage categories of 4 and 5. However a significant proportion (25%) of DNW's will leave prior to a triage assessment. People who DNW - with more urgent triage scores - may present with mental health emergencies. There is a suggestion that those who DNW may fall into lower socio-economic groups - as a high proportion held community service cards (CSC's). No positive relationship could found between those who had CSC's and whether they were registered with a GP. Those who DNW appear to present and leave ED with significant pain problems. Those who DNW appear likely to seek help from an alternative health care provider after they leave the ED. People who DNW appear more likely to leave once they have been assessed by a triage nurse although significant numbers of DNWs (24%) were reported to occur before a triage assessment.

Qualitative analysis allowed for the meaning of DNW to be further investigated. Five main themes were identified that sought to explain the reasons for DNW. Staff communication and systems processes appeared to be the main factors that influenced a person's decision to take a DNW discharge. Therefore, it can be shown that nurses may be negatively influencing DNW presentations. Conversely, nurses may be influencing DNW's positively by advising/offering people alternatives or choices – although, this was perceived negatively by some respondents. Despite this, there was no negative outcome in terms of risk to personal health. A number of similarities were found from the data that are supported in the literature found. The themes generated from both quantitative and qualitative data will now be further analysed, triangulated and discussed to place the context of the results in a broader theoretical context in Chapter Five.

Chapter Five

Discussion

Introduction

This Chapter seeks to synthesise, integrate and triangulate the quantitative and qualitative findings presented in Chapter Four. Initially, the theoretical context for the study is re-examined. Thereafter, the discussion is organised into separate sections corresponding to the formal aims of this research. This includes identifying a useful definition of DNW; identifying outcomes for those who took a DNW and commonalities or themes for those who DNW; and exploring the nature of presenting complaints. Where relevant, existing and other literature are referred to throughout and are used further to illuminate and explain the results found, helping to place them within the setting of current research (Foster, 1997).

Knafyl and Breitmayer (1991, p. 228) suggest that triangulation is not just "the simple combination of data" but is rather more "the proliferation of different kinds of methods" which should be undertaken in an attempt to relate and counteract any threats to internal validity from the strengths and weaknesses of the instruments and techniques employed in research. Particular attention is therefore paid to the inherent strengths and weaknesses of the instruments (survey) and tools (SPSS and MS Excel PC software programs) used to collect and analyse (thematic analysis) the data and their consequent effects on the research results. The Chapter begins by revisiting the context for this study – the goal of defining a DNW population and its inherent importance and relevance to emergency care delivery today. A discussion is offered about the importance and impact of the context in which the study took place. The sample measured is further discussed and its relevance to existing knowledge about DNW is discussed. Further analysis of the systems process that may have impacted on the results is considered.

Operationalisation of Concepts

Measurement involves the conversion of theoretical ideas into specific procedures. This conversion of ideas into succinct statements on the variables to be measured is known as operationalisation (Greenwood, 1999). The quality of the operational definition used for DNW – those designated a DNW discharge code – was useful in determining a purposive sample quickly from the larger ED sample. Conversely, however, this could be considered too narrow as the potential pool of participants might have been widened to include those who were assigned a self-discharge code also.

Defining DNW

People's reasons for leaving ED before medical assessment are nebulous in nature and appear to be influenced by a multitude of factors. Despite this, some commonalities were shared between those who responded to the survey.

To describe adequately why people DNW, it was necessary to explain what a DNW population was defined as and describe the sample being analysed. The DNW population in this study was defined as people who present to Emergency Departments, get seen and assessed by a triage nurse and then leave before they see a doctor. It can be shown from the quantitative data collected, however, that there remains a significant proportion of people (n=155 in this sample) who present to Emergency Departments and DNW before they are even seen by a triage nurse. This accounted for a total patient population of 1.4% that this ED was unable to account for or treat - despite patients presenting themselves for treatment. Unfortunately data could not be collected from this important group. This was because not enough data existed to be able to apply and test participants' ED case notes retrospectively for the exclusion criteria (see p. 51). Therefore, for ethical reasons, these people were all excluded from the study. This example strongly indicates that a population of potentially unwell people may still continue to be missed and that this requires further study. They may require re-definition as a separate, unspecified group of DNW's and until more is known about this population or is more fully researched. It cannot be concluded that these particular DNW's fall into the less-urgent ATS categories.

The DNW discharge code understood by staff may have been misinterpreted. For patients to be discharged from the Department and taken off the computer system, a discharge code needed to be inputted by staff. This was how the sample of DNW patients was initially identified and selected. However, it cannot be shown from the research undertaken that staff responsible for discharging patients were all using discharge codes appropriately and that their understanding was the same. For example, some patients discharged as DNW may actually have been discharged more appropriately under another code, such as self discharge (SD) and vice versa. To ensure the validity and reliability of data collected is more truly reflective, it is vital that these groups are measured routinely and compared, where possible, rather than by special data collection. This is because separate data collection is never complete. Also, the process of data collection alerts people to the measurement being taken and researchers therefore can often succumb to the well-recognised Hawthorne Effect[4]. However, this study attempts to overcome this by ensuring that the aims of the research project are embroidered into the fabric of routine service delivery from the start. As a new service, people will not only be aware of the observations being made but will also

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4 ***Hawthorne Effect*** – *"Work being studied is unlikely to be representative of the norm as a result of change in work practices known to be common while workers are being observed."* (Hovegna 1999, p. 287).

get used to the data collection process and assume it is part of the work process while definitions become better understood by staff.

The differences in meaning and understanding between self discharge and DNW continue to remain elusive. This study sample did not include those people who decided to self-discharge. The reasons for this included:

- the presumption that people who self discharged had had some form of meaningful interaction with ED staff before leaving – which DNW patients may often not have had. Therefore, from a medico-legal perspective, it could be argued that the responsibility transfers back to the individual because the risks involved in leaving before medical assessment had presumably been outlined to people before they left.

- the assumption by the researcher that the reasons for self-discharge were along similar lines to those outlined by the DNW sample group,. This cannot be affirmed, however, and is therefore a threat to the validity of the results.

DNW Context

The context in which DNW's occurred in this study appeared similar to those mentioned in other studies (O'Connell, 2003a; Fernandes et al, 1997; Baur, 2004). For example, results appeared to demonstrate an increasing incidence of DNW presentations set amongst a familiar backdrop of increased demand for ED services, escalating waiting times for those with less urgent complaints – i.e. those assessed and placed in ATS categories 4 & 5; and a culture of reduced overall acute in-patient admissions. Figure 1 (see p.12) demonstrates that, similarly to overseas, presentations to ED appear to be increasing against a diminishing number of in-patient admissions. Appendix A and B support this further by demonstrating consistent increases in departmental activity and indicating where those increases occur over a twenty four hour period. These data validate O'Connell's (2003) assertions that DNW's appear to be increasing in frequency in a New Zealand context and they demonstrate the ATS categories of those who DNW. This also lends support to the findings of Dent et al, (2003) that the heaviest users of an ED may not be appropriate for general practice, as it appears that the highest proportion of DNWs fall into the ATS Categories 3, 4 and 5. Responses indicated that most injuries/illnesses of the DNW population had been endured for a period greater than 12 hours and that intervention had not been sought from their GP (where they were registered with one) prior to attending. The reasons for seeking help from ED instead of their GP were unable to be measured adequately. Although, this would have proved useful in providing the researcher with clearer insight into the factors that made them decide to attend the ED in the first place. This is an area that needs further illumination from research.

The total DNW population accounted for 5.9% (n = 646) of the total population measured (n = 10949). This is a small sample and may not be generalisable due to Poison distributions – the most common within health (see Chapter Six). The annual presentation rate for the department (for the year in which the study took place) was 30,650. The DNW sample analysed (n=489) accounted for only 34% of the total annual DNW population (n = 1432). The annual presentation rate, of those who DNW, reflected a steady 15-20% increase in the overall DNW population over the last four years. It showed that the initial estimates for the likely annual sample size were incorrect.

DNW Sample Measured

The data collected in this study has produced many significant similarities with the example mentioned at the beginning about the tragic case of the young women who DNW and later died. Typically, the DNW population consisted of younger people, living within 5-10 km of the ED with injuries/illnesses most commonly relating to chest/respiratory problems; extremity pain and/or abdominal complaints. The data obtained, demonstrated from the variables measured, that there were no significant differences between DNW populations and the general ED population. Their characteristics corresponded to patients who were male; young (aged between 18-27 years) who accessed the ED during daylight hours and with less urgent problems not requiring long stays in, or even admission to, hospital. This increased at the weekend. Older people were more likely to wait for longer periods of time before leaving. These results are similar to those from other retrospective studies in which urgency and age was determined (Afilalo et al, 2004; Fernandes et al, 1997; Liao et al, 2002; Phillips et al, 2003). The challenge from these results is that it makes it more difficult – particularly for triage nurses – to predict which characteristics are likely to lead people to decide to DNW. There is a suggestion (although it is statistically weak in this study) that people presenting in the more urgent ATS categories may be presenting with Mental Health emergencies. With the introduction and national dissemination of triage education programmes (CENNZ 2004), it is likely that using the ATS code as a marker of illness severity may more readily allow for the identification of mental health emergencies. ED staff who become more attuned to using the skills gained from this triage tool need to be aware that there is a suggestion that those who DNW present may also have mental health problems - particularly those assigned categories 2 and 3 (Barr, Leitner & Thomas, 2004).

A significant proportion (40%) of the DNW population travelled more than 40km to the ED. This was not surprising when considering the geographical responsibility of the DHB. Regionalisation of care has massive implications for both users and providers of primary care services and may ultimately demonstrate a direct impact on a person's reason for attending an ED as opposed to their own GP (Ardagh & Richardson 2004; Hurley, Freund & Taylor, 1989a). With such diverse demographic proliferation inherent to New Zealand society, this will likely be inevitable.

No positive correlation could be made between those who DNW and their registration with a GP. Only 30% of patients who DNW were not registered with a GP. Access to care described in the literature (Richardson & Hwang, 2001; Malone, 1995; Davies, 1986; Grumbach et al, 1993; Hurley et al, 1989a;) suggests that people who access ED may fall into lower socio-economic groups and do not have regular access to primary care services. This was not supported in the data collected in this study. The only marker in the data collection tool for socio-economic status was the possession of a community services card. Moreover, ability to pay is believed to be an important access barrier to primary care, but this may be over-estimated as 44% (n=46) of those who responded possessed a community services card. Some commentators have observed that having such things as community services or even private insurance is (Pollock, 2001 p 1017), "no guarantee that people who need these services will necessarily get them". Data collected supported the concept that those who DNW were likely to seek (and receive) treatment after leaving the ED. This was shown with 60% of respondents indicating that they did indeed seek help elsewhere after leaving the ED and received definitive intervention within 12-24 hours of leaving.

The average time waited before people decided to leave was 112 minutes and occurred in the highest proportion between the hours of midday and 3 pm and correlated directly with increased department activity. This is significant when triangulated against data collected from content analysis. The theme of "action" drawn from qualitative analysis suggests that many people may leave the ED as they still have an element of choice open to them – in terms of alternative healthcare providers – at that time of day. Prior studies support this notion (Afililalo et al, 2004 p.1307), emphasising that: "ED is unique in its singular accessibility and full range of medical services" which is why the ED may be people's first choice as opposed to their own GP (Richardson & Hwang, 2001). However, when the ED was unable to provide the service people sought, in the time frame they expected/demanded, they elected to move onto the next available service. This might explain why fewer DNWs occur after the hours of 10pm, as there are no after-hours services available in this particular region, except those provided by the ED after 10pm.

DNW rates correlated directly with increased Department activity at the time the study was conducted and this suggests that increased DNW rates may relate to when Department capacity is exceeded (Quinn, et al, 2003; McMullen & Vesser, 2003). This study was undertaken during winter months which have historically been shown to produce consistently higher peak activity rates and where Department capacity was regularly exceeded – particularly between the hours of 12-3pm. Seasonal variance testing was inconclusive due to the lack of certain data variables on DNW populations and general ED populations from previous years. However, as winter progressed and presentations increased, so too did the DNW rate and there was no conclusive evidence to suggest that

this was remarkable for the time this study was undertaken. People were more likely to wait for longer after business hours (after 8pm). This, too, was not surprising due to the availability of limited after-hours services available in the region where the study was conducted. Other variables included availability of child care, no work commitments at that time of night to give a few examples. When asked if they were satisfied with the treatment they received, most participants responded that it was mostly unsatisfactory that they had to wait as long as they had (i.e. an average of 112 minutes).

Of the 60% of respondents who did seek help elsewhere, the majority of them did not require to be followed up by any hospital service. This lends weight to the theory that DNWs may be non-urgent and that taking a DNW does not necessarily have an impact on personal health or society, in terms of cost. There were isolated cases that ran contrary to this notion, however. One participant replied that he was completing his survey as an in-patient. After leaving the ED he went to his GP who investigated him for deep venous thrombosis which proved to be positive and so he was admitted with a high risk of pulmonary embolism. He was admitted directly and treatment was commenced. However, the aforementioned refers only to patients who are registered with a GP or who have access to a source of primary care provision. Unregistered patients who were not followed up outside the ED could not be expected to seek care with a GP or other primary health provider they did not have.

Systems Processes

There is suggestion from the literature that rapid process redesign is a fundamental prerequisite for improving waiting times and raising patient satisfaction (Spaite et al, 2002). Conducting the systems analysis and outlining the sequence of processes helped to identify weaknesses, particularly in the physical layout and systems processes used in the Department. These, might be considered as confounding factors that could impact on the validity of the results if they were to be generalised. However, as this is an exploratory study, they are considered relevant. The factors that appeared to influence people who DNW related to a number of physical, process and resource variables. Of these, the main weaknesses included:

Model of Care

The model of nursing utilised within the Department appeared to be an augmentation and combination of the nursing process first described by Roper, Logan and Tierney (1983 & 1985) with its inherent phases involving assessment, nursing diagnosis, expected outcomes, planning, implementation and evaluation. This was intertwined with elements of the Mead model for nursing (McClune & Franklin, 1987 & 1994); medical model (Aggleton, 1990) and elements of trauma and emergency management outlined by American Emergency Nurses Association (ANA, 1998; ENA, 1999). Nurses could be shown to observe measure and apply relevance to what they saw, and then act upon this. However, there is criticism of this approach. Stevens-Barnum (1994, p.40), calls this the "body shop

image" and feels this type of approach perpetuates the notion that most problems are solvable if anticipated, and indicates that this may not be a truly holistic in approach – if nurses accept the meaning of *holism* to include aspects such as physical, social, emotional, sexual, spiritual and religious. No inherent testing of the model of care utilised in the Department was applied but this might have proved useful if the horizons of systems process analysis were broadened and extended. This is significant for future research. A comparative study might incorporate data on triage nurses, their proficiency level, experience and professional knowledge (competency).

The data created from the information collected on pain remains unclear. It appears that pain remains synonymous with those who present to EDs. The data suggests that pain may not be adequately managed as many indicated that they continued to have pain when they left. Faster access to pain relief may have implications for the systems processes used in the Department studied. It appears that some people got access to pain relief quicker than others and it's not clear why.

Setting

The study was undertaken in an ED which was not - at the time - an accredited Australasian College of Emergency Medicine (ACEM) teaching facility. Two medical consultants and one senior medical officer comprised the extent of senior medical team. Access to a trauma team and to medical registrars was by referral. The nursing infrastructure consisted of 25 resourced whole-time equivalent RN's (which surmounted to 42 nurses), 1 full-time charge nurse, 2 whole-time equivalent associate charge nurses and 1 full-time clinical educator. This meant there were limitations in senior medical and nursing cover circulating within the Department around the clock. Although the department had no nurse practitioners or emergency registrar training, elements of the advanced nursing role were actively being promoted and undertaken, albeit informally (possibly another confounding factor). The scope of the triage role was actively being advanced during the course of the study with the expectation that as many interventions were to take place in the waiting room wherever possible to facilitate and expedite treatment and discharge. Although not measured, the data suggests that this model of care may have impacted indirectly on those who DNW and is also suggested in the literature (Byrne, Richardson & Brunsdon, 2000). This could also impact on the internal validity of results as measurement was being undertaken during a significant period of change. There was only a dedicated Triage nurse between the hours of 0700-23:00. At night the Triage Nurse role was augmented with the Shift Coordinator role

Having reception staff as the first point of contact for patients who presented themselves to the Department is a practice not endorsed by ACEM (or by the research findings presented in this study). Their policy states (ACEM 2005, p.1) that: "patients should be met on arrival by a suitably trained registered nurse". Physical barriers, such as ED reception and triage

nursing staff contained behind reinforced security glass, meant that people were required to speak loudly when communicating their details thereby reducing the scope for privacy and reducing the ability for nursing staff to communicate and perform assessments adequately (Tran, Schutte, Meulleman & Wadman, 2002). The waiting area was isolated from the main Department by a security access door which, in itself, is not necessarily an issue. However, staff resourcing of the department meant that the dedicated triage nurse for each shift was required to cover two main entry points into the department – reception and the ambulance triage area. This therefore impacted on their ability to communicate and check on patients in the waiting room. The communication of wait times in an acceptable time-frame to people often proved difficult. More importantly, however, it regularly meant that nursing staff were often not present at the reception/triage desk to receive people who presented themselves because they were often attending to other patients entering the Department.

The dedicated information technology used for data collection purposes in the triage/reception area for the registration of patients details appeared to impact significantly on patient flow. It could be argued that this often dictated some poor work processes and impacted how people were triaged/managed. The IT software used (PIMS/Homer) might be considered very old (when compared to today's standards) with significant limitations in its capabilities and user-friendliness. The triage nurse was routinely required to take sicker patients from the waiting area through into the main Department and establish critical intervention until handover to the primary nurse could be performed. This again left the triage area unattended. This became accentuated at night when the Triage & Shift Coordinator roles were amalgamated and undertaken by one person. It also impacted on the accurate inputting of times that people were seen and assessed. This process demonstrates that ED resources need to be suitably supported (resourced) in order to maintain a 24-hour presence at triage.

Reception staff were not necessarily clearly identified as such i.e. they did not wear uniforms and not all consistently wore name badges that identified their role. They did not consistently identify who they were unless circumstances dictated. This led to a common misconception, by some people who eventually DNW, they were speaking to a nurse. The uniforms that the nursing staff wore were a mixture of standard issue DHB white tunics with green trousers/shorts together with blue surgical scrubs. Doctors in the department also wore a combination of civilian dress and surgical scrub tops. From the concentricity of themes generated from qualitative data analysis (see Figure 14), it can be shown that patients arrive at EDs with their own perceptions and expectations of what will happen to them (Holden & Smart, 1999; Nyström, Dahlberg & Carlsson, 2003; Nystörm, Nydén & Petersson, 2003). Similarly, it might also be considered that people appear to have preconceptions about how staff will look. Due to the current popularity of certain drama and documentary television programmes which outline the nature of Emergency Department

work, such as *ER* and *Nurse's* for example, it is conceivable that staff attire might increase people's confusion. Interestingly, this particular hospital is one of the few left in the country that still insists on its staff wearing the traditional white tunics and the data collected strongly suggested this as a possible factor influencing people to DNW. This is important as it has been stated that the public have a perception of emergency services (and this includes the way they look) which is influenced heavily by the media.

Signs explaining triage process were clearly ignored by people and were not perhaps in the most obvious places. Explanations to people about how the triage process gives priority given to the sickest/most injured were not consistent from staff. This left people with questions when they were waiting to see a doctor. Although triage nursing staff were experienced ED nurses, not all of them had necessarily been exposed to formalised triage training, but this was being addressed within the unit at the time of the study.

The theme of "action" is further supported by data showing that the highest proportion of DNWs appeared to occur during peak rates of department activity – when the department was resourced best in terms of staffing and facilities available such as radiology and clerical support. This fits with Deming's concept of improving quality continuously and forever (Walton, 1986) and that the more services provided, the greater the increase in expectation (and therefore demand). This may also seek to answer why DNW populations remain buffered when balanced/measured against general ED populations as more people are being treated in EDs. However, the theoretical buffer-system described in Figure 14 appears to be failing. If public expectation and demand for ED provision of primary care services continues to increase exponentially, as has been shown, – the likelihood that it will soon be overwhelmed is inevitable and DNW rates will continue to increase. DHBs are yet to reap the benefits and feel the impact of PHO initiatives. Although the early signs are not encouraging as they do not appear to be reflected in Traige performance indicators reported to the Ministry of Health by DHB's.

It remains unclear whether DNW populations are inherently different from other differentiated populations that attend ED. It has been shown that DNWs can include people with serious illness who do not get adequate assessment, treatment/intervention and that this can lead to disastrous outcomes. But so, too, do other ED populations. Patients with chest pain, for example, can also be discharged home and have acute myocardial infarctions that have not been picked up on initial assessment. Therefore, measuring clinical outcome might not be the most appropriate variable when looking at those who DNW. Perhaps it may be best to look at few defined groups – like chest pain and follow up for adverse events before and after discharge (Robinson, Woods, Snedecker, Lynch, & Chambers, 2002); acute exacerbations of asthma (Rydman et al, 1998); overdose; minor head injury; and so on.

One way of assessing this might be to adopt a simple before and after study. These always need to be thought about carefully to make sure there are no confounding factors such as changes in staffing, other initiatives started at the same time, seasonal variations and so on. During this study, a number of improvement initiatives were on-going which undoubtedly impacts on the validity of the results. With any change, there might be the temptation to measure the outcomes immediately after it is instituted (LeFort, 1993). However, it is widely accepted that such changes will take at least three months to bed in. There will be an initial period of getting new systems adopted followed by a period of enthusiasm. The research(er) must acknowledge this and adapt the data collection process and its analysis processes to accommodate accordingly so that information gained remains truthful and accurate. Many studies have only examined the patient who goes through the new process.

Low Responses Rates

Postal surveys historically generate a significantly low response rate (Altman, 1995) and this was reflected in the numbers received by the researcher (n=90). This suggests that, among the factors that can contribute to low responses rates deVauss (1999, p.345), "question content, question construction, method of administration and questionnaire length" can be some of the most problematic. Whilst a lot of attention was paid to the "dimensionalisation" of these details in the earlier phases of the study's design (see Figure 2), such variables may have contributed to the poor response rate.

There were a significant number of no responses due to questions left unanswered by participants who responded. This may have also been caused by the factors outlined above but additionally, as Suchman and Jordon (1994) (cited in deVauss 1999, p.345) point out, "if people differ in the way they interpret the question, they will in effect only be prepared to answer different questions". Low responses may also have been a direct result of the way the survey was designed.

Only one mailing of surveys took place which was ultimately the likeliest reason for the low response rates. However the poor response rate could also have been a result of participant apathy about this subject. This can be shown from one respondent (489) who, when asked if they wished to receive a final report on the study replied: "No thanks, I'm getting too old to be bothered about this kind of thing". Literacy and educational preparation and language barriers may also have ultimately contributed to the low response rates.

Statistical Analysis

Statistical testing, at a number of different stages of their visit to an ED, demonstrated that those who DNW are more likely to leave before medical staff see them but after being seen by triage nurses or having had some kind of intervention from the primary nurses. Chi-squared values for independence and trend returned *P* values of ≤0.01 for DNW at different

stages through the ED continuum. This suggests that DNW occurs more after triage has taken place indicating that people's decisions appear to be influenced by the interaction/intervention that may (or may not) have taken place at the ED reception/Triage area. Interaction (as found from documented evidence reviewed retrospectively) appeared to be inconsistent and appeared largely dependant on the activity of the Department at the time, the experience of the triage nurse and, the interventions of the primary nurse following triage.

Statistical analysis proved useful in gaining descriptive frequencies of the population measured. This allowed for their characteristics to be compared with the actual ED population who did wait for treatment. It also allowed for comparisons to be made with what was known about DNWs from the literature. It was that certain participants did not answer all questions that were measured statistically, so data sets often did not match. This could be seen when measuring those who said they were being followed-up against the timeframes in which they were being followed up that had been supplied in the responses. This led to variations in data sets which are likely to impact on the scope to draw generalised conclusions from the results.

Qualitative Analysis

Using open-ended questioning proved a useful technique, given the nature of information that was obtained. In classical qualitative studies participants would normally be asked to review the researcher's interpretation of their responses (to check if the meaning of what was said was correct), but this was not undertaken. However the value of exploring the meaning of peoples experiences in the ED - prior to deciding to DNW - proved invaluable in supporting the statistical data generated. The trends generated from the statistical data collected and measured fell short of giving real meaning (or explaining) why someone decides to DNW.

Conclusion

Quantitative and qualitative data presented in Chapter 4 have been analysed and discussed in relation to the overall understanding of the DNW issue. It was shown that quantitative measurement alone - while offering an accurate reflection of the population measured, might not be an effective outcome measure of the variables that can influence someone's decision to DNW. In addition, although the causative factors were diverse, quantitative analysis alone would not have allowed for definitive conclusions to be made.

The conclusions drawn from the research process, its inherent limitations and recommendations for future research are presented in the final chapter.

Chapter Six

Conclusions & Recommendations

Introduction

This study was driven by the goal of defining what a DNW population was and suggesting what the outcome of taking a DNW had on people's health i.e. was their health at risk from taking a DNW. To research the factors that influence this, therefore, two important tasks were essential to the research processes were undertaken and described in earlier chapters.

The first task was to achieve clarification of ideas and gain a clearer insight into what information existed and had already been revealed from previous research studies in this area (see Chapter Two). Such studies identified that DNW populations remain poorly defined in the literature. This lack of clarity therefore appeared to impact on the measurements (and some generalisations) that might be made within current research. Establishing the urgency (triage categories) of the DNW group was important as it is still unclear from the literature whether DNW groups remain an *undifferentiated* population. A number of topic-based literature searches were undertaken before, during and after the data collection process had taken place. A number of these pieces of research were from nursing perspectives. These were analysed in order to arrive at the most compelling description of a DNW population so as appropriate measurement and extraction from a larger general ED population could be performed.

The second task was to discover how people perceived their own reasons for leaving without being seen by a doctor; what influenced their decision-making at the time, and if they shared any commonalities in their reasons. This would establish, if their assessment, treatment, and/or management, could be altered or improved. This could not be done without adequate consideration of the context of their presentation. Therefore, simultaneous systems process analysis was undertaken when data collection from the surveys was being undertaken. This complex task required the utilisation of different research methodologies including both quantitative and qualitative methods used in an exploratory design. It was always intended – as no previous studies had been identified in a New Zealand setting – to represent a moment in time. Differences and similarities gained from the literature were identified. For the data generated to be useful to nurses, an abstracted conceptualisation of the themes generated was placed into diagrammatical format so that they could be more easily perceived – and reflect how these themes are intertwined and impact on each other.

This concluding Chapter now examines how effectively these tasks were achieved, the learning that occurred through the experiences gained from undertaking the research study including the limitations and strengths of the research methodology used. And it finally offers some recommendations arising from the research process.

DNW – Concept, Measurement & Research

Understanding the dynamic, (often) subjective and multidimensional nature of DNWs is a philosophical and scientific challenge. Chapter Two discussed the factors that influenced those who leave the ED prior to medical assessment. The literature review offered in this study revealed that DNWs remain a poorly defined and a poorly differentiated population, so the variables and sometimes-individual nature of DNW continues to contribute to the inherent difficulty of defining and measuring this phenomenon. Physical and social aspects only were included in this approach to define a DNW population, and psychological and spiritual aspects of well-being, for example, were not considered. Outcome in this study did not consider other aspects surrounding quality of life issues i.e. participants were not asked about their current health status

Poisson Distributions.

The literature search also assisted in identifying the correct type of tool to use to collect the data. DNW arrivals are not necessarily foreseeable and therefore difficult to control or manage prospectively. They are random in nature and this determines its own probability. The theoretical situation which gives rise to data of this type is easiest to describe in relation to events occurring over time – at a fixed rate on average – which in this case is known as Poisson (Altman, 1995). According to Hovenga (1998, p.282), "Poisson is the most commonly occurring distribution in healthcare". Poisson distribution is very asymmetric when its mean is small, but with larger means it becomes nearly symmetric. Therefore, the number of outcomes occurring in one time interval is independent on the numbers which occur in any time interval. This is significant when considering DNW populations as it suggests that for a researcher to make more generalised statements about DNW populations, these patients may need to be tracked periodically. Looking at DNW in only one time period might not be adequate to make generalisations but it allows the researcher to get a feel for what the most realistic (research) outcomes might be. It makes prospective studies difficult and therefore the retrospective method was used.

There have been suggestions that new research paradigms lead to new ways of gaining insight and understanding. Triangulation is a recent research approach that combines different methodologies to achieve a more complete understanding of the phenomenon being examined. The use of elements of data triangulation was an effective way of revealing clear insight into the similarities (and differences) which exist in terms of the characteristics and themes of those who DNW – particularly when statistical significance testing became less compelling.

Limitations of the study method

The researcher was aware of the inevitable limitations of a study of this nature. Some of these limitations have been outlined in the proceeding Chapters as suggested by Lefort (1993). The important ones include: a small study sample; deficiencies in response rates; participants excluded from the study; participants not asked for feedback on how their responses were interpreted by the researcher; and the large proportion of no responses to many questions in the surveys returned. These limitations are outlined more formally before considering the recommendations from the study data.

Study Sample

The study sample was small (n=489) and due to Poisson distributions may affect generalisability of results generated. Due to the multivariate nature of DNWs, it has been suggested that DNW groups may need to be tracked periodically in order to make comparisons and test for significance in seasonal variances and so on. No periodic tracking of DNWs occurred in this study. However, as previously stated, an aim of this study was to produce data for a moment in time or 'snap-shot' only. To make suggestions on future research considerations in this area, researchers may wish to consider this and decide to track DNW over a longer period. DNW populations were identified and triangulated from those DNW notes collated initially by reception staff then by extracting discharge codes from all ED presentations daily to ensure all were identified. However, no procedure existed to ensure staff were using the DNW and SD discharge codes correctly as it has been inferred that staff might have been using these codes inter-changeably. Self-discharge patients may have been discharged by staff under a DNW code, and vice-versa. Had these self-discharged patients been included in the sample analysed, then a greater response

Response Rates

Participants were only mailed surveys once. The researcher was well aware that postal survey results are often low yielding – particularly when compared with other forms of survey such as telephone surveys, for example. But the research was heavily restricted by time constraints (see later). Therefore, the study did not achieve its aim of receiving responses from 10% of the DNW population. In all, 92 responses were gained compared with the 110 responses required which would have constituted 10% of the total ED population measured during the time of the study. Annual DNW rates required to be anticipated by the researcher prospectively. This was based on previous DNW statistics and the literature, leaving the researcher to make an "educated – guess" about the likely rise in DNW presentations and what the eventual number would be. The final volume was incorrectly guessed as a proportion of over 600 presentations for the year. However, it was felt that enough responses had been gained to establish a reasonable element of clinical and statistical significance: the 92 responses represented a response rate of 18.8% of the 489 surveys actually posted.

Participant Exclusion

Out of the 646 potential participants that could have been contacted for this study, 489 surveys were sent out. A significant proportion of people (n=155) were not sent surveys as they had no documented triage assessment. However, it was this very population that the researcher needed to get responses from in order to generalise about the urgency of their condition. Retrospective determination of their clinical status (or their urgency for treatment) could not be gained from the little data that existed about them. It was assumed that, because they left, their problem was not urgent. It is this very misconception that is perpetuated in the literature and ought to be highlighted for future researchers wanting to further research DNWs or patient urgency for treatment in this context.

Participant Feedback

A truly qualitative approach would have required the researcher to have made contact with the respondents, to discuss whether his interpretations of their responses was accurate, correct and a fair reflection of their sentiments expressed. As this process was not undertaken, it is entirely conceivable that the researcher may have misinterpreted the responses gained, thereby directly impacting on the final themes generated. However, it was felt that sharing the responses gained with a "judge-panel" prior to data analysis of the qualitative aspects, was evidence of a reasonable approach to the data without entering into the more formal realms of the qualitative paradigm method.

Completion of Study

Submitting a final draft of a thesis may indicate completion of a project and allow researchers to develop a sense of "closure" after an often intense period of contemplation and writing. In this case, though, the submission of the study for academic appraisal is merely the start of another journey for the researcher who is also responsible for the dissemination of the results found. In this study, respondents require to be posted diluted research reports of the results and outline any changes, improvements or enhancements made to the service as a result of what the study found. It is also hoped that undertaking and highlighting this stage demonstrates a willingness to uphold the qualitative and ethical principles which surround participant participation and partnership outlined by Tolich and Davidson (1999). Results need to be disseminated to colleagues and peers with presentation of the study at national conferences or symposia. It is anticipated that a follow-up presentation may be made to the same group that provided feedback on the initial audit undertaken by the researcher (Baur, 2004).

Procedural, Design and Measurement Limitations

One of the biggest challenges placed on the researcher when undertaking this study was the time limitations commonly inherent to a study of this nature. As previously stated, the researcher was in full-time employment as the Charge Nurse of the unit in which the research was being undertaken. To be a truly objective piece of research, it might be

expected that the researcher take leave of absence from this role to conduct the study. This, however, was not possible for obvious reasons. Also, due to the operational responsibilities of this role, little or no time could be spent on this project whilst at work and therefore had to be accomplished within the morsels of time left over when not at work. To ensure that it remained up to date and did not fall behind target, the project was dissected into the three phases described below which were reviewed on a monthly basis by the researcher and academic supervisor(s) as the project developed. This proved challenging as appointments could not always be met due to diary conflicts and the emergency nature of the researcher's work resulting in a number of rescheduling of appointments. These time constraints had not been fully evaluated by the researcher during the conceptualisation stages (see Figure 2).

Phase One

This consisted of the conceptualisation of the study: formalisation of its aims (research proposal); how it was to be conducted and by whom; its methods and development of the actual survey device. Regional and University ethics approval was sought during this phase. A gamble was taken by the researcher that approval would be granted on its first application – which is uncommon. This gamble paid off but was the result of a significant volume of pre-planning and physical input to ensure its successful passage through this obligatory process. A three-month target was placed on this phase and, whilst ambitious, proved achievable.

Phase Two

This phase consisted of developing the statistical database for data-entry purposes from the responses gained. This proved to be an arduous task as a significant amount of focus and concentration was required from the researcher to ensure that the variables being measured were able to be adequately coded, recoded and transposed during the analysis/interpretation phase.

Phase Three

A significant amount of time was required by the researcher to consider the multivariate nature of DNWs; the quantitative results; themes and the inherent meaning of the results generated. This took place during the writing of this document which often lead to significant number of re-writes of certain passages as new data generated often conflicted with results that had already been generated and written-up. Researchers who undertake their enquiries when employed full-time need to consider this issue fully when determining their time-frames. It might also be considered by those who wish to undertake research whilst working, that a collaboration of authors might take place. Dividing the work would help to spread the inevitable load and may ultimately contribute to the scope and validity of the project.

Scope of the Project

Focusing the scope of the project helped to allow for more in-depth analysis. It is acknowledged – and hopefully has been adequately demonstrated – that it is hugely important to conduct descriptive and exploratory data analysis prior to commencing more detailed statistical analysis. A large number of variables were being measured in this study simultaneously.

Bias from researcher – influencing the results

No statistical testing or other effective means were undertaken or demonstrated to identify or measure for any researcher bias that may have inadvertently occurred. For example, as mentioned in Chapter Four, a system process analysis was undertaken to identify the weaknesses that may have been influencing people who DNW. The researcher was required to set aside his Charge Nurse's hat and apply his methods as an objective observer as if he had no prior knowledge of the existing system weaknesses. It is hoped that an objective approach has been demonstrated in the steps described in the methods Chapters to show that every decision and action taken was to achieve and maintain objectivity and not allow for existing knowledge to influence results.

Also the researcher/Charge Nurse performed the role of triage nurse during the data collection period. This may impact on the internal validity of the results, as it could be discerned that the researcher had a direct ability to influence people's decisions and skew results by influencing such factors as documentation (which, as a researcher, he would himself review); explanations given to people; management of people whilst in the waiting room and so on. The Charge Nurse/triage nurse on particular days was equipped with knowledge of data collected from the research which allowed him to practice perhaps differently from his colleagues. This was not tested.

Recommendations

The following recommendations are split into two separate parts. The first outlines the recommendations about those who DNW in Emergency Departments. Many of the recommendations made may relate only to the setting where the study was conducted and may not necessarily be applicable generically to all EDs in the country. Due to the limitations of the study and validity of the results mentioned earlier, the researcher felt it would be more appropriate to set the corresponding recommendations into micro and macro contexts. The second part of the recommendations section relates to the research process so future researchers may gain from the successes and pitfalls encountered along the way during the undertaking of this study.

Micro Context

Emergency Departments that demonstrate their registration processes taking place before people have had a triage assessment performed, need to address this practice as matter of priority. A proper pre-registration (triage) assessment ought to take place as people have been shown to DNW without any assessment at all. This process perpetuates the misconception that DNWs are adequately differentiated i.e. non-urgent and would assist in reducing the chances of missing signs of serious illness. The resources for Emergency Departments need to ensure – as a minimum – that the triage area is manned at all times of the day without compromising or impacting on the other services it provides. The result of this is two-fold. Doubling-up with other roles may be counter-productive as it has been shown to remove nurses from this vital area in order to attend other people, so people are being missed. It would also allow nurses to provide continuous oversight for people waiting. The sense of abandonment felt by those who DNW might be greatly reduced, in this setting at least, if some form of contact could be made with a nurse at all times.

The physical attributes of Emergency Departments need to be considered and altered accordingly to ensure continuity of care is maintained and avoid creating an unsatisfactory patient flow - which also results in people leaving before they are adequately assessed. It may not be appropriate for Emergency Departments to use their waiting rooms as treatment areas. People often do not consider them as germane treatment facilities because they offer little privacy or the ability to maintain dignity. Emergency Departments need to consider and actively enforce the appropriate dress code for their staff. People present to EDs with a number of preconceptions about the service. These can be based on numerous variables: previous experience is a major one; how staff *look* is another. It is necessary that staff and their corresponding roles are clearly identifiable by members of the public. Reception and triage staff should be adequately and easily identified and differentiated. Physical barriers to communication that exist in EDs appear to contribute vastly to those who leave before assessment. Dissemination of information about the triage process by staff may be useful. A number of people reported a lack of understanding about the priorities given to various illness and injuries inherent in triage management. Knowledge and education for staff of the supporting information technology systems used in the Emergency Department may help to ensure that proper discharge codes are applied when people have left the Department. The lack of sophisticated and up-to-date information technology is also suggested as a possible contributor to those who are assigned DNW discharge codes and this may again perpetuate the misconception about urgency.

Macro Context

A clearer understanding and definition of those who DNW needs to be further refined and agreed upon at a national and collegial level. This will allow for the characteristics of this poorly and undifferentiated patient population to be adequately measured and consistently

reported on in the literature. Misconceptions about the level of urgency – often associated with those who leave prior to medical assessment – need to be further clarified, as it can be shown that DNW patients are at risk. This is particularly relevant for people presenting with mental health emergencies as ED staff may not yet have acquired the necessary skills or adequately resourced to deal optimally with such emergencies of this nature.

Adequate training in triage assessment and management for all staff undertaking this role should also be considered a priority. It is essential for triage education to incorporate, elaborate and explicitly emphasize the necessary elements of effective interpersonal communication skills and how behaviour ought to be modified according to particular circumstances. Recognition of the severity of illness and proper assessment is also required to ensure that DNW patients become a less undifferentiated population. Once national triage training becomes common place for ED staff, it might be worth considering whether a nursing triage assessment could be considered adequate to remove the "undifferentiated" term currently associated with those who DNW. It needs further discussion.

There is still no published research which specifically addresses how to improve the situation pertaining to DNW populations. This is because the overall objective of management of DNWs remains unclear. For example, is the goal of reducing the number of DNWs a valid improvement? Or is it more realistic to expect that EDs will always have DNWs and that marginalisation of these undifferentiated populations – is a more appropriate way to manage them? ACEM and CENNZ (2005, p.2) recommend that "prolonged waiting times for undifferentiated patients presenting for emergency care is viewed as a failure in terms of access and quality". It is suggested in this study that to improve the concept of quality for patients attending EDs, the total time patients spend in the Emergency Department should be more fully considered and attention must be paid to those conditions/ailments that could be turned around at the front door. Mobilisation of adequate recourses is therefore necessary to meet an expanding public demand for this service.

Advancing the scope and role of nurses in the Emergency Department ought to be consummate with the appropriate resources and educational support for staff. In this way, consistency in the skill and expertise of the nurses providing the care – as well as the level of service provided – can be maintained at all times. There needs to be a clearer agreed definition of the level of non-urgent services Emergency Departments are expected and required to provide in future. Patients may spend considerable time in the ED, but for how much of that time are they being actively assessed and treated (Hider, 1998)? This is an area with a potentially larger role for nursing should the concept of Nurse Practitioners™ become a reality for all EDs throughout NZ. However, NP's they should be quick to ensure that levels of local service provision and their demand do not dictate or define that which nurses in these roles will ultimately do or be responsible for. Nursing should be swift to

ensure that it can adequately define what it is currently doing to address problems like DNWs, before others may be encouraged to do it for them. Creating better and quicker access to pain relief for people may also be an area where NPs could evolve their expertise in the ED. It may also be necessary for nurses to take a lead in educating the general public, to avoid any potential misunderstanding about this service as some reliable form of free healthcare "one-stop-shop".

Waiting times in ED, although unpalatable, are the reality for consumers of ED services in NZ and globally. However they become harder to define if specialist physicians and surgeons are using the ED as their assessment area, who are referred patients with acute conditions from their GP. These patients should either be admitted as in-patients (leaving the ED purely for emergency presentations) or re-routed to acute admitting facilities that are adequately resourced to diagnose, treat and discharge people without having to admit them as in-patients. These concepts are not necessarily fully understood by the general public – nor, perhaps, even by some who may be responsible for delivering primary care services – and are therefore not considered justifiable reasons for the environmental conditions people encounter when they present to the Emergency Department.

Recommendations for Future Research

Further studies are required to find a reliable, practical and meaningful outcome and definition measure for all undifferentiated population groups of which DNWs are just one. They continue to be at risk due to their multivariate and elusive nature. Interventions or practice innovations that take place at triage to address the concerns of those who DNW need to be measured adequately before *and* after, to enable adequate comparison and identify if enhanced outcome or treatment has been achieved. This study has outlined that the young male (20-35 years) who may or may not have mental health problems is at real risk of deciding to leave prior to assessment by a doctor. This may be an area that needs further research

An urgent call for a study that investigates why people increasingly continue to present to the ED as opposed to seeking assistance from their primary care provider is necessary. This is because presentation rates appear to suggest that the ED is slowly becoming the default or even preferred choice for people when seeking help. A call for an a generic definition and understanding of non-urgent services is required and the public require education about this. For these to occur, however, nurses need to seek to create a supportive environment for the research process to take place – one which encourages nurses to study areas of their practice and ultimately allowing the tools necessary for them to more clearly define what they do so well.

Concluding Statement

This study aimed – in part – to fill the void highlighted by the omissions of the Inquest (discussed at the beginning of this study) into the death of a young woman from septicaemia. This study has succeeded in qualifying many misconceptions about DNW populations that may be evident in current practice settings and it has sought to explain some of their inherent characteristics. It has not sought to address the impact of overcrowding, bed blocking or increased length of stay in the ED. Although, it is recognised that these issues will contribute to the overall problems experienced by EDs that may lead to the increasing incidence of those who DNW.

Unlike some other nursing specialties threatened with assimilation into mainstream medical practice by fiscal constraints, trauma and emergency nursing stands at the opposite end of the spectrum – at the precipice of change. To secure more positive outcomes for the consumers of this vital service, these specialist nurses must be willing to embrace both its inherent strengths, whilst simultaneously recognising their intrinsic weaknesses. In doing so, they can take advantage of the potential opportunities that lie ahead for this specialty.

To be effective in this quest, they must be *hungry* to incorporate new skills and gain insight from the evidence generated from research enquiry. This research study used a variety of research techniques. It demonstrated an eagerness to engage with the research process to explain and give meaning to the reality of those who DNW in Emergency Departments. The theoretical frameworks and methods have been clearly described. Quantitative and qualitative data were presented separately from the discussion to enable the reader to assess (for themselves) the level of relationships that exist between the evidence and the researcher's interpretation. The insights from this project certainly need incorporation into the setting where the study took place, so that such things as systems processes and staff behaviour/communication can be effectively modified. This, it is hoped, constitutes a reasonable and willing attempt to adopt an evidence-based approach to service improvement. Optimal provision of education and adequate resources surrounding the multivariate nature of DNWs will allow for better clinical support for the implementation or operationalisation of the changes required.

More importantly, however, it is vital that nurses remain proactive in generating and (remain pivotal in) implementing their own knowledge and understanding of the very people they serve. In this way, they will be instrumental in the continual development of their own profession.

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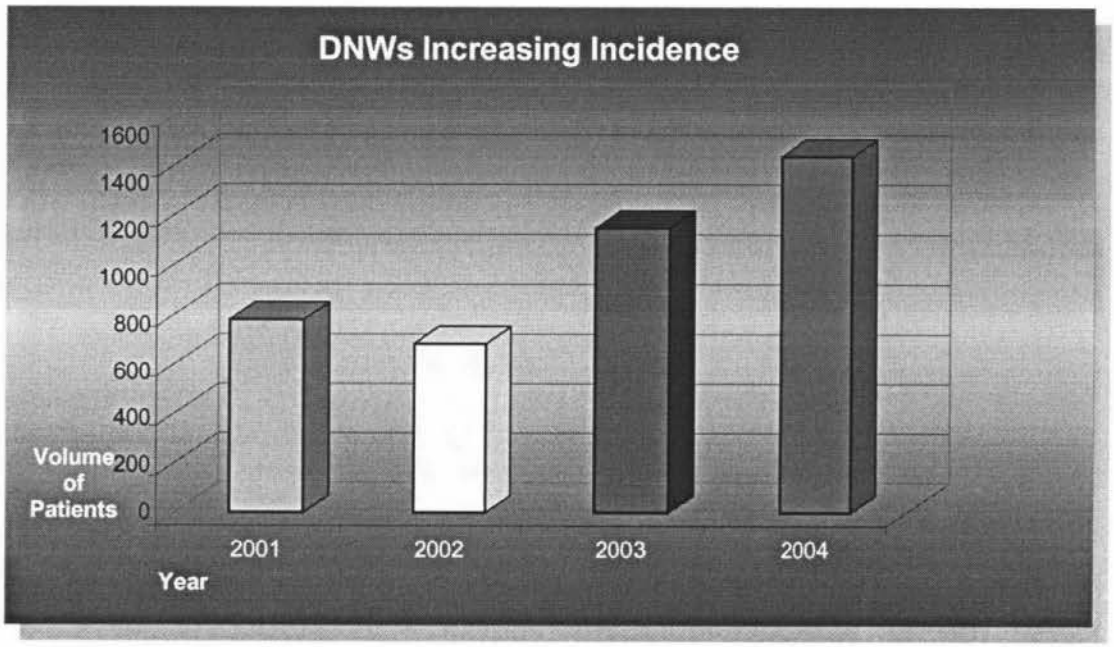
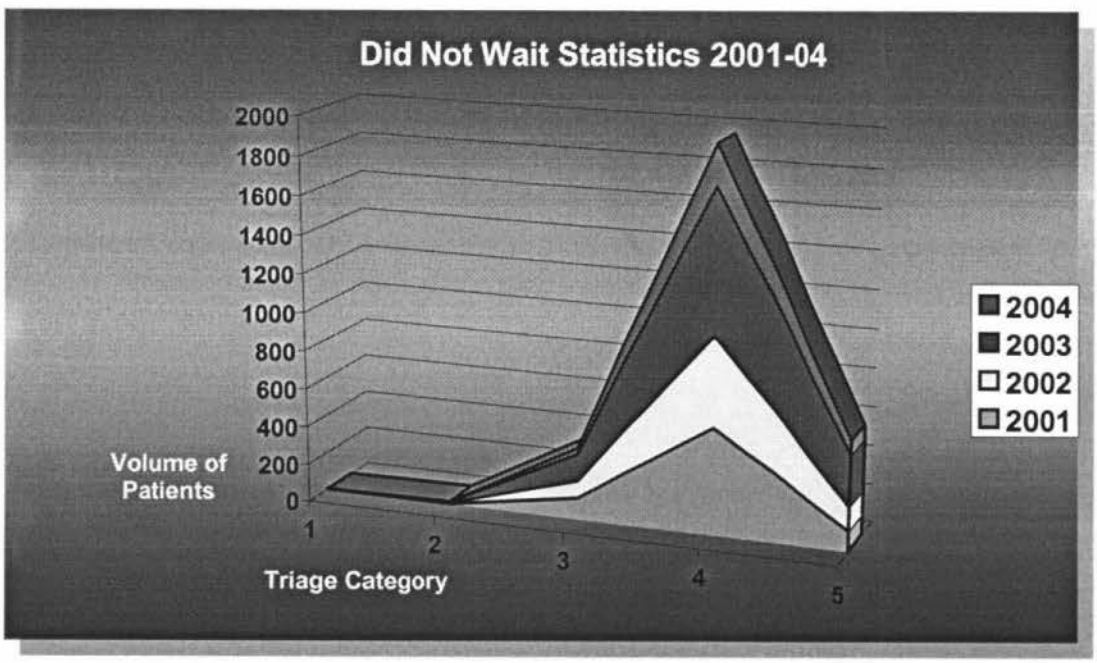
Appendices.

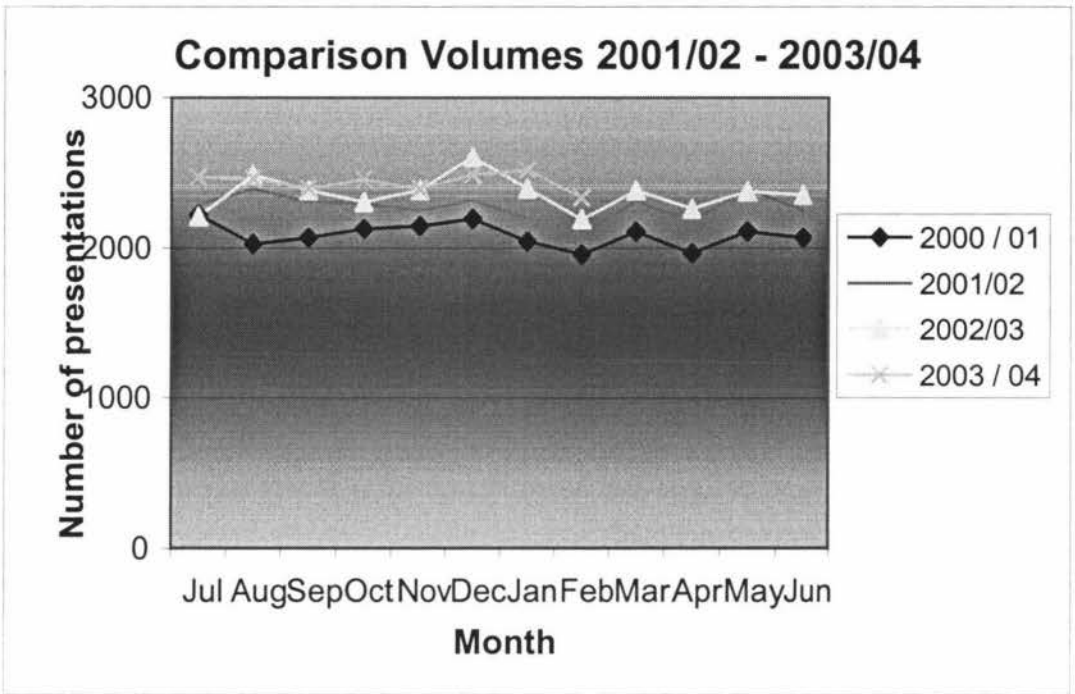
Appendix A - Annual DNW Statistics 2001-04

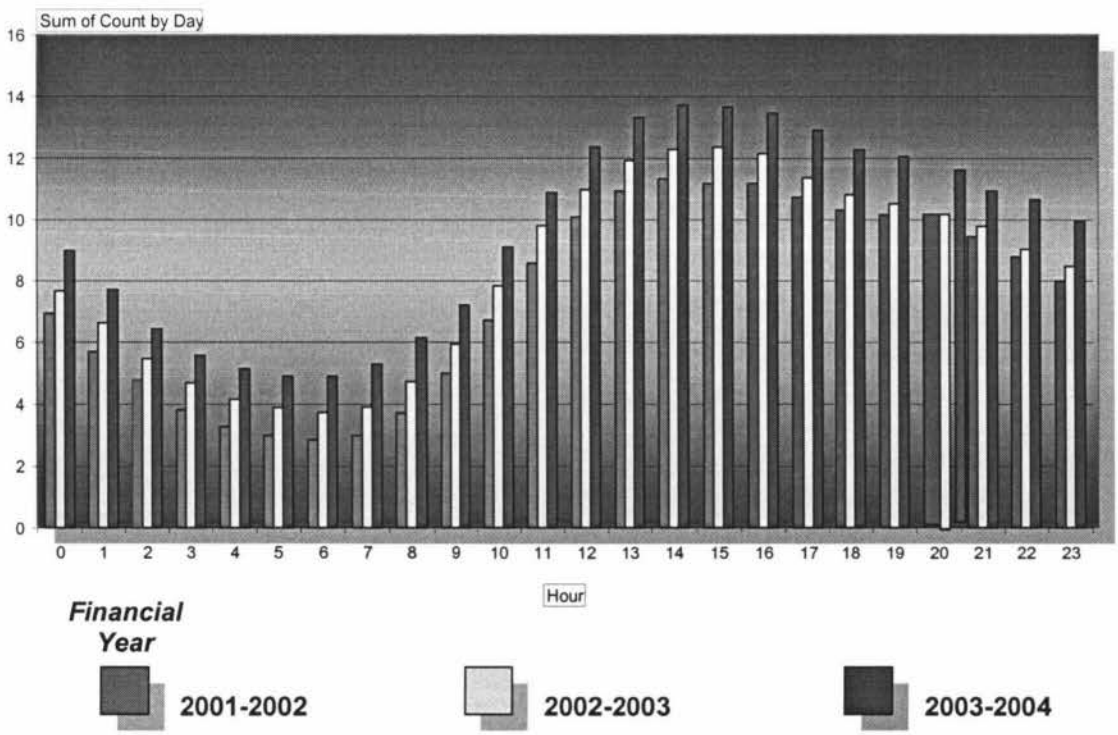


DNW Triage Categories 2001-04



Appendix B - Department Activity & Hourly Distribution of Activity 2001-04





Appendix C - The Survey

Patients Who Do Not Wait in Emergency Departments
An Exploratory Study

Participant No.	
Arrival/ Departure	
ATS Code	
Presenting Problem	

.General

	Yes	No
Was this your first visit to an Emergency Dept?		

Why did you attend the Emergency Department

What were the main factors that lead to your decision to leave?

Pain

	Yes	No
Did you have pain on arrival to the Emergency Dept?		

, please circle on the scale below where you would have put your as an indication of the severity

MILD MODERATE SEVERE

0-1 2 3 4 5 6 7 8 9 10

Had you taken any pain relief prior to attending?		
Were you offered any pain relief at any time?		
Did you have pain when you left the department?		

not, why was this?

ow long had you had this complaint? *Please Tick*

Minutes	Hours	Days	Weeks	Years

o you continue to experience pain from your //problem that brought you to the Emergency ?

d you have access to pain relief after you ne emergency department?

you normally take pain relief when you ience pain?

	N/A	Yes	No
ou did receive pain releif, was it adequate?			

3. Wait

Did anyone tell you how long it would be before you might be seen by a doctor? Please select from the following list

- Yes ☐
- Yes, and the wait was longer ☐
- No I was not told ☐
- Don't Know/Can't remember ☐

How long do you remember waiting *(Please Circle)*

0-1hour 1-2 hours 2-3 hours 3-4 hours 4 hours +

b). Given your problem, how long do you feel someone ought to wait to see a doctor?

Straight Away	0-30 mins	30-60 mins	1-2 hours	2 hours or more

c). How did you find your reception when you first arrived to the department?

Excellent	Good	Satisfactory	Unsatsfactory	Poor

d). What could have been done that would have encouraged you to stay for assessment and/or treatment?

e).Have you any suggestions/recommendations on how this might be improved?

4.Outcome & Treatment

	Yes	No
a). After leaving the Emergency department did you go to another heath care provider		

If **No**, go to d.

b). If so did you attend a:

General practitioner	
District Nurse/Midwife	
Another Emergency Dept.	
Medical Centre	
Dental Surgery	
Private Hospital	
Other	

If *other* please indicate what type of facility

c). If you sought treatment elewhere, did you have any of the following?

Blood tests	
X-Rays	
Specimens	
Ultrasound/CT Scan	
Other	

d). Approxiametely how long did it take for you to receive satisfactory treatment once leaving the ED for this problem?

Please indicate

Hours	
Days	
Weeks	
Never	

e). Are you being followed up by any hospital service :

If **No**, go to g.

f). If so, in what time frame will you be seen again

Please indicate

Days	
Weeks	
Months	
Years	

	Yes	No
G).Did your safety ever feel threatened during your wait in the Emergency Department		

If Yes, can you describe how?

H) Did this contribute to your decision to leave?

5. Special Interest

a). Would you have been satisfied with being assessed and/or treated by a nurse only?		
b). Do you believe that your condition required a doctors assessment?		

c) Please indicate your level of satisfaction with the servic you received?

Excellent	*Good*	*Satisfactory*	*Unsatisfactory*	*Poor*

6. About You

	Yes	No
a). Are you of Non-English speaking background?		
b). Was an interpreter required?		
If so, was one made available to you?		
c). Do you currently hold a Community Services card?		
d). From your experience, would you use this service again?		

e)How far do you live from the Emergency department in kilometres (Please tick)

0-1 Km	*2-5 Km*	*5-10 Km*	*10-15 Km*	*15+ Km*

Thank you for completing this questionnaire

Please indicate here if you are interested in receiving a final research report

Appendix D - Information Sheets

Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF HEALTH SCIENCES
Private Bag 11 222
Palmerston North
New Zealand
T 64 6 356 9099
F 64 6 350 5668
www.massey.ac.nz

Patients who Do Not Wait in the Emergency Department.

An Exploratory Study

INFORMATION SHEET

I am a charge nurse currently working for MidCentral Health and undertaking Masters Level study at Massey University. I am interested in finding out about people's experiences of emergency departments.

Patients who do not require urgent treatment frequently visit emergency departments. Furthermore, non-urgent patients are often a group who leave the emergency department without being seen by a doctor. One main reason for undertaking this study is to gain particular insight into the factors leading to people's decision to leave without being seen. The intention is to make suggestions on how district health boards might modify their systems and/or practice to reduce this problem; improve quality; improve potential patient outcome and help reduce risk to these users and providers of emergency health care.

As a recent attendee of the emergency department, you are cordially invited to participate in this study. I am interested in those patients who presented to the emergency department, registered their details but left prior to seeing a doctor.

I recognise the importance of information as taonga and that knowledge belongs to tangata whenua. As such, information will not be removed or handed on without participants' approval. I understand the need for appropriate dialogue and communication with Maori participants. I will work to ensure that information is understood and value your participation. I will ensure that all Articles of the Treaty of Waitangi are respected in any dealings with Maori participants.

Participant recruitment
Your name and address have been obtained from the MidCentral Health emergency department patient information database from your recent registration as a patient. As the number of DNW patients is comparatively small, we require around 50-75 responses to allow us to generate statistically significant information. All potential participants are those people who have recently attended the emergency department, registered their details but left before seeing a doctor.

What would you have to do if you agree to participate?

Should you agree to participate, all you are required to do is complete the enclosed survey. This should take around 10-15 minutes only. I would encourage you to add additional comments should you not have had the adequate space to give your answers freely. Completing and returning the survey to the researcher - in the stamped-addressed envelope provided - assumes and implies your consent to participate in this study.

What happens to this information should you choose to participate?

All information generated from this study will be stored in a locked filing cabinet and archived for a period of five years. The findings from this survey will be used to provide preliminary information about a New Zealand emergency department attendee's. This will be fed directly back to district health boards with the intention to improve services for emergency department users. A summary of the project findings will be found on MidCentral Health's Website [redacted] when completed. A summary can be posted out to you should you indicate it.

Appendix E - MUHEC/Regional Ethics Committees Approval Letters

15th June 2004

Manawatu Whanganui Ethics Committee

C/- Palmerston North Hospital
P.O. Box 5203
Palmerston North
[redacted]

Peter Baur
[redacted]

Study Title: Patients who present to the emergency department but do not wait – An exploratory study.
Ethics Reference No: 04/05/015

The above study has been given ethical approval by the Manawatu/Whanganui Ethics Committee.

Approved Documents
Protocol No 04/05/015 dated may 2004
Amendment No 1 dated June 2004
Questionnaire version 2 dated June 2004
Information sheet version 2 dated June 2004

Accreditation
This Committee is accredited by the Health Research Council and is constituted and operates in accordance with the Operational Standard for Ethics Committees, March 2002.

Progress Reports
The study is approved until January 2006. The Committee will review the approved application annually. A progress report is required for this study on June 2005. You will be sent a form requesting this information prior to the review date. Please note that failure to complete and return this form may result in the withdrawal of ethical approval. A final report is also required at the conclusion of the study.

Amendments
All amendments to the study must be advised to the Committee prior to their implementation.

General
It should be noted that Ethics Committee approval does not imply any resource commitment or administrative facilitation by any healthcare provider within whose facility the research is to be carried out. Where applicable, authority for this must be obtained separately from the appropriate manager within the organisation.

Please quote the above reference number in all correspondence relating to this study.

Manawatu/Whanganui Ethics Committee
P.O. Box 5203
[redacted]

Appendix F - Scholarship confirmation

MIDCENTRAL HEALTH

A division of MidCentral District Health Board providing specialist health and disability services

31 December 2003

MidCentral Health
Phone (06) 356 9169
Fax (06) 350 8818
Private Bag 11036
Ruahine Street
Palmerston North
New Zealand

Peter Baur
[redacted]

Dear Peter

On behalf of the PN Medical Trust I am delighted to inform you that your application for an education scholarship has been successful and you will be awarded a scholarship of $1,000 for the 2004 academic year. The scholarship will be awarded in two portions with half being paid on evidence of enrolment and the remaining half on successful completion of your work.

Sue Wood and I are just delighted that you can be given this support to assist with your academic and career plans. We wish you every success with the study this year and admire your energy in making this commitment on top of a demanding working life.

Kind regards

pp A Barter
Jenny Carryer
Professor of Nursing

Appendix G - Permission from DHB Group Manager /Clinical Director for ED

MIDCENTRAL HEALTH

27 February 2004

MidCentral Health
Phone (06) 355 0998
Fax (06) 355 0616
PO Box 2056
Heretaunga Street
Palmerston North
New Zealand

Peter Baur
[redacted]

Dear Peter

Thank you for meeting with me today to discuss your planned research project; "Patients Who Do Not Wait in the Emergency Department – An Exploratory Study".

I am satisfied that you have taken steps to ensure that your research will not negatively impact on your job performance.

Approval is given for you to proceed, subject to obtaining approval from the relevant Ethics committees.

Reporting requirements are that you furnish monthly updates to Robyn Brady (Team Leader, Emergency Department) who will report to me on your progress, via her monthly reports.

I commend you for undertaking this potentially valuable research.

Yours sincerely

Brett Sheehan
Group Manager
Acute Surgical Services

cc Robyn Brady
Team Leader
Emergency Department

Appendix H - DHB Policy – Research & Innovative Practice

POLICY

RESEARCH AND INNOVATIVE PRACTICE

Applicable to: **MidCentral Health (Provider Division)**	Issued by: **Clinical Board**
	Contact: **Manager – Clinical Quality and Service Improvement**

1. PURPOSE

To encourage clinical research and innovative practice at MidCentral District Health Board and ensure:

- protection of the rights of people who are the subject of research or innovative practice, to protect them from harm and to assure the public that this is being done
- that research or innovative practice is appropriately approved
- that management monitor the research or innovative practice and any organisational resources involved
- that the research or innovative practice activities carry appropriate indemnity.

2. SCOPE

All MidCentral Health employees
Any person accessing MCH's premises, records and patients for the purposes of research

3. ROLES & RESPONSIBILITIES

Researcher(s)

- Submitting the research or innovative practice project on the "National application form for ethical approval of a research project" (EA0502) to the Director of Nursing, Group Manager, or Clinical Director for approval for the use of MCH's facilities and resources, and including in the application:
  - A budget with identified funding or resources provided from an external agency, e.g. research grant
  - Funding or other resources which the researcher is requesting MCH to provide, including an estimate of the researcher's and other staff time involved
  - A commitment that the research will not be detrimental to the work schedule/ job description as set out in the researcher's employment contract with MCH
  - A copy of the information sheet and consent form for participants, and copies of any questionnaires or surveys
  - A summary of proposed reporting requirements, including dissemination of findings and recommendations
- Submitting the research or innovative practice project to the Manawatu Whanganui Ethics Committee for ethical approval
- Organising supervision from an appropriate source if required
- Providing written feedback on the project outcomes and recommendations to the DON/CD/GM/EARC as appropriate

5. POLICY

MCH acknowledges the need for research into ways clinical treatment and patient care can be refined and enhanced. It shall support research projects which meet ethical and professional requirements, and clearly demonstrate potential clinical, professional and/or financial benefits to the organisation.

The ethical approval of the Manawatu Whanganui Ethics Committee shall be obtained prior to any health or disability research or innovative practice protocol being conducted within the organisation by employees, tertiary students or other parties granted honorary staff status, and all conditions of the Ethics Committee ethical approval shall be complied with.

Prior to the proposal being submitted to the Manawatu Whanganui Ethics committee, approval for the use of MCH facilities and resources is to be obtained from the Director of Nursing, Group Manager or Clinical Director.

MCH does *not* regard the following as research or innovative practice: most audit (refer Appendix 1); surveys which do not involve the use of confidential or other sensitive personal information, e.g. patient satisfaction surveys; funding of services; access criteria; practice guidelines.

6. MEASUREMENT CRITERIA

Number of research projects approved, completed and disseminated.
Group Manager response time

7. DEFINITIONS

Definitions from the Health Research Council Act 1990:

"Health Research" means research that has or may have relevance to human health; and includes biomedical research and public health research.
"Biomedical Research" means –

a. Research in the biomedical sciences relevant to human health; and
b. Research into the causes, consequences, diagnosis and treatment of human illness

"Public Health Research" means research into factors that influence the health of a population; and includes –

a. Research into health systems and health services; and
b. Research into the environmental, socio-economic, cultural, and behavioural factors that determine health status

Definition from the Operational Standard for Ethics Committees, Ministry of Health, March 2002:

"Innovative practice" (refer also to Appendix 2)
A planned deviation from the currently accepted practice of a New Zealand body of health professionals involving an untested or unproven clinical intervention intended to be used on an ongoing basis. Innovative practice includes the application of known procedures in new or novel circumstances in which they have not previously been tested. It may involve new delivery

APPENDIX 1

EXTRACTS FROM OPERATIONAL STANDARD FOR ETHICS COMMITTEES, MINISTRY OF HEALTH, 2002

3.1 Proposals to be submitted for Ethical Review

95. All proposed health and disability research investigations must be submitted for review by an ethics committee where the investigation involves human participants, whether health or disability service consumers, healthy volunteers or members of the community at large, and the investigation:

i. compares an established procedure, whether therapeutic, non-therapeutic or diagnostic, with other procedures which are not recognised as established, either by virtue of their recent development, discovery or use in a new or unfamiliar way

ii. involves access to personal information for purposes other than direct consumer care or clinical audit (ethical review is required if it is intended, as part of an audit, to seek additional information from patients other than that collected during the provision of patient care; any access to health information should be in accordance with the provisions of the Privacy Act 1993 and the Health Information Privacy Code 1994)

iii. seeks to further scientific or professional knowledge by means of questionnaires, interviews or other techniques of information gathering, or by means of laboratory analysis of human blood, tissues, etc, of living people, cadavers or discarded body tissues (for example, placenta)

iv. is research conducted by government departments unless they have a statutory exclusion (for example, Statistics New Zealand)

v. is observational clinical research or is a physiological study

vi. is a clinical trial

vii. is research involving the use of any form of irradiation, organ imaging or surgical technique

viii. involves innovative practice in health and disability services

ix. is a new treatment or intervention which uses pain or deprivation of basic food or drink as a means to change behaviours.

96. All proposals for the use of an established procedure in an innovative way must be submitted for ethical review prior to their adoption.

97. If a member of the public or a health professional has cause to debate the application of an innovative practice in a particular instance, the planned use of that practice shall be submitted to an ethics committee for reconsideration.

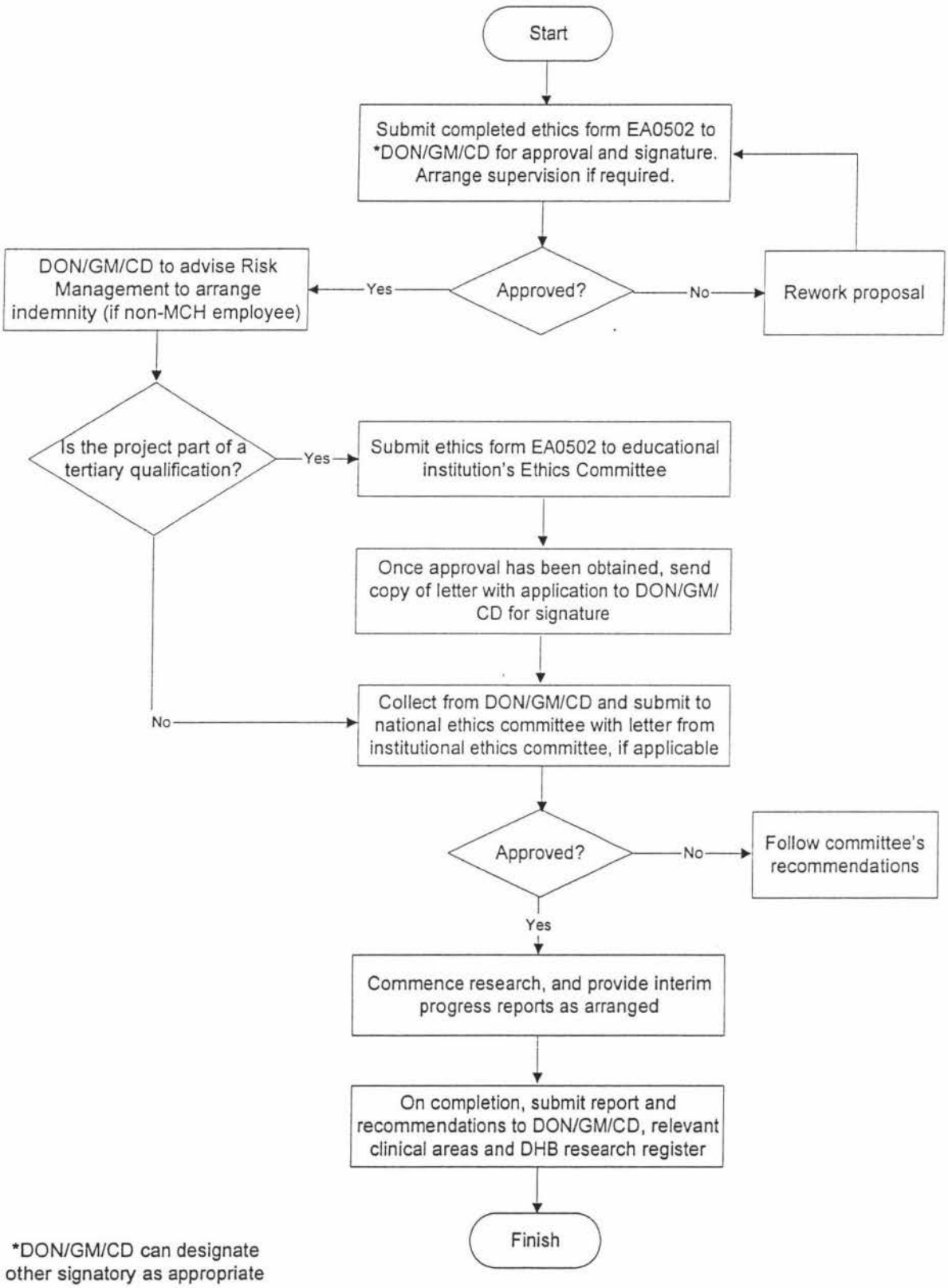
3.5 Innovative practice

112. An innovative practice involves the provision of a clinical intervention (diagnostic, therapeutic or prophylactic), be it a therapeutic drug, medical device or clinical procedure, that is untested, unproven or not in common use and therefore poses its own unique set of characteristics and issues.

113. Clinical interventions are generally of an invasive nature. Certain types of clinical intervention (such as surgery, chemotherapy or radiation therapy) are known to pose a considerable risk of harm to consumers.

APPENDIX 2

PROCESS FOR RESEARCH OR INNOVATIVE PRACTICE PROPOSAL INVOLVING MCH



*DON/GM/CD can designate other signatory as appropriate

Appendix I - Research Assistant Confidentiality Agreement

Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF HEALTH SCIENCES
Private Bag 11 222
Palmerston North
New Zealand
T 64 6 356 9099
F 64 6 350 5668
www.massey.ac.nz

Confidentiality Agreement

Researchers must obtain a signed confidentiality agreement from anyone, such as research assistants, who will process any data containing personal information. This should cover agreement not to disclose, retain or copy information

Patients who Do Not Wait in the Emergency Department.

An Exploratory Study

Confidentiality Agreement

I..... Paula Jane Rowe .....(Full Name –Printed)

agree to keep confidential all information concerning the project.....

Patients who Do Not Wait in the Emergency Department. An Exploratory Study.....

I will not retain or copy any information involving the project.

Signature: P Rowe.

Date: 2/4/04

Appendix J - Research List A

Team Leaders List of Participants

Participant	Study Number
BAUR, Peter [redacted] M 30y GRN [redacted]	1.

Appendix K - Research List B

Researchers list of participants sent questionnaires

Participant	Study No.	ATS Code	Arrival/ Departure	Complaint Presenting	Request Report (*Y*or*N*)
[redacted] M 30y [redacted] Palmerston N [redacted] GP: A J Greenway	1	3.	1033 / 1256	Abdo. Pain	Y

Appendix L - Approval letter from Te Whare Ruopura

MIDCENTRAL HEALTH

Te Whare Rapuora/Māori Health Unit
PO Box 2056, Palmerston North
Phone (06) 350 8210, Fax (06) 350 8158

Acknowledgement

Ethics Committee Meeting Date: April, 2004

Forwarded to the following for comment (if applicable):-

O Manawhenua Hauora

O Te Roopu Mangai Kaumatua (Advisory group to the Maori Health Unit)

O Other

O Further discussion required

X Comments and suggested amendments noted below

Proposal: Patients Who Do Not Wait in the Emergency Department – An Exploratory Study

Date Proposal Received: 29/02/04

Contact Person and Contact Details: Peter Bauer, Emergency Dept, MCH [redacted]

Comments/Amendments (if applicable): The Māori Health Unit is pleased to support Peter in this study. While the study does not have an ethnicity demographic we would expect that the results will prove useful at some future stage as we continue to investigate ways to improve the interface between tangata whenua and health services at the secondary care level.

Appendix M - Data CD-Rom containing all hard data collected

CD-ROM never received. 22 January 2008

ND Rose

Appendix N - Scientific Review Committee Notification

Massey University
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF HEALTH SCIENCES
Private Bag 11 222
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T 64 6 356 9099
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www.massey.ac.nz

TO WHOM IT MAY CONCERN

Re: Scientific review of Peter Baur's proposal for the 100 point MPhil research project entitled:

Patients who do not wait in the Emergency Department – An Exploratory Study.

A research review committee has been set up within the School of Health Sciences at Massey University. The committee is constituted as proposals are submitted for review. Academics from within the School who have research experience and have not been involved in the development of the particular research proposal which is being reviewed are invited to participate in the committee. The proposals are reviewed to ensure that the proposed research is ethical, methodologically sound, and of sufficient scope to meet the academic requirements for which the research is being undertaken.

Peter's revised proposal was reviewed on 2 April 2004. Issues that required clarification, suggestions to ensure the project was methodologically sound have been addressed by members of the research review committee and Peter Baur. Changes were made to the proposal to the satisfaction of the committee.

Martin Woods
Supervisor
School of Health Sciences
5 April 2004

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