

# Examining ICD-10 coding for Family Violence within a New Zealand District Health Board

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#### Attestation of Authorship

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Signed: S.D.Raju:

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## DEDICATION

To my beloved parents Kazi and Kowsilla Ouderajh who taught me that I can accomplish anything that I set my mind to achieve. This dissertation is dedicated with my love and thanks.

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## **ABSTRACT**

Family violence is a significant public health problem affecting women internationally and in New Zealand. Health surveillance is needed to inform an effective health care system response and monitor change over time. The International Classification of Diseases, 10th revision (ICD-10) coding system is an accessible data source of hospital discharge information. The purpose of the current research was to examine the use of family violence ICD-10 coding in one District Health Board. An electronic report of discharges for all women aged 15 to 74 years in whom a family violence ICD-10 discharge code was designated over a three year period will be compiled. Of the admissions in the study three year period, a family violence code, representing less than 1% was found. This research will highlight the importance of family violence assessment, documentation and coding within the health system. Health system family violence surveillance can be used to examine the association between family violence and health, as well as to monitor changes over time. Future research should assess tactics for recognizing and overcoming impediments to identification and coding of family violence.



## **CHAPTER ONE**

### **INTRODUCTION**

Family violence has been a concentrated area of health study in the past decade. Studies have helped provide insights into the cycle of violence, and the effects of family violence on children. Recently, studies have made society aware of the need to assess family violence interventions and their effects on recidivism (Stover, 2005). An ongoing supply of national and local level information about the causes, characteristics and cost of violence is the key to building a broad perception of the problem. This will bring enhanced public awareness, and enable policy-makers, researchers and others to conduct or support data collection and research. Diagnostic coding will aid in designing, developing and monitoring operative solutions (WHO, 2005b). This research investigation examined health visit diagnostic coding for family violence.

Any endeavor to reduce family violence should begin with examining the number of family violence events as well as the main determinants, that is, the contributory chain of events leading to the event of family violence. A number of countries including New Zealand, use hospital discharge statistics based on the World Health Organization's International Classification of Diseases (ICD) which has served for many decades as the main classification for information systems in particular those implemented in the health sector (O' Malley et al, 2005). The

purpose of this study is to draw attention to the need to improve the capacity for ongoing data collection and research on violence.

This research acknowledges the importance of what we have learned about the prevalence and impact of family violence. It explores the need for a more focused effort to code family violence and to obtain accurate statistics to plan services and monitor care. The research presented here emphasizes the need for coding of family violence admissions to hospitals. Also, policy makers drawing on this research must endeavor to make provisions for victims of family violence and that guidelines are set out for service providers to respond in an understanding and informed manner. Services should be aware of how those affected by family violence will gain access to services and which services they are more likely to go to for helpful interventions. Programs should be developed to respond to areas of highest need (Mulroney, 2003).

In order to set this study in its proper context, the remainder of this chapter presents an overview of family violence, the various interchangeable terms and definitions used for family violence, New Zealand statistics, the effects and economic costs of family violence.

## **STUDY AIM**

The purpose of this study was to examine the use of ICD coding for family violence within a New Zealand District Health Board (DHB)

over a three year period. This will enable healthcare professionals to concentrate on improved awareness of the seriousness of abuse of women and provide the justification for allocating more resources to programs and policies aimed at reducing intimate partner violence.

## **OVERVIEW - FAMILY VIOLENCE**

Family violence is well known as a major public health issue with important physical and psychological components and implications (American Psychological Association, 1996a; Chalk & King, 1998). This identification is the result of hard work to trace prevalence, to measure potential risk and protective factors, and to implement well-designed assessment of interventions (Tolan & Gorman-Smith, 2002). Family violence is a major issue in New Zealand. It unequivocally impacts the health and wellbeing of individuals and their family or whanau within our communities (Ministry of Social Development, 2002). The Taskforce for Action on Violence within Families was created in July 2005, bringing together key leaders from government and community-based agencies, independent Crown entities and the judiciary. It put into practice its first program of action, working to achieve change across all of New Zealand in 2006. The Ministry of Justice has carried out an evaluation of the Domestic Violence Act 1995 and associated legislation in order to ensure that the legislation is working efficiently (NZ Government, 2007). This work is supported by the Taskforce. A four - year campaign for action on

family violence – aimed at increasing awareness of family violence – was launched. The campaign is about individuals, communities and organizations throughout New Zealand working together to say openly that family violence is not okay. The campaign's purpose is to point toward various forms of family violence, including child abuse and partner violence. The campaign consists of three components:

- Communications including mass media advertising, an 0800 number, a website, media advocacy and resource development
- Community action, including a Community Action Fund and partnerships with non-government organizations and the corporate sector.
- Research and evaluation to measure and inform the campaign (NZ Government, 2007).

## **DEFINITIONS OF FAMILY VIOLENCE**

The term “family violence” is used interchangeably with “domestic violence”, and there have been numerous endeavors to define it. The World Health Organization defines violence as: “The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, mal development or deprivation “(Krug, Dahlberg, Mercy, Zwi , and Lozano, 2002, p.5). Family violence is violence or abuse of any type, perpetrated by one family member against another family member. It includes child

abuse, partner abuse and elder abuse. Child abuse is “the harming (physically, emotionally or sexually), ill-treatment, abuse, neglect or deprivation of any child or young person” (Children and Young Persons and Their Families Act, 1989).

In New Zealand the Domestic Violence Act 1995 section 3 defines family violence as violence against a person by any other person with whom that person is, or has been, in a family relationship (Ministry of Social Development, 2002). The Act also defines violence as physical abuse, sexual abuse, and psychological abuse including, but not limited to, intimidation, harassment, damage to property, threats, and causing or allowing a child to see or hear physical, sexual or psychological abuse. Te Rito: The New Zealand Family Violence Prevention Strategy 2002, defined family violence as “a broad range of controlling behaviors commonly of a physical, sexual and/or psychological nature which typically involve fear, intimidation, and emotional deprivation. It occurs within close interpersonal relationships” (Ministry of Social Development, 2002 p.8).

Partner abuse is “physical, sexual, psychological abuse, threats, harassment, attacks on someone by a person that they are or have been in a relationship with or share a household with e. g de facto partner, husband, wife, brother, sister, and flat-mate” (Ministry of Health, 2001a p. 8). Intimate partner violence is physical or sexual violence, psychological/emotional abuse, or threat of physical or sexual violence

that occurs between intimate partners (Saltzman; Fanslow, McMahon, & Shelley, 2002). Elder abuse “occurs when a person aged 65 or more, experiences harmful physical, psychological, sexual, material or social effects caused by the behavior of another with whom they have a relationship implying trust” (WDHB, 2003, p.146)

## **NEW ZEALAND FAMILY VIOLENCE STATISTICS**

Family violence statistics can contribute to our awareness of the nature and prevalence of violence within New Zealand. The variations exist in data collection strategies, research methodology, disclosure rates, and social attitudes and this contributes to the complexity of the depiction that occurs. Within New Zealand, family violence is the most widespread form of violence.

It is believed that one in seven families experience violence and it affects the whole family, both children and adults (Snively, 1994). 6,833 children were assessed by Child, Youth and Family Service (CYFS) in the year 2000 for neglect or abuse (Ministry of Social Policy, 2001). Furthermore, Child, Youth and Family received 31,781 care and protection notifications in the year 2002/3 and from these notifications, 7361 children or young persons were found to be abused or neglected (Ministry of Social Policy, 2004). It is suggested that abuse such as severe or cruel punishment is experienced by 4 -10% of New Zealand children. To add to this approximately 18% experience sexual abuse with



estimates of sexual abuse being higher for girls (Ministry of Health, 2001a).

Partner abuse results in about 400 women being hospitalized per year from assault and 11 women die as a result of that assault. The occurrence of partner abuse was shown in the New Zealand Women's Safety Survey undertaken in 1996. 15% to 21% of women reported that in the previous 12 months they experienced physical or sexual abuse (Morris, 1996). Between one in three and one in seven women were hit or forced to have sex by their partners, at least once in their lifetime. Twenty-one percent of New Zealand men say they have physically abused their female partners in the previous year surveyed. From the 21-year-old birth cohort of 482 men and 462 women in the Dunedin Multidisciplinary Health and Development Study, 45% of the men and 25% of women reported at least one physically abusive episode in the previous year. Most assaults on men were by strangers, whereas women were usually assaulted by their partner (Martin, Nada-Raja, Langley, 1998).

The New Zealand National Survey of Crime Victims found that 15.3% of surveyed women had 'ever' experienced some form of partner abuse, (Young, Morris, Cameron, Haslett, 1997) while a 1994 survey of 2000 New Zealand men showed that 55% had physically or psychologically abused their partner in the last year and 65% had abused their partner in their lifetime (Leibrich, Paulin & Ransom, 1995). In addition, The Otago Women's Health Survey reported that 16.2 % of

2000 women randomly selected from the electoral roll stated that they had been physically abused by their male partner; 25% of these women sought medical attention for their injuries (Mullen, Romans-Clarkson, Walton & Herbison, 1988).

Violence against women (VAW) is one of the foremost public health and human rights harms in the world today. It is a global occurrence, which cuts across boundaries of culture or class and which affects millions of women. Its severe detriment to the health and well being of women and their children forces us to act towards its prevention and eradication. New Zealand has the fifth highest rate of female murders in a survey of the top 25 industrialized nations conducted by Harvard University (Public Health Association of New Zealand, 2007). In a recent study that looked at women in the Auckland and Waikato regions researchers found that 33% of women in Auckland and 39% in Waikato had experienced at least one act of physical and/or sexual violence by an intimate partner (Fanslow & Robinson, 2004). Furthermore, an estimated 12% of psychological distress and 7% of serious physical illness in New Zealand women is attributable to family violence (Kazantzis, Flett, Long, MacDonald & Millar, 2000). The high prevalence of violence against men, women, and children is found worldwide (WHO, 2002). Globally, population-based studies suggest, that physical violence has an effect on between 10% and 25% of all adults (Wolf & Nayak, 2003). Women (22%) and men (7%) report encountering

intimate partner violence (IPV) during their adult lives (Tjaden & Thoennes, 2000).

Finkelhor, 1988 as cited in (Adams, Towns, & Gavey, 1995, p.1). stated, “there is increasingly wide consensus among policy makers and practitioners that we could be much more optimistic about the problem of family violence if we had more and better research into its causes and effects and our efforts to deal with them” In the Fanslow & Robinson study there was a high co-occurrence of physical and sexual violence, with 42.4% of those women who reported having experienced physical violence also reported having experienced sexual violence. About 5% of women reporting experiencing physical and/or sexual violence in the preceding 12 months. Additionally, victims of intimate partner violence were two times more likely to have visited a healthcare provider in the previous weeks (Fanslow & Robinson, 2004).

Research indicates that there are an alarming number of women in New Zealand who experience partner abuse and that these women are likely to use health care services. A further study conducted in a New Zealand emergency department, found that 44% of women reported experiencing partner violence at some time in their adulthood and 21% reported experiencing partner violence in the previous twelve months (Koziol-McLain, Gardiner, Batly, Rameka, Fyfe & Giddings, 2004). These data bear out the argument that rates of partner violence are higher amongst women presenting to health care services. The

exceptionally high occurrence of family violence and acuteness of injuries due to family violence give reason for worldwide screening in emergency departments. According to a report issued in November 1998 by the National Institute of Justice and the Centers for Disease Control and Prevention, women make 547,000 visits to the emergency department every year for treatment of injuries ensuing from physical assault in the United States (National Institute of Justice and Centers for Disease Control and Prevention, 1998).

The emergency department is a location where women who are at high risk of direct physical danger are likely to present. Of 4,448 women presenting in 10 emergency departments in two cities, Omaha and Kansas City, 37% reported that they had been abused by a partner at sometime, 10% reported they were presently in a battering relationship, and 4% said their current visit to the emergency department was for abuse by an intimate partner (Pakesier, Lenaghan & Muelleman, 1998). Of 3,455 women who completed surveys in 11 community emergency departments in Pennsylvania and California, 2.2% presented were there for severe trauma resulting from domestic violence, 14.4% had experienced domestic violence in the past year and 36.9% had been victims of domestic violence at some point in their lives (Dearwater, Coben, Nah, Glass, McLoughlin & Bekemeier, 1998).

Reports from studies show that about 25% - 30% of women will be subjected to IPV in her life (Lamberg, 2000; Wathen & MacMillan,

2003). In the U. S. A. approximately 1.8 million women are severely beaten by their intimate partners (Rennison, 2000). The National Centre for Disease Control and Prevention estimate that 5.3 million IPV victimizations occurred in one year. Also, conclusions from the WHO multi-country study on women's health and domestic violence reported lifetime prevalence of physical or sexual partner violence, or both, varied from 15% to 71%, with two countries having a prevalence of less than 25%, seven between 25% and 50%, and six between 50% and 75%. Between 4% and 54% of respondents accounted for physical or sexual partner violence, or both, in the past year. Men who were more controlling were more likely to be violent toward their partners (WHO, 2004).

## **EFFECTS OF FAMILY VIOLENCE**

Violence is a core problem with wide spread implications for health. Women who are abused are often treated in health-care systems, however, they commonly do not present with apparent trauma, even in accident and emergency departments (Dearwater, 1998).

According to a report by the U.S. National Institute of Justice and the Centers for Disease Control and Prevention (1998) women make 693,933 visits to the health care system per year as a result of injuries

due to physical assault. Intimate partner violence has long-term damaging health consequences for survivors, even after the abuse has ended (Campbell & Lewandowski, 1997). These effects can be visible or invisible as poor health status, poor quality of life, and high use of health services (Wisner, Gilmer, Saltzman & Zink 1999).

The injuries, fear, and stress related to intimate partner violence can result in chronic health problems such as chronic pain (example, headaches, back pain) or recurring central nervous system symptoms, including fainting and seizures (Coker, Smith, Bethea, King, & McKeown, 2000; Plichta, 1996). The exact means of such effects are unknown but could include repeated injury or stress, adaptation in neurophysiology, or both. For example, abused women frequently (10–44%) report choking (incomplete strangulation) and blows to the head resulting in loss of consciousness (Sharps, Campbell, Campbell, Gary, & Webster, 2001) both of which can lead to severe medical problems including neurological sequelae.

In a cross sectional New Zealand study by Fanslow and Robinson (2004), a comparison was made between women who had not experienced physical violence by a partner and women with a lifetime experience of moderate or harsh physical IPV. The women subjected to IPV were considerably more likely to have sought advice from a healthcare provider within the previous four weeks. Of these women, 75% had consulted a general practitioner, and 16% had consulted a

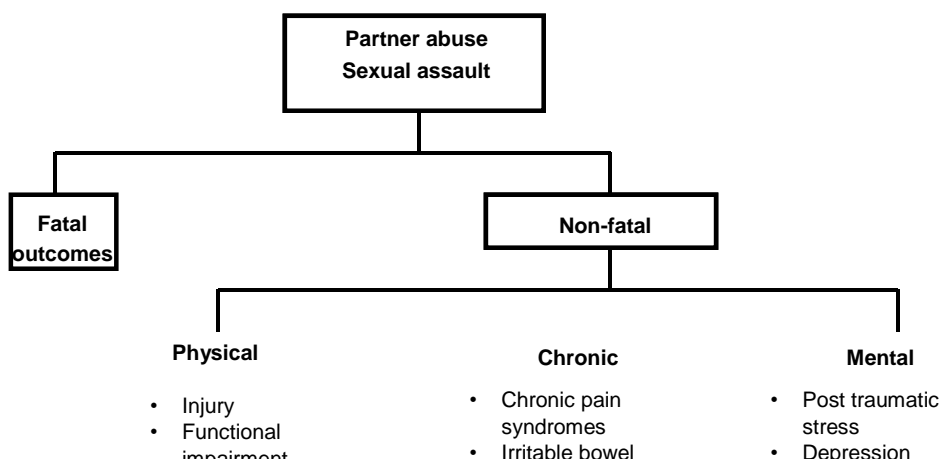
pharmacist. Within the Auckland area, women who had experienced harsh violence were more than twice as likely to have been in hospital within the previous 12 months compared with women who had not experienced any physical violence. In comparison with women who had not experienced physical violence by a partner, women who had experienced moderate physical violence were over 2.5 times more likely to report symptoms of emotional distress and suicidal thoughts in their lifetime, while women who had experienced harsh physical violence were almost 4 times more likely to report these effects. Suicide attempts were also frequent for those who had been subjected to physical IPV compared with those who had not.

As well as creating physical suffering for women, violence has had an overwhelming bearing on their psychological well being, their reproductive health and on the safety of their families and communities. The cost in human terms is colossal and it also has a financial component, as the following chart shows.

**FIGURE 1**

## **EFFECTS OF FAMILY VIOLENCE**

(Population Reports, 2001).



## **ECONOMIC COSTS**

Family violence also creates high personal costs for those affected persons and huge social and economic costs for our wider society (Ministry of Social Development 2002). Lessening violence in families, interpersonal relationships, schools and communities is one of the 13 priority population health objectives in the New Zealand Health Strategy and, therefore, a priority for District Health Boards (Ministry of Health, 2001a). The Snively's (1994) New Zealand study highlighted the economic cost of family violence which is between \$1.2 billion and \$5.3 billion annually. Estimates have been made based on a rate of family violence of one in seven, or even as high as, one in four families. These costs are broken down for the one in seven prevalence rate in table 2 below (Snively, 1994). For the other prevalence ratios, the only cost that will change very considerably is the total of individual costs. The direct



costs of police callouts, welfare involvement remain the same regardless of actual prevalence ratio.

*Table 1: Estimated cost of family violence*

<b>The Estimated Economic Cost of Family Violence to the Individual and the Government</b>			
Prevalence Excluded)	Rate	(Income Losses	
<b>Direct Cost to Individuals affected by Family Violence</b>			
Non reported			\$14,897
Reported by Snively study			\$383,673
<b>Total Cost to the Individual</b>			<b>\$398,570</b>
<b>Costs to the Government</b>			
Healthcare			\$140,721
Welfare			\$581,596
Justice			\$26,112

Law Enforcement	\$87,707
<b>Total Cost to the Government</b>	<b>\$836,136</b>
<b>Total Estimated Costs</b>	<b>\$1,234,706</b>

Data from Snively (1994).

### **Structure of the Dissertation**

Family violence as a health issue has been introduced in this chapter in the context of global, national and local awareness. Key issues have been drawn out of the contextual background to define the study's aims. The specific aims of the study, which is to emphasize the need to focus on the ICD coding of family violence, the impact of family violence and the health effects and economic costs have been highlighted. The rest of the dissertation unfolds in the following way.

Chapter two is a review of the literature focusing on the International Classification of Diseases, Tenth Revision (ICD-10) coding of family violence diagnosis. The ICD -10 codes for family violence are examined. Family violence namely, intimate partner violence is explored by examining statistics and surveillance. Furthermore, New Zealand's effort to reduce family violence is outlined.

Chapter three documents the study's research procedures. This includes the acknowledgment of the research question, the methodology

and study design. The sample, setting, and procedure will be discussed. Finally, ethical and cultural considerations will be acknowledged.

The findings of the research are explained in chapter four. The meaning and significance is also discussed. Conclusions are drawn about the research question and the limitations of the study are recognized. The implications for education, practice and future research will be examined.

## **CHAPTER 2**

### **Literature Search**

The literature search revealed numerous articles that discussed family violence, intimate partner violence and child abuse including the effects on physical and mental health issues. Relevant studies covering ICD coding and family violence were identified from multiple searches of MEDLINE (1966 to December 2006), PsycINFO (1984 to February 2006) and CINAHL (1982 to Present). Additional articles were obtained by reviewing reference lists of pertinent studies. Studies included in this review had English-language abstracts. The internet was also searched for publications from such agencies as the WHO, the US Center for Disease Control and Prevention (CDC) the Australian & New Zealand Domestic and Family Violence Clearinghouses, The Family Violence Prevention Fund, the New Zealand Ministry of Health, the New Zealand Ministry of Social Policy & Development and the New Zealand District Health Board. Search terms used were family violence (FV), domestic violence (DV), battered women, spouse abuse, child abuse, elder abuse, ICD Coding, Health Documentation, Clinical Coding. However, I could find little literature on diagnostic coding specifically related to family

violence. There have been articles by Rudman (2000) which discuss coding of domestic violence and by Waller et al (2000) that evaluates coding systems. In New Zealand there has been a few studies using ICD coding within the area of injury. These studies have been undertaken by Langley and the Injury Prevention Research Unit. Given the lack of international and national research, on ICD 10 coding, within the area of family violence I believe that this research is needed to capture and help identify family violence and alert health care workers to the possibility of future family abuse. Therefore the review looks separately at:

- ICD
- Family violence in ICD
- Family violence

## **LITERATURE REVIEW**

### **Introduction**

Chapter one has introduced the concept of family violence internationally and nationally in conjunction with its prevalence and impact on society and healthcare. This chapter focuses on the history of ICD coding of diagnosis of diseases and the exploration of codes being utilized for family violence in New Zealand. The coding process is summarized. Following this the literature is explored to identify family

violence frequencies to health care services and surveillance and monitoring systems.

### **ICD Coding**

The illnesses, diseases and injuries endured by hospital patients are at present recorded using the International Classification of Diseases, Tenth Revision (ICD-10), which is published by the World Health Organization (WHO). Information concerning patient's diagnosis is recorded in their notes by the clinician taking care of them. This is coded into ICD-10 codes by a clinical coder. This means that it is possible to choose and contrast conditions consistently, across the world wherever ICD-10 is used (Hospital Episode Statistics, 2007).

### **What are ICD-10 codes?**

ICD-10 codes consist of a single letter followed by three or more digits, with a decimal point between the second and third. As there are several thousands of distinctions at the 4-character level (where all three digits are used) it is general practice to summarize at the 3-character level. ICD-10 was approved by the Forty-third World Health Assembly in May 1990 and came into use in WHO Member States from 1994. The classification is current in a sequence which has its birth in the 1850s. The first edition, documented as the International List of Causes of Death, was implemented by the International Statistical Institute in

1893. WHO took over the accountability for the ICD at its creation in 1948 when the Sixth Revision, which integrated causes of morbidity for the first time, was published (WHO, 2007).

The ICD has developed into the international standard diagnostic classification for wide-ranging epidemiological and copious health management purposes. This includes the examination of the general health circumstances of population groups and monitoring of the incidence and prevalence of diseases and other health problems in relation to other variables, such as the characteristics and conditions of the individuals affected. It is used to classify diseases and other health problems recorded on many types of health and important records including death certificates and hospital records. In addition to allowing the storage and retrieval of diagnostic information for clinical and epidemiological use, these records also supply the foundation for the collection of national mortality and morbidity statistics by WHO Member States (WHO, 2007).

The 'chief diagnosis' describes the condition accountable for admission of the patient to the hospital. The secondary diagnosis refers to all conditions that coexist at the time of admission that have an effect on treatment of the patient for the current episode (Australian Coding Standards, 2002). Healthcare providers should always use the most specific of these codes. In the ICD-10, in cases of suspected adult/child abuse or 'child at risk' admissions where there are no current injuries or

conditions related to the maltreatment documented, a code from category T74 Maltreatment syndromes is assigned as principal diagnosis (Australian Coding Standards, 2002). Clear documentation of intimate partner violence by health care providers and accurate coding by hospital information managers contributes to a clearer understanding of the prevalence and epidemiology of this health issue, which will be expanded on later within this dissertation (Rudman, 2001).

### **New Zealand and ICD Code**

In 1995, Australia put into operation an Australian classification system known as the Australian ICD-9-AM (International Classification of Diseases and Related Health Problems, Australian Modification). This system was founded on the American ICD-9-CM classification system. In 1998, the Australian ICD-9-CM system was replaced with an Australian modified ICD-10-AM classification system. This system is structurally based on the ICD - 10 World Health Organisation Classification System. As with all classification systems, ICD-10-AM make possible the translation of diagnosis and procedures and other health problems from language into an alphanumeric code. New Zealand hospitals use the clinical coding classification developed by the World Health Organization and modified by the National Centre for Classification in Health (NCCH) in Australia. Australia has a comprehensively resourced process for updating the clinical coding and grouping classification every two years to



reproduce new medical techniques, diseases and particular areas of interest. New Zealand hospitals use the coding books produced by NCCH (hard copy and e-books), the training materials for clinical coders from the Health Information Association of Australia (HIMAA), NCCH training courses, Australian developed encoder software, mapping tables, grouper software, audit software and cost weight methodology (MOH,2005).

Traditionally New Zealand has been at least one ICD version behind Australia. The proposal is that New Zealand move forward to be in line with Australia. Australia currently upgrades every two years and is currently using ICD-10-AM, 4<sup>th</sup> edition. Upgrading every two years is not feasible for New Zealand because of the costs and resources required for each upgrade. Currently New Zealand is using ICD-10-AM, 3<sup>rd</sup> edition, Australian Refined Diagnosis-Related Groups (AR-DRG 5.0) and Weighted Inlier Equivalent Separations (WIES 11B). The proposed plan for New Zealand is;

- to upgrade the coding classification, grouper and cost weights to ICD-10-AM 6<sup>th</sup> edition, AR-DRG 7.0 and WIES 13, from 1 July 2008 (to be confirmed).
- to make following changes every 4 years omitting the interim Australian version update (MOH, 2005)

***Table 2 INTERNATIONAL CLASSIFICATION OF DISEASE CODES FOR FAMILY VIOLENCE.***

<b><u>FAMILY VIOLENCE CODES</u></b>	<b><u>REFERENCE</u></b>
X85 to Y09	Assault
Y06	Neglect and Abandonment
Y07	Other maltreatment Syndromes
Y0000	Assault with a blunt object by spouse or partner
T741	Physical abuse
T742	Sexual abuse

**The 5<sup>th</sup> digit character subdivisions for the perpetrator:**

0	spouse
1	parent
2	other family members
3	carer

---

#### **HISTORY CODES**

#### **REFERENCE**

Z918	History of abuse
Z618. Z614 and Z615	history of sexual abuse in childhood with family/ non family perpetrator distinctions accounting for code differences
Z616	History of physical abuse in childhood
Z616	Counseling for those affected by child abuse other than the victim.
Z630	Counseling/treatment for those other than the victim
Z637	Counseling/treatment for relatives or friends of victim

Australian Coding Standards, (2000).

#### **Coding Process**

The patient path starts when the patient arrives at the hospital and is assessed by the triage nurse, at which time a chief diagnosis is given based on presentation. The clerk then admits the patient on this presenting diagnosis. Following admission, based on the physician's admitting diagnosis and the information produced by the original workup, the patient undergoes diagnostic tests and procedures and/or other treatment, as planned by the medical staff. The patient and medical staff members continue to meet throughout the hospital stay to exchange information and to carry out additional tests, procedures, and treatments

that may be considered. Test and procedure results are added to the medical record. The results from the tests and procedures often affect changes in the admitting diagnosis. Furthermore, complications arising from care may also add to the list of diagnoses. The staff documents the hospital stay using either handwritten or electronic reporting.

Upon discharge, the physician completes a narrative discharge summary that includes a list of primary and secondary diagnoses (word labels) and describes follow-up plans. Upon discharge, the patient's medical record and all associated documentation are transferred to the medical record or health information management department. At the same time, technicians check to ensure that all medical record information is precise and complete (including the face sheet, history and physical, operative reports, radiology reports, physician's orders, progress and nursing notes, consultations, discharge summary, etc.). Coders then begin the process of classifying documentation, including diagnoses and procedures, using rigid ICD coding guidelines and conventions. After reviewing all pertinent medical record information, medical coders assign a code for the principal diagnosis, defined by the Uniform Hospital Discharge Data Set (UHDDS) as "that condition established after study to be chiefly responsible for occasioning the admission of the patient to the hospital care" (Uniform Hospital Discharge Data Set 1992).

The principal diagnosis assignment is made based on written documentation from the providers. Coders also allocate a code for the principal procedure, or one performed for definitive treatment or that was necessary for treating a complication. They assign additional diagnostic codes for diagnoses that require clinical evaluation, therapeutic interventions, diagnostic procedures, extended lengths of stay (for inpatient stays), or increased nursing care and/or monitoring. Coders may also assign Z-codes, codes describing conditions that coexist during a patient's stay that influence the stay, such as history of abuse. After the code assignments and the sequencing of the codes have been determined, a computerized software program, called a grouper, is used to classify or group the codes for reimbursement purposes. When the coding process is complete, the codes are transmitted to the billing department for reimbursement purposes.

Another coding system that is used in conjunction with ICD codes is the DRG system. Assigning a Diagnosis Related Group (DRG) is a process whereby occurrence of care is categorized by both a clinical homogeneity and a similar hospital resource use. A DRG is allocated to every record loaded into the National Minimum Dataset (NMDS). This allocation is based on numerous variables relating to the incident together with the diagnosis and procedures that are reported using the clinical coding classification. DRGs are used for clinical analysis and epidemiological studies, and are the basis of the calculation used to

assign a cost weight (the current payment mechanism for inpatient and day cases which are within the casemix). The software used to assist with assigning clinical codes is called an encoder (3M Codefinder). The DRG version and software need to be upgraded to align with the coding classification (ICD-10-AM) for ideal implementation. An alternative is to map coded data to that version used by the DRG grouper, however this does have implications in losing specificity and completeness of the original coded data (MOH, 2005).

## **Surveillance**

The World Report on Violence and Health states that: “Until recently the responsibility for remedying or containing violence in most modern societies fell on the judicial system, police and correctional services...” (Krug, et al, 2002, p.245). However, the report also states that: “Public health officials can do much... to prevent violence... The data at the disposal of public health and other agencies ... and... the dedication to effective responses are important assets that the field of public health brings to the global response to violence” (Krug, et al, 2002, p19). Injury prevention is a particular field of public health that addresses injury as a population health issue. Injury prevention professionals use a set of methodical principles, based on public health theory and practice, to decrease the impact of injury on the health of the population (The

National Committee for Injury Prevention and Control, 1989; Vimpani, 1989).

Family violence can result in injury. Therefore, the principles of injury prevention are related to family violence and, if applied, could predictably reduce the health impact of this issue (MacDonald, 2002). However, as the 'World Health Report on Violence and Health' notes, family violence-related injury, has not, until recently, been regarded as an appropriate area of work for injury prevention professionals (Krug, et al, 2002, p245). A standard approximation of the number of presentations to hospitals emergency departments' due to family violence would provide valuable information on the burden that this issue imposes on the population and the health care system of New Zealand.

The goals of family violence surveillance are to attain an approximation of the number of people who are affected by family violence and to depict the uniqueness of people affected, the number and types of family violence incidents, the related injuries, and other consequences (Thacker, 2000). Nevertheless, the large number of cases in which manifold forms of violence co-occur and the repetitive nature of family violence mean that such a substitute may be less accurate than is desired. To obtain more precise approximation of the number of people affected by family violence, eventually we will need to widen some system for linking data, both within and across diverse data sources, through the use of unique identifiers.

The main principle of surveillance is to present information for action. Information provided by frequent surveillance reports enables effective monitoring of rates and distribution of disease, detection of outbreaks, monitoring of interventions, and forecasting emerging hazards.

Surveillance begins with the significance of the problem, determining how big it is, and monitoring trends overtime. Characteristically, a public surveillance system is developed with the ability to collect, evaluate, and distribute data in a timely fashion for use in prevention and control activities (Thacker, 2000). Doing this does not merely involve just adding up cases. It entails receiving information on the demographic characteristics of the persons concerned, the chronological and geographic uniqueness of the incident, the victim-perpetrator relationship, and the gravity and cost of related injuries. Analyzing data about prevalence and trends gives a picture of the primary patterns that help characterize the problem. At present it is very challenging to obtain a precise measurement of the incidence or prevalence of any form of family violence in New Zealand. New Zealand has highlighted the need for the establishment of a synchronized database to record demographic information and statistics on family violence (New Zealand Family Violence Clearinghouse, 2006). The following are areas where family violence surveillance is monitored over time:



- Police statistics
- Court statistics
- National Criminal Victimization Survey (NZ)
- CYF (Child, Youth and Family) Reports

The public health arena presents a guide in its approach to measuring problems, and to assessing trends in consequences. This has been done at district, nationwide, and international levels. Lately, the public health advance has moved away from a more customary focus on infectious diseases and public health and now commonly approaches violence as a public health problem (Saltzman, 2004). While CYF, police and justice conduct family violence surveillance hospital admission has been largely ignored.

### **New Zealand Family Violence Initiatives**

The Families Commission was established under the Families Commission Act 2003 and commenced operations on 1 July 2004. Under the Crown Entities Act 2004, the Commission is designated as an autonomous Crown entity. The Commission's perspective on violence is to act as an advocate for the interests of families (Fanslow, 2005). Family violence is at present receiving an unprecedented level of attention within New Zealand. In 2005 both a Ministerial Team on family violence and a taskforce for action on violence within families have been recognized. An open hearing into the prevention of violence against women and children

has been held, and a workshop on family violence linking ministers, public officials, non-government organizations and others has been organized (Fanslow, 2005).

Furthermore, Family violence has been acknowledged as one of five government priorities (Ministry of Social Development 2004a). New Zealand's task toward reducing violence has been documented in terms of the international human rights framework, the international policy framework and the New Zealand legislative and policy framework (New Zealand Parliamentarians' Group on Population and Development 2005). These labors signify the most recent sign of a long history of activism around violence, now documented as a global health problem (Krug, et al, 2002), and a basic threat to human rights (UNIFEM 2003; UNICEF 2004).

Numerous surveillance systems are present that offer data on the incidence of family violence and the characteristics of the victims of family violence, but health surveillance is little used. The three primary categories that exists are:

- (a) medical record based systems including ICD coding
- (b) state-based reporting systems and
- (c) government or large surveys.

There is a potential for health to participate in family violence surveillance.

## **Summary**

Chapter two has reviewed the literature on ICD -10 coding of diagnosis of diseases and its history. The use of the Australian ICD -10 AM disease coding system within the New Zealand health care is discussed. This was followed by outlining the assault codes used for family violence under ICD-10 AM codes. The coding process was explained and family violence was further discussed. The chapter was concluded by addressing and discussing surveillance and monitoring.

## **CHAPTER THREE**

### **METHODOLOGY AND METHODS**

#### **Research Question**

1. What is the frequency and type of family violence coding being used under ICD coding in the DHB.

2. Are family violence codes being used?

## **Methodology**

To answer the research question the positivist assumptions and principles have been applied to underpin the research approach. The positivist approach relies mainly on experiments, surveys and secondary data analysis, and therefore on numerical analysis rather than on verbal descriptions. This approach operates on strict rules of logic, truth, general principles, and predictions (Gillis & Jackson, 2001). Furthermore, Grant and Giddings (2000) state that within a positivist paradigm there is a need for knowledge to be discovered, which allows people to explain and predict events. When the facts are found by use of experimental and non-experimental methodologies they constitute a body of knowledge. This knowledge guides professional decision making and practice. Positivists are in agreement with Carlo Lastrucci's (1967, as cited in Gilles & Jackson, 2001 p. 6) definition of science as "... an objective, logical, and systematic method of analysis of phenomena, devised to permit the accumulation of the reliable knowledge" (as cited in Gilles & Jackson, 2001). An objective approach is designed to minimize bias, is impersonal, and seeks its authority in fact, not opinion. A logical approach uses deductive rules, and a systematic approach is consistently organized and makes use of techniques such as statistical analysis. Finally, reliable

knowledge refers to knowledge one can count on, knowledge that allows one to predict outcomes accurately”

## **METHODS**

### **Design**

This study utilized a descriptive, quantitative design to examine ICD coding of family violence within a New Zealand District Health Board over a three year period using data that was retrieved from an electronic report of discharges for all women aged 15 to 74 years for whom a family violence ICD-10 discharge code was designated. The identified descriptive data was extracted from the District Health Board’s International Classification of Diseases ICD-10-AM, 3<sup>rd</sup> edition, AR-DRG 5.0 and WIES 11B.

### **Setting**

The estimated resident population of New Zealand was 4.17 million at 31 December 2006. The population under 15 years is 874, 300; 15–64 years 2,771,300; 65 years and over 519,900, (Statistics NZ, 2006). In terms of healthcare provision, New Zealand has undergone a number of changes in the last decade and is now using a community-oriented model organized across 21 District Health Board responsible for providing, or funding health and disability services in their districts.

District Health Boards are responsible for both the provision of healthcare services to a geographically defined population and the

running of acute hospital services (MOH, 2007). The governance of the DHB is provided by a board of directors that is comprised of appointed members and elected community members. The District Health Board is divided into two parts, both of which are administered by the board of directors. The funder division is responsible for funding the delivery of health services, for example general practitioners, laboratories, radiology centres, private hospitals and rest homes and independent midwives. The provider division administers the public health component, including acute care hospitals. It is this division that provides the setting for this study.

Waitemata District Health Board is the largest secondary healthcare provider in New Zealand. It funds and provides \$960 million a year of health services to a multicultural population of approximately 500,000 residents of North Shore City, Waitakere City and Rodney District. It has inpatient beds as well as a variety of community based services. These are:

***North Shore Hospital*** - A 24 hour 7 day per week hospital service including emergency, Intensive Care Unit, inpatient and outpatient facilities, surgical services, medical services, maternity, services for older people, diagnostic services.

***Waitakere Hospital*** - A 24 hour 7 day per week hospital service including maternity, rehabilitation services for older people, day surgery, medical and surgical outpatients, some diagnostic services.

***Mental Health*** - A 24 hour 7 day per week service including two general inpatient (acute) psychiatric units based on the North Shore and Waitakere Hospital sites, outpatient psychiatric services, child and adolescent services, maternal mental health services. The DHB also supplies regional alcohol and drug services for the Auckland region and psychiatric forensic services for Auckland and Northland regions. (Waitemata District Health Board Information, 2007).

Yearly, 70,700 people visit the North Shore and Waitakere hospital's emergency care centers resulting in 22,400 admissions. 35,700 people receive acute medical and surgical treatment, 7,000 people receive scheduled elective surgery, 17,200 clients are seen by mental health services, 700 people die in hospital and 6,300 babies are born (Waitemata District Health Board, 2007).

## **Sample**

The data set covered the period 30<sup>th</sup> June 2004 to 1<sup>st</sup> July 2007. Female patients aged 15 -74 admitted as inpatients, as well as patients seen at the emergency department and were in emergency for over three hours and discharged without admission were included. It does not include patients who were seen in an outpatient clinic. The partner

violence variable was organized by ICD coding. ICD codes for family violence are as per (Table 2) in Chapter 2

*Table 3 Variables*

Variables of Interest	Description
Age Group / Females	15-74
Specialties	Example emergency, medical, surgical, mental health
Location of Discharge	Ward / Emergency Care
Discharge Destination	Home/death/ another facility
Sum of Length of stay	Number of days as inpatient
Ethnicity	Example Pakeha, Maori, Chinese, Pacific Islander, Indian, Other
ICD Codes	Family violence admissions only - X85 to Y09,06, Y07,



	Y0000,T741,T742, Z914,915,916,918,Z630,637
Domicile Group	North Shore
Admission Source	Emergency Department  Mental health unit

### **Exclusion Criteria**

The study does not include female patients who were seen in an outpatient clinic or the community setting which is served by the Waitemata District Health Board. Other family violence such as child abuse and elder abuse were not included in this study. Females under the age of 15 years and over the age of 74 years will not be included in this study as they are not the target age group of the study as child abuse and elder abuse has not been included within the study.

### **Coding Procedure**

As stated in chapter two, coding also referred to as clinical coding or disease coding, comprises the allocation of a code for every pertinent diagnosis/condition/disorder/health status and a code for each relevant procedure and treatment that a patient encounters during their inpatient stay. These codes are obtained from the ICD-10-AM classification system, as outlined in chapter two. In the coding process, the Health Information Manager (HIM) reviews the contents of the

medical record pertaining to the inpatient stay. From the medical record the conditions and procedures the patient encounters are transformed into the representative ICD-10-AM alphanumeric characters. These alphanumeric characters are documented within the medical record and entered into the computerised hospital management system. (Royal Womens Hospital, 2007).

Waitemata District Health Board healthcare teams make available a written narrative of every patient encounter in the medical record. Most of the medical records are paper-based, however all discharge summaries are computer generated detailing the reason for the visit: This includes the following:

- Diagnoses
- Primary Diagnosis
- Secondary Diagnosis
- Clinical Management
- Radiology results
- Discharge Medications
- Relevant Results
- Advice to GP
- Discharging Hospital Information
- Clinician

Upon discharge of the patient the discharge summary is sent to the clinical coding department.

From my discussion with a senior coder within the DHB I found that coders begin the process of classifying documentation, including diagnosis and procedures using rigid ICD coding guidelines and standards. The principal diagnosis is made based on the discharge summary of the examining clinician. An apt example would be as the follows:

‘A woman is seen in the Emergency Department after her partner hurls a plate at her across the dining room table and hits her in the forehead when he became angry that his meal was not prepared. She states that he is often violent and becomes physically abusive after he has had a few drinks’ (Rudman, 2000). The diagnoses listed in the medical record are battered woman and laceration of the right eyebrow.

This episode of family violence would be coded as:

S010.....Open wound of eyebrow

T741.....Physical abuse (battered spouse)

Y0000.....Assault with a blunt object, spouse or partner

Y9209.....At home (place of occurrence)

U739.....Unspecified activity (at time she was assaulted, although further investigation of the record may show she was cooking dinner at the time)

If the health care provider has failed to document the incidence of family violence, or failed to include information about the history of the abuse or who perpetrated it when this is the case, it is impossible for coding personnel to apply the adult abuse code.

### **Data Abstraction**

Data was extracted from WDHB's SQL data warehouse "Reporting data". This data warehouse is a copy of production data and it is updated nightly. The tool used to extract the data requested was Microsoft Excel. Data were exported from the ICD-10 Am for the period 30<sup>th</sup> June 2004 to 1<sup>st</sup> July 2007 inclusive by DHB IT personnel. The total admissions was collected as the denominator, and family violence admissions as the numerator.

### **Reliability and Validity**

***Reliability*** - refers to the "consistency, stability, and repeatability of data collection instrument" (Wood & Ross-Kerr, 2006, p. 207). To ensure reliability of coding the DHB employs a team of accredited clinical coders. The coders follow specific guidelines from The ICD-10-AM classification system which has numerous coding standards. These standards provide specific definitions and directives on correct coding techniques. When allocating ICD-10-AM codes, coders must follow all the coding standards. New Zealand hospitals use the coding books produced by National

Centre for Classification in Health (NCCH) hard copy and e-books, 3M Codefinder software, National Centre for Classification in Health (NCCH) training courses, grouper software, mapping tables, audit software, cost weight methodology and coding courses provided by Health Information Association of Australia (HIMAA) education services (NZHIS, 2007).

The New Zealand Coding Authority (NZCA) is a group of expert coders nominated from DHBs, Private Hospitals and Independent Contractors who collaboratively and cooperatively resolve coding queries and coding related issues which assist in the (MOH, 2007) collection of consistent, complete and accurate health data.. Observance to the Australian Coding Standards promotes coding consistency, coding quality and directs clinical coders to practice sound coding conventions which are comparable at a national and international level.

Coders are supported by The Health Information Association of New Zealand (HIANZ). There is also a helpdesk facility provided by the New Zealand Health Information Services for coding queries and decisions when needed. There is also a double checking process by coders who ensure that the electronic and hard copy reports match. Eventually, all inconsistencies are corrected at the time of coding in consultation with the data base administrator.

Performance Indicators for Coding Quality (PICQ) is an ICD-10-AM code analysis tool that is used to monitor, measure and evaluate

coding quality and to facilitate improvement in coding quality (National Centre for Classification in Health, 2007). Also at the end of each day all information coded by coders within the District Health Board is relayed to the Ministry of Health who picks up any alerts in coding. This is then sent back to coding office and discrepancy is corrected.

**Validity** - Refers to the “extent to which a measure reflects a concept, reflecting neither more nor less than what is implied by the definition of the concept” (Gillis & Jackson, 2001, p. 427). While one can never be completely sure that a survey accurately measures what it attempts to measure, one can be reasonably certain that concepts are being effectively measured. The assumption of interest in this study was based on ICD coding of family violence within healthcare. The variables that were selected was limited to the electronic collection, thereby limiting content validity.

## **Data Analysis**

The data analysis procedure used was a standardized descriptive method of frequency counts of abuse coding in one District Health Board. Admission of all female admissions was used as the denominator. The variables of significance used were age, specialty, length of stay, ethnicity, count of encounter, location of discharge, admission source, discharge destination, domicile group and abuse code

to focus on the study's purpose. A rate of family violence admission was collected over the three year study period as the numerator. Data analysis was performed on SPSS for windows (PC version 14.0) A full statistical analysis followed, using SPSS and imported into Excel data sheets for graphing.

The unit analysis is hospital admissions and some females may be in the database more than once. Based on an assumption of significant under reporting of statistics(see pg 38) bivariate analysis was not used. The point was not to over analyze data at this stage. However, to maintain real-world usability of these research findings, descriptive statistics are most often provided in terms of absolute number of responses, percentages and means. Percentages may not add to 100 percent due to rounding. Data is presented in tables and graphs.

### **Ethical Considerations**

The primary raw data remains as the property of the Waitamata District Health Board. The working data file will be kept for a period of seven years. Auckland University of Technology will be held accountable for retaining storage of the data file which does not contain any identifiers. Data was abstracted from SQL data warehouse "Reporting data". Patients were not individually recognized neither was data taken from original medical records. There was no direct contact with any individual that had been diagnosed with a family violence ICD code. For

the purpose of the research only the researcher and supervisor have had access to the electronic data extracted. The results of this research will be used as a basis for quality improvement initiatives to identify family violence and assist the promotion of informed clinical advice based on evidence. New data can help us work toward sound evidence-based clinical guidelines that can be authorized by health care experts at a national level. The results of the research will be made available to the DHB. The DHB has given audit/observational approval for this research proposal (see Appendix 1). Ethical consent from Health and Disability Ethics Committee was not a requirement for this study.

### **Socio-cultural Reflection**

The Maori Health Team of the DHB was consulted prior to the commencement of the study. They were made aware that this study collected data pertaining to ethnicity and that the inclusion of this as a variable was within the scale of this study. Thus this study has made distinctions between family violence involving those from diverse cultural or ethnic groups. It has been agreed that upon completion of the study, the results would be disseminated to and discussed with the Maori Health Team.

### **Summary**



This chapter has summarized the study design and documented how the research question was addressed. The fourth chapter will use descriptive analysis to present the findings of the research project.

## **Chapter Four**

### **Results**

The purpose of this study was to document the rate of family violence coding for adult (15-74 years) female admissions within one New Zealand District Health Board over a three year period (2005-2007). The 'numerator' included the admissions with one or more family violence ICD-10 codes. The 'denominator' included all admissions. The reader is reminded that unless otherwise noted, the unit of analysis (for both numerator and denominator) was admission rather than individual. This means that women could have more than one admission during the study

period. Following presentation of the family violence rate, characteristics of the family violence coded admissions are presented.

### **Family violence admission rate**

For the three year study period there were 76,188 admissions of women 15 to 74 years of age within the District Health Board (see Table 5). Between 2005 and 2006 admissions increased by 2,429 and between 2006 and 2007 admissions increased by 1,903 admissions. Over the three–year study period, admissions increased by 18.7%. The majority of admissions (70%) were among women 15 to 44 years of age.

*Table 4. District Health Board Admissions of Women 15-74 years*

<b>AGE GROUP</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>TOTAL</b>	
	Frequency	Frequency	Frequency	Frequency	Percent
15-44 years	16367	17884	19000	53251	69.9
45-64 years	6444	7299	8084	21807	28.6
65-74 years	338	395	397	1130	1.5

Total	23149	25578	27481	76188	
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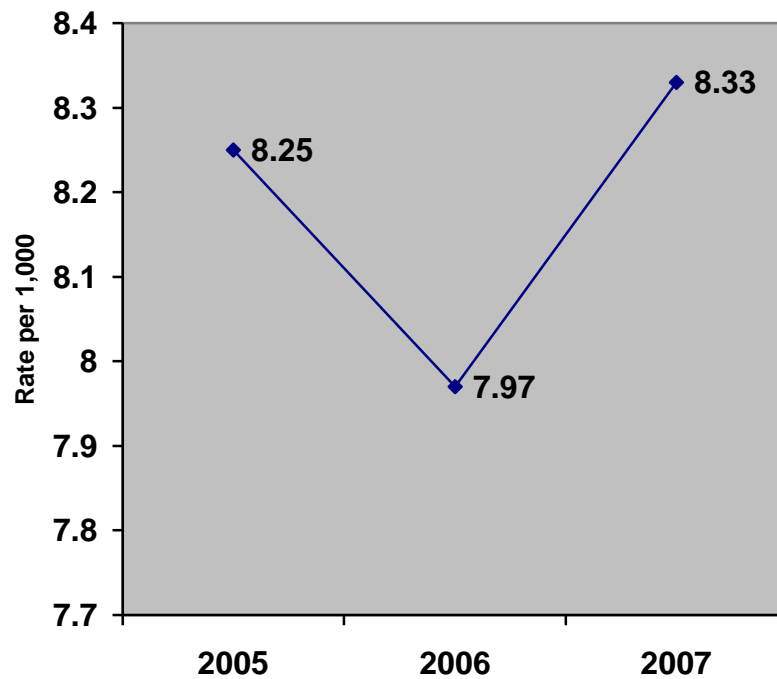
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uring the study period, 624 admissions included one or more family violence ICD-10 codes (see Table 6). Family violence coded admissions increased from 191 in 2005, to 204 in 2006, to 229 in 2007, an increase of 19.8% over the study period. The majority (82%) of family violence coded admissions were among women 15 to 44 years of age (see Table 5).

*(Table 5). District Health Board ICD -10 family violence coded Admissions of Women 15-74 years*

AGE GROUP	2005	2006	2007
	Frequency	Frequency	Frequency
15-44 years	156	179	176
45-64 years	32	25	51
65-74 years	3	0	1
Total	191	204	229

The rate of family violence coded admissions ranged from 8.0 to 8.3 per 1,000 admissions of the three year study period (see Figure 2). The overall rate of family violence coded admissions was 8.19 per 1,000 admissions. The rate per age group varied by 3.5 % - 9.6 %.



Figure

## 2. *Rate of Family Violence Coded Admissions Among Women 15-74 years of age Over Time*

### **Characteristics of family violence coded admissions**

As shown in Table 6, the majority of admissions with a family violence code were related to either assault (49.4%), or problems related to abuse (47.9%).

Table 6. Admission Family Violence Codes (2005 – 2007)(N=624)

ICD-10 CODE	Description	Number	Percent
T74	Maltreatment Syndromes  Physical abuse (11)  Sexual abuse (5)  Psychological abuse (1)	17	3 %
X85  5 <sup>th</sup> digit  Y00 Y01 Y02 Y03 Y04 Y05 Y06 Y07 Y08 Y09	Assault (308)  <ul style="list-style-type: none"> <li>(includes assault by drugs (7))</li> </ul> <ul style="list-style-type: none"> <li>Spouse or domestic partner (7)</li> <li>Parent (2)</li> <li>Other family member (18)</li> <li>Carer (1)</li> <li>Acquaintance or friend (10)</li> <li>Official authorities (1)</li> <li>Person unknown to victim (5)</li> <li>Multiple persons unknown to victim (4)</li> <li>Other specified person (6)</li> <li>Unspecified person (7)</li> </ul>	308	49.4%
Z614 - Z918  Z630 Z637	Problems related to abuse:  <ul style="list-style-type: none"> <li>child (13)</li> <li>Other childhood traumas (10)</li> <li>Problems in relationship (216)</li> <li>Traumatic life events (37)</li> <li>Personal history of sexual abuse (23)</li> </ul>	299	47.9%

As shown in Table 7, the emergency department accounted for the majority (54%) of family violence coded admissions, followed by acute adult mental health services (21%). The majority of admissions were from home (94%). New Zealand European and Pakeha, were identified as the majority group that was discharged with a family violence code.

Table 7

Admitting Characteristic for Family Violence Admissions (N=623).

	No.	%
<b>ADMITTING SPECIALITY</b>		
Emergency Medicine	337	54.40
Acute Adult Mental Health (ICU & IP)	131	21.00
General Medicine	41	6.60
Gynecology	25	4.00
Antenatal	20	3.20
General Surgery	18	2.90
CADS (community alcohol and drug services)	16	2.60
Delivery	16	2.60
Orthopedic	13	2.10
Intensive Medicine	3	0.50
<b>ETHNICITY</b>		
	355	57.00
NZ European/ Pakeha	149	24.00
NZ Maori	35	5.60
Asian	35	5.60
Pacific Islander	31	5.00
Other	18	2.80
Indian		
<b>ADMISSION SOURCE *</b>		
Home	526	94.09
Other	65	10.40
Mental Health	23	4.12
North Shore Hospital	6	1.07
Waitakere Hospital	4	0.72
<b>DOMICILE GROUP</b>		
North Shore Lower	200	32.05
North Shore Upper	151	24.20
New Inner West	92	1.50
Other	72	1.15
North West Outer	33	0.50
Auckland Central	32	0.50
North West Upper	24	0.40

\*Admission source was missing for one frequency for Specialty

The discharge destination findings (see Table 8) showed that the majority (49%) of family violence coded admissions resulted in hospital lengths of stay less than 24 hours and 45% for 1 – 10 days as inpatients. The majority of victims (76%) of violence were discharged home. Some went on to continued care in the community or to another non mental health care facility. A small number went to a mental health care facility and others to private hospital or general hospital.

*Table 8*

*Discharge Characteristic for Family Violence Admissions (N=623).*

	No.	%
<b>LENGTH OF STAY *</b>		
0 days	305	49.00
1 – 4 days	233	37.00
5 -10 days	46	7.00
11 -20 days	17	2.68
21 – 30 days	11	3.00
31 – 40 days	6	0.97
41 – 50 days	2	0.35
<b>TOTAL</b>	<b>620</b>	<b>100</b>
<b>DISCHARGE DESTINATION **</b>		
Routine/ Usual residence	471	75.60
MH-Community Care	86	13.80
To another facility (non MH)	53	8.51
MH – Transfer to further MH care	9	1.45
General Hospital	3	0.48
Private Maternity Care	1	0.16
<b>TOTAL</b>	<b>623</b>	<b>100</b>

*\* Length of Stay was missing for one admission*

*\*\*Discharge Destination was missing for four admissions*

The discharge destination variable findings (see Table 9) showed that the majority of the victims (n= 471) of violence were



discharged home. Some went on to continued care in the community setting or to another non mental health facility, which includes a temporary place of residence. A small number went to a mental health care facility and others to private hospital or general hospital.

Finally, to appreciate that some women may be accounted for in the data more than once, admissions related to 'problems in relationship with spouse/boyfriend' (code Z630) were examined (see Table 9).

*Table 9 Code Z 630 Problems in Relationship with Spouse/Boyfriend*

<b>YEAR</b>	<b>Women with <math>\geq 1</math> FV Admission</b>	<b>Total Number of Admissions</b>
2005	62	71
2006	61	69
2007	70	76

In this chapter, the frequency of family violence codes documented within the discharge dataset of the District Health Board has been presented. The following chapter will include the study conclusions,

the strengths and limitations and recommendations for policy, practice and research.

## **Chapter Five**

### **Discussion**

## **Introduction**

The purpose of this research was to determine the rate and frequency of family violence ICD -10 coding in the acute health care system among women 15 – 74 years of age admitted within one District Health Board. The study has found the rate of family violence coded admissions ranged from 8.0 to 8.3 per 1,000 admissions of the three year study period. The overall rate of family violence coded admissions was 8.19 per 1,000 admissions. Family violence was documented in 624 of 76,188 admissions, representing less than 1% of all admissions. There is, therefore, a considerable difference between the rate of family violence evidenced in the District Health Board's ICD -10 coding data and rate of family violence reported across numerous New Zealand studies. Based on the New Zealand National Survey of Crime Victims, 15.3% of surveyed women had 'ever' experienced some form of partner abuse (Young, et al. 1997). In the Auckland and Waikato regions researchers found that 33% of women in Auckland and 39% in Waikato had experienced at least one act of physical and/or sexual violence by an intimate partner (Fanslow & Robinson, 2004). An estimated 12% of psychological distress and 7% of serious physical illness in New Zealand women is attributable to family violence (Kazantzis, et al, 2000).

The gross under reporting of family violence in this study may be attributed to a failure in practice or coding processes. For ICD coding

to be a reliable indicator of family violence among women in the acute health care system the following need to be present to arrive at the correct ICD-10 code: family violence screening (ask the question), clear and concise clinical documentation and sharp coding skills. These three will be examined in detail.

## **Screening**

Health professionals are frequently conscious that many of their patients could be victims of violence, but may not have the time, confidence, or belief that it is a legitimate health complaint (Bacchus, Mezel & Bewley, 2003; McCauley et al, 1998; Rodriguez et al, 2001). One of the chief problems facing health care documentation and coding of family violence today is that health care professionals are not taking the time to ask patients questions concerning their social environment. Health care professionals frequently feel time pressures, do not want to invade an individual's privacy, think that they do not know what to do if the individual discloses abuse, and may think that health care professionals cannot make a difference anyway (Rodriguez, Bauer, McLoughlin, & Grumbach, 1999).

It has been reported that only 10% of physicians routinely screen for intimate partner abuse during new patient visits and 9% screen during periodic checkups. The only time physicians consistently asked about intimate partner abuse was in cases that involved physical

injuries, 79% reported asking questions (Stark, 2000). The healthcare management services that have ratified a few standard questions linked to partner violence in a confidential screening have shown an obvious rise in disclosure and identification of cases of partner violence (Griffen & Koss, 2002)

Recognizing low rates of family violence acknowledgment, investigators have researched barriers to screening. Larkin and colleagues (Larkin, Hyman, Mathias, D' Amico and Macleod, 1999) identified patient and provider factors for female emergency department patients via a random medical chart review of 1,638 records where almost a third (29.5%) were screened for IPV. Screening varied with severity of the woman's condition, type of presenting complaint, and time of day. Women with non-psychiatric, less acute complaints and women coming for care during daylight hours were more likely to be screened than women who presented with psychiatric, more acute complaints, or during the night.

One of the most important things health care professionals can do to address family violence and increase coding is to ask all women about violence. Universal screening is encouraged as a move toward increasing identification partially because no demographic profile or pattern of injuries or clinical illness consistently identifies women affected by family violence (Walton & Campbell, 2002). Most abused and non-abused women support universal screening. In the study by (Glass et al,

2001), it was found that less than 25% of women were asked about IPV by the ED staff. Women presenting with acute trauma from abuse had higher (39%) screening rates compared to women reporting prior-year abuse (13%). Women reporting current abuse, however, were less likely to support routine screening (80% vs 89%), although the vast majority did. In contrast, in Gielen and colleague's study (2000), abused women were 1.5 times more likely than women without abuse to agree with universal screening.

If screening occurs on a consistent basis, there is the possibility of increased documentation and hopefully subsequent coding. Also, screening results need to be identified and integrated into the coding system. To support the family violence assessment and screening some health systems are using chart reminders. The following chart reminder is an assessment tool included in the patient nursing assessment within the emergency care area of the studied District Health Board (Figure 3).

Figure 3 : Sample Family violence Documentation Cue

<p style="text-align: center;"><b><u>SVF Y N D   REF: Y N   PT: YN</u></b></p> <p>SFV: screened for family violence</p> <p>Y = Yes asked but no disclosure</p> <p>N = Not asked</p> <p>D = Asked and disclosure made</p>
--

Ref: referral made to WDHB

Y = yes referral made

N = no not made or declined

Pt : is the woman our client

Y = Yes woman is our client

N = No, woman is main care giver of a child client

## **Documentation**

Accurate documentation depends on clinician readiness to deal with the needs of the victim of family violence. Such documentation follows careful observation combined with sensitive interviewing techniques.

Unless correct and complete documentation of an incidence of care is documented in the medical chart, the record of that encounter may be lost forever. Patient care could be compromised due to lack of communication among providers, and the patient would not have an opportunity to review her “history” with the provider and thus explain the progressive patterns of threats that are the hallmarks of family violence.

Documentation should be comprehensive and should include the following items as stated by Rudman (2000).

1. A description of the history of abuse: including the details of the present injury or illness, past medical history, sexual history including documenting any sexual assault, history of sexually transmitted diseases, medication history, and relevant social history.
2. Specifics about the abusive incident (if the patient reports a discrete incident): who inflicted the abuse, the perpetrator's conduct, the health impact on victim (injuries and other medical issues), if the perpetrator uses alcohol and drugs, and if there are weapons, particularly firearms, present.
3. Physical examination findings related to abuse, using a body map and photographs if available to supplement written descriptions.
4. Use of the patient's own words, in quotes, along with factually descriptive language.
5. Results of any laboratory and other diagnostic procedures.
6. Assessment and documentation of information pertaining to suicide or homicide risk, and potential for serious harm or injury.
7. Documentation of any police reports or orders of protection, if available.
8. Options discussed and referrals offered.



## 9. Plans for follow-up and other discharge information

### **Coding**

Coders can only code a diagnosis or procedure that is well documented. Coding skills are divided into basic and advanced. Basic skills are learned, and advanced skills are acquired through experience, as discussed with a senior DHB coder. Basic skills involve knowing what, where, how, and when to code. Advanced coding skills are developed by experience, that is, the countless hours spent perusing medical records, and understanding all the nuances and myriad of clinical scenarios - in effect, understanding the underpinnings of the official coding guidelines. Accurate documentation reduces gray areas in coding. It pre-empts misinterpretation and creative (assumptive) coding.

Medical record documentation encompasses notations from physicians, nurses, and other health care practitioners, as well as results of diagnostic and therapeutic procedures. ICD -10 codes are only applied to diagnoses that are shown to have clinical significance as documented by the physician. In spite of the barriers surrounding identification and coding of family violence, complete and accurate coding for hospitalized family violence holds the promise for enlightening community understanding of the impact of family violence. At the least, the recommendation is that the studied DHB continues to monitor the rate of family violence coding, as an available measure to monitor the outcomes of policies planned to improve the screening and surveillance of family

violence. Furthermore, local information, even in partial forms, may help justify funding levels and policy reforms that support improved surveillance, and effective interventions for connections between screening and documentation and coding.

### **Study Strengths and Limitations**

The major limitation of this study was the reliance on the electronic reports and not having compared the electronic results with paper based reports of family violence events reported within the District Health Board. It has been established that the electronic patient record has not yet fully substituted the paper-based one. Rather, electronic documentation usually is used in addition to residual paper-based records (Strausberg, et al, 2003). Although the family violence rates found in this study under-estimate the frequency of family violence within the population covered by the District Health Board, they do indicate the presence of family violence coding within the population. The results have relied on coding of diagnosis from documentation of medical staff. It has been stated that practitioner's concerns about a patient's experience of violence is not always recorded in the patient's notes.

Another limitation of this study was the exclusion of chart review for evidence of screening for family violence. Screening recently has become mandatory in several services within the DHB and within the DHB emergency departments at present. It is unknown whether

screening is documented, but not translated into a medical diagnosis that would be coded. Furthermore, family violence related to children, elders and men were not included in this study (as discussed in chapter 3).

A major strength of this study is that it gives an indication of family violence codes that are being used within the District Health Board. Also, it raises awareness for health information personnel to use appropriate ICD-10 codes for family violence as the data collected as a result of proper coding facilitates the promotion of informed clinical recommendations based on evidence. New data can assist us work toward constructive evidence-based clinical guidelines that can be authorized by health care experts at a national level.

### **Recommendations for policy**

The long term aim of examining family violence frequency and rates is to prevent violent events from occurring, by placing initiatives into care and practice such as the recently launched Violence Intervention Programme (<http://www.moh.govt.nz/familyviolence>). Policy changes need to be implemented that help health care professionals identify and help victims of violence, in ways that do not threaten the safety or confidentiality of the patient (Centers for Disease Control and Prevention, 2002). The DHB needs to ensure that clear protocols for identifying and treating family assault victims are in place in the facility. This will also serve the purpose of public health planning, policy development and

change. The Ministry of Health and other government agencies presently invest many resources in services for family violence. It is crucial to determine the effectiveness of these programs and policies in preventing victimization and its consequences.

There is a need to support health information personnel to utilize current ICD-10 codes for family violence. Also, to build in administrative supports that encourages appropriate coding and documentation of family violence by addressing time constraints and by incorporating documentation and coding issues into quality assurance protocols. Creating these organizational responses to family violence will improve data collection and further develop our awareness of the impact of family violence on health systems and patients' health outcomes. Lastly, data made available through proper documentation and coding may validate better services and allocation of new resources.

### **Recommendations for practice**

Nursing and other health care professions can be crucial in the struggle to recognize, intervene in and reduce family violence. One of the most important things health professionals can do to address family violence is to ask all women about violence, then intervene and document. Improved training of nurses and other health care

professionals about family violence is required within undergraduate training, practice, and continuing education. Research has clearly demonstrated that education is lacking, and this deficit contributes to the failure of nurses and other health care professionals to screen for and adequately respond to family violence (Tilden et al., 1994; McGrath, Hogan, and Peipert, 1998). An experimental study demonstrated that training increased emergency department nurses' identification of battered women (Tilden et al, 1987). Nevertheless, staff training needs to be accompanied by administrative assistance, inclusion of screening questions on assessment forms, and changes in system and culture to achieve lasting improvement in health care response (Glass, et al, 2001; Dearwater et al, 1998). As screening takes place, hopefully coding will follow.

Health care professionals in all settings must consider routine screening for abuse as a standard of care. While universal health care screening for family violence is recommended by most health care organizations, it is most effectively implemented in facilities that have a recognized institution-wide commitment to the practice and wide-ranging protocols that outline assessment as well as intervention strategies (Draucker, 2002). With input from stakeholders, health care professionals should persist to support, design, and evaluate prevention and intervention programs that are multi-disciplinary, innovative, and culturally specific. Coordinated response programs, that are collaborative

community-wide endeavors involving multiple agencies charged with family violence prevention and intervention, seem to hold the most promise (Thomas, 1995).

### **Recommendations for research**

There is a need to have chart-database comparison studies. This would include medical record reviews to establish the validity of hospital abstract data compared with the patient record across multiple hospitals. They would help researchers to characterize the importance of reporting and coding bias in studies using administrative healthcare data.

Further research could look at comparing ICD-10 family violence rate and frequency among the other District Health Boards that service the Auckland region. This study result can then be compared to them

### **Conclusion**

As most people visit health care settings at some point in their lives, health care providers are in a leading position to recognize family violence early and contribute in intervention and prevention efforts. The health effects of family violence will provide us with information that shows that family violence can be a multifaceted and time-consuming health problem, worthy of financial and administrative support to ensure an appropriate response. There is also a critical need to educate Health Information Professionals and create concrete administrative

reinforcements for using existing family violence codes suitably. Proper codification would promote the collection of more accurate data regarding the impact of family violence on patients' health status, and the impact of family violence on health systems. Administrative and policy changes have the potential to increase screening and intervention in health care settings. These improvements will generate opportunities for prevention and new prospects for recognizing victims not currently receiving help through family violence agencies. In order to do so, health care providers and health information managers must be included in educational and policy reform efforts in the struggle against domestic violence.

Violence in the family is the concern of all members of society. Understanding the issues, engaging in policy debate, supporting community programs, and improving the assessment, intervention and documentation skills of healthcare and other service providers, will help create a safer life for today's families and a better future for the next generations.

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## Appendix A



Knowledge Centre Registration No.

KC 254

### Audit/Observational Study Application Form

Please print

Name of staff undertaking the clinical audit:

Diane Raju

Title of audit/observational study:

Examining ICD – 10 coding for family violence in a NZ DHB

Location:

WDHB supervised by Jane Koziel-McLain Assoc Prof of Trauma Research - AUT

**\*\*Attach summary of Project Proposal**

#### APPROVAL PROCESS

##### Clinical Records

- D/W Manager Clinical Records Coding Yes ☐ No ☐

Approved..... Date.....

(where required)

- The number and time line of clinical records to be pulled is reasonable Yes ☐ No ☐
- There is space in the reading room for the staff to review the data Yes ☐ No ☐

Manager Dianne Pike Approved..... Date.....

##### WDHB / Service Implications.

- Review of resource requirements / availability: ..... Yes ☐ No ☐

D/W Family Violence Coordinator

- Will staff be required to assist? Purpose and cost implications reviewed. Yes ☐ No ☐

- Expected service costs (document where required).....

##### WDHB Clinical Audit/Observational Study Approval.

- Appropriate confidentiality provisions have been planned for. Yes ☐ No ☐

The researcher is a nurse employed in the Emergency Dept of WDHB

No personal patient data will be accessed only ICD-10 codes

- The audit/observational study has merit. Yes ☐ No ☐

The significance of this study is to discover the need for coding of family violence in NZ as a public health surveillance initiative

- The audit results will be made available to WDHB clinical staff to consider implications for quality improvement Yes ☐ No ☐

- Cultural consultation undertaken (where appropriate) Yes ☐ No ☐

Not Required – audit of ICD-10 codes only

- Registered with Knowledge Centre Yes ☐ No ☐

(please send copy of completed WDHB form now)

- Will an Expedited Application form be submitted to Health and Disability Ethics Committee?

(if YES please send a copy of application to Knowledge Centre)

No

Please sign and date

Clinical Director - .....

Nurse Manager - Alison Bowden (where appropriate)

## APPENDIX B

## APPENDIX A

### Data Dictionary for examining ICD Family Violence Codes

### APPENDIX B

	<u>Variable</u>	<u>Definition</u>	<u>Data Source</u>	<u>Possible Reading</u>	<u>Comments</u>
1	Age	The age at the time of discharge during the study period	Patient Management Database  Field: Date of birth (ddmmyy)	1. >14 2. < 74	Age will be selected for this range
2	Gender	The gender of the victim	Patient Management Database	Female	Gender field is included in the Database
3	Specialties	Health problem classification group	Database  Field: Text	1. Medical 2. Surgical 3. Mental health 4. Emergency 5. Orthopedic 6. Gynaecology	Will require abstracting by the researcher from a text field
4	Ethnicity	a distinct group by common cultural, behavioural or biological traits	Patient Management Database	1. Culture 2. Ancestry	Will require abstracting by the researcher from a text field
5	Length of Stay	Number of days as inpatient	Patient Management Database	1. Days 2. Weeks 3. Months	Will require abstracting by the researcher from a text field
6	Domicile Group	Area of Residence	Patient Management Database	Auckland/ North Shore suburbs	Will require abstracting by the researcher from a text field
7	Discharge	when a patient leaves a hospital after her medical treatment is completed	Patient Management Database  Field: Text	Patient Discharge Summary	Will require abstracting by the researcher from a text field

## APPENDIX B (cont)

### Data Dictionary for examining ICD Family Violence Codes

	<u>Variable</u>	<u>Definition</u>	<u>Data Source</u>	<u>Possible Reading</u>	<u>Comments</u>
8	Discharge method	Area patient sent to on leaving hospital	Patient Management Database  Field: Text	1. Home 2. Mental health unit 3. Community care 4. Own residence	Will require abstracting by the researcher from a text field
9	Admission Souce	Health care facility where patient presented or transferred	Patient Management Database  Field: Text	1. North Shore hospital 2. Waitakere hospital.	Will require abstracting by the researcher from a text field
10	International classification of diseases	a systematic categorization of morbid entities to which conditions are assigned in accordance with established criteria	Patient Management Database  Field: Text	1. Australian Coding Standards 2. World Health Organization 3. ICD – 10 AM 3 <sup>rd</sup> edition	Will require abstracting by the researcher from a text field
11	Abuse codes	hospital discharge data coded using ICD-10 cause codes	Patient Management Database	1. Australian Coding Standards 2. World Health Organization 3. ICD – 10 AM 3 <sup>rd</sup> edition	Will require abstracting by the researcher from a text field

