Suicide in Mental Health & Addictions Services 1999 - 2007

Calgary Health Region

Iris Penwarden, Risk Management Coordinator
Donna Rutherford, Evaluation Assistant
Dr. Michael Trew, Medical Director

December 2007 Report

REPORT ON SUICIDE IN MENTAL HEALTH AND ADDICTIONS SERVICES
CALGARY HEALTH REGION
1999-2007
Iris Penwarden*, RN, Donna Rutherford, B.Sc., Michael Trew*, MD, FRCPC

BACKGROUND INTRODUCTION

A formal Review is undertaken by Mental Health & Addiction Services (MH&A) for every suicide of a mental health patient in active treatment, within 30 days of discharge of treatment, and, within 72 hours of Psychiatric assessment in Emergency Department.

Purpose of Reviews: The authors* coordinate and chair Reviews in which the involved team(s) review the patient's history and course of treatment. The Review is a confidential, Quality Assurance activity whose purpose is not to attribute blame but to consider care, system and process issues, as well as to develop recommendations for improvement. An additional integral component of the review process is the identification of communication and follow-up with the survivors, including family, co-patient groups, staff and physicians.

Composition of Review "teams": Each Review is attended by those team members who were involved in the patient's care as well as team managers, clinical, medical and operational administrative leaders; the physician chair and MH&A risk management coordinator. When more than one team has been involved, every effort is made to include multiple teams. Involved clinicians are expected to attend the Review; feedback has indicated that participants find it helpful both individually and as a team.

Outcomes: During the fiscal years 1999 – 2007, Reviews of 109 suicides in MH were undertaken. Approximately 25 % of the Reviews generated recommendations to improve care processes and or service delivery. Service teams are involved in identifying the recommendations which are taken to MH&A Clinical Safety Committee and Mental Health & Addictions Executive Management Team for approval. Once accountability for implementation of recommendations is established, both the MH&A and NE Portfolio Clinical Safety Committees monitor recommendation-related activities. Any recommendations can be made public following approval by the MH&A Executive Management Team and NE Portfolio Clinical Safety Committee.

Example of a recommendation:
"It is recommended that a mechanism be undertaken to determine existing telephone follow-up practices in Outpatient and Community MH&A Services for clients who cancel or fail to appear for appointments."
Implementation: In January 2007, a survey with four questions was circulated to 21 managers of 40 urban and rural Outpatient and Community MH&A Services.
Findings: 97% make follow-up calls to high risk clients; 95% phone high risk clients twice, many have back up plans using Calgary Police Service or Mobile Response Team. 72% phone low risk clients. Some services identified treatment approaches that involve clients taking personal responsibility for attending appointments and participating in care.
Results: 1) MH&A Operations discussed the need for all clinics to have a clear procedure for responding to clients who cancel or fail to appear for appointments. 2) Treatment agreements which stress client accountability for involvement in care need to be written for the client and documented on the health record. Clinic brochures and informational pamphlets can also contain this information.

DATA BASE DEVELOPMENT

To augment Quality Assurance and Improvement activities associated with the Reviews, and to permit monitoring of overall trends that can effect clinical practice, an electronic data base was designed to house data collected on suicides in the MH&A patient population of Calgary Health Region (CHR). Deaths in which suicidal intention is not clear – for example, those deemed accidental, unintentional or probable suicide, are excluded from the data base. (Cause of death is usually confirmed by the Medical Examiner and may be augmented by notes left by the patient as well as conversations with the family.)

METHOD

Use of a form with standard indicators at each Review permits the concurrent collection of data. Prompt data entry allows for annual, cumulative trending of information. Suicides in MH&A have been tracked over the eight years between 1999 and 2007; allowing both fiscal and calendar year trending Ten clinical risk factors, as well as DSMIV diagnoses, age, gender, method & month of death, marital & employment status and culture are included. The data base notes the MH programs involved, transition times between services and time of last clinical contact. Survivor follow-up is another important factor noted.

OBJECTIVE and LIMITATIONS

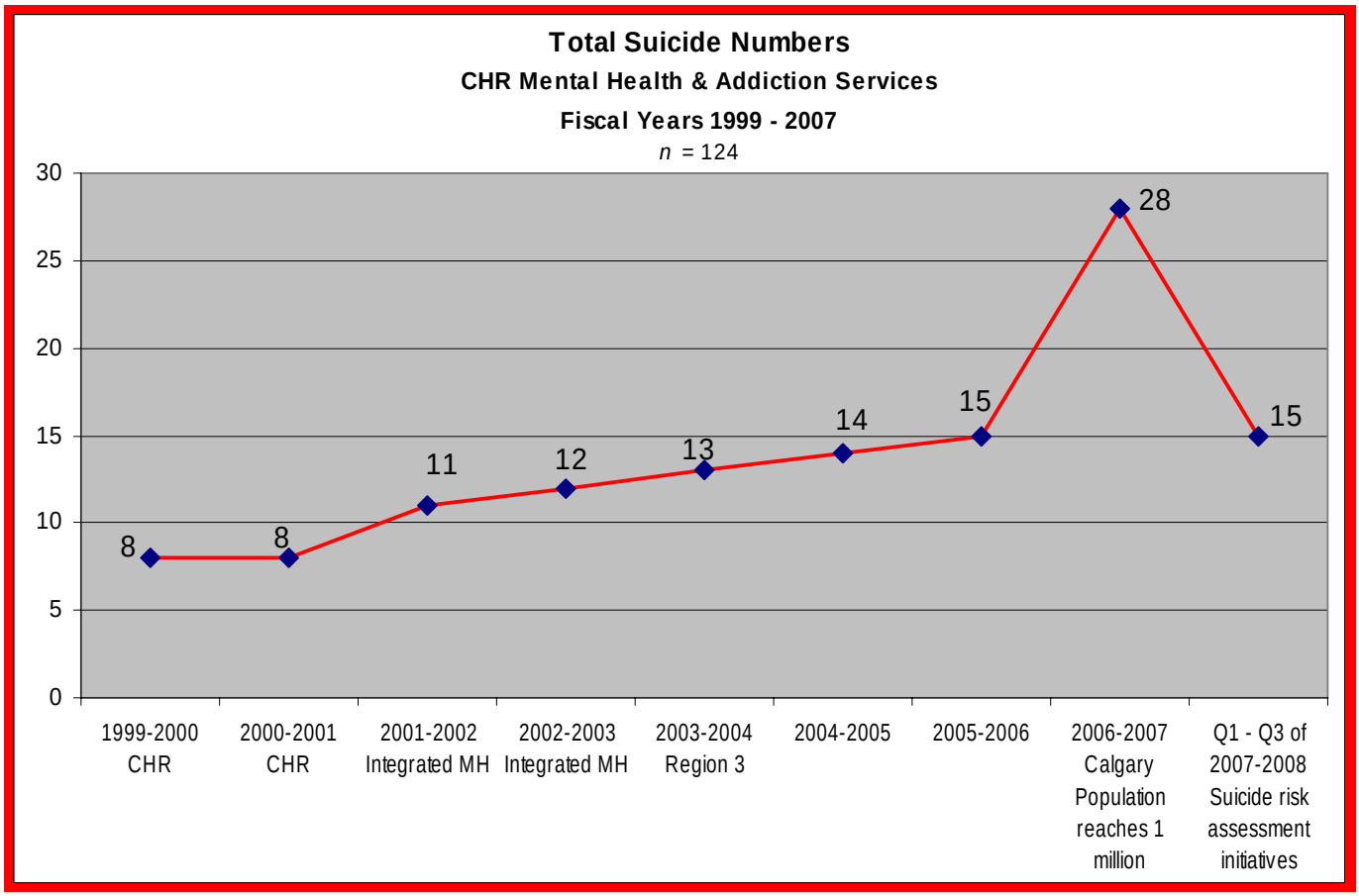
Our objective is to make this information accessible to MH&A clinicians and use the findings to inform clinical practice. Data analysis, population statistics and review of current suicide literature enables us to identify differences and similarities in the profile of completed suicide within Mental Health & Addictions as compared with that in the literature and in the general population.

One limitation relates to comparisons with Provincial data: this is limited to the time of the latest reports from the Medical Examiner's Office and these are published 3-4 years later than our data. In addition, because of the conservative timelines of our Reviews (suicides occurring while in MH treatment or within 30 days of discharge), and the fact that we do not include accidental or unintentional suicides in the data collection, we recognize that we do not account, in this data report, for all deaths by suicide in Mental Health patients.

FINDINGS

Incidence:

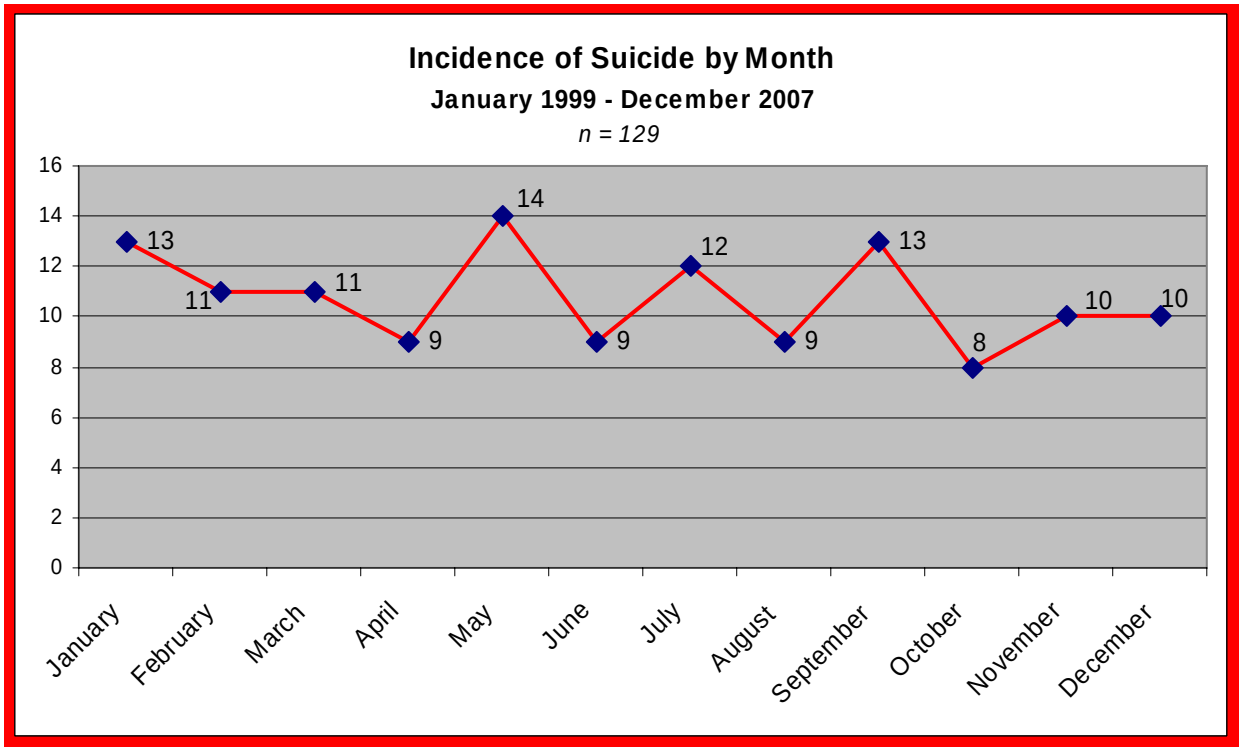
The graph below shows the incidence of suicide by mental health clients in relation to changes in capacity, catchment area and population served by CHR Mental Health and Addictions Services.



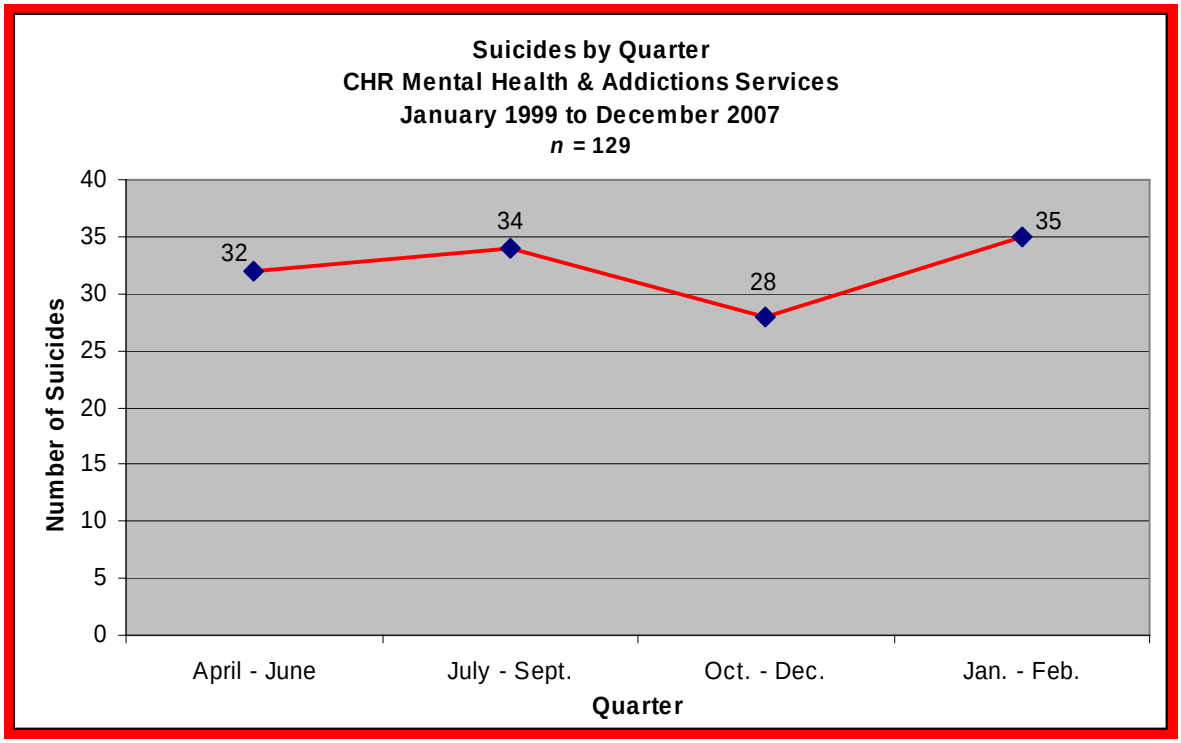
The integration of CHR Mental Health and Alberta Mental Health Board, as well as the geographic expansion of Region 3 to rural South and North, was followed by many enhancements in mental health service capacity within the Calgary Health Region over the period 2002 to 2007. These included two Adult Inpatient Units, the Short Stay Unit, additional Young Adult beds, expanded Crisis, Outreach, Community, Primary, Shared MH Care and the South Calgary Health Centre. Growth Funding initiatives also supported expansion of services - for instance, Aboriginal MH and Child and Youth programs.

Timing:

The timing of suicides is examined to see if there are seasonal trends. Seasonal patterns were suggested by previous suicide-by-month graphs, but are less evident (see graph below) as overall numbers increase. January, May and September have slightly higher incidence. (Provincial data from 2004 revealed higher numbers in June –August).



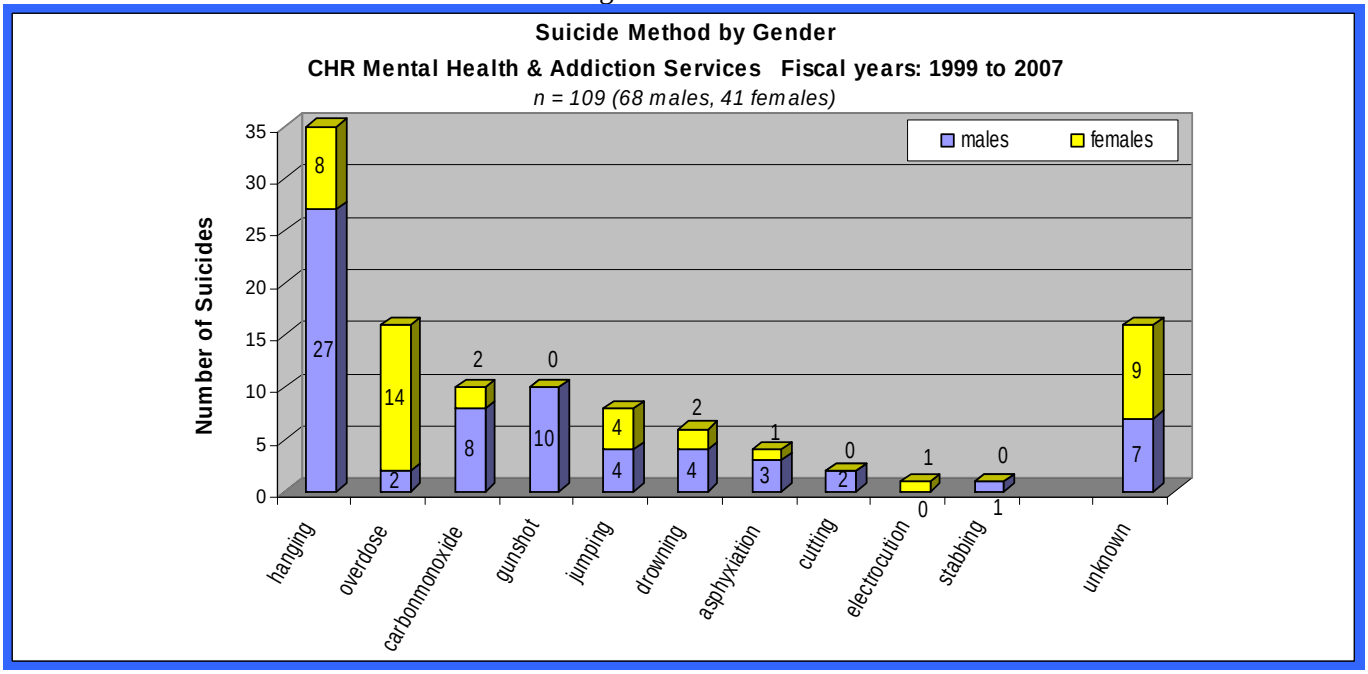
Previously, the highest numbers of suicides occurred in the second quarter. With increased numbers over the years, peaks are less evident, but mid- to late-fall (the third quarter) appears to have a lower incidence of suicide deaths.



Methods of Suicide:

As shown below, hanging was the most common method of suicide for males (40%). Gunshot and carbon monoxide poisoning in males occurred 15% and 12% respectively. Overdose was the most commonly chosen method for females (34%). Twenty percent of females died by hanging. Overall, firearms account for 9% of suicide deaths in Mental Health.

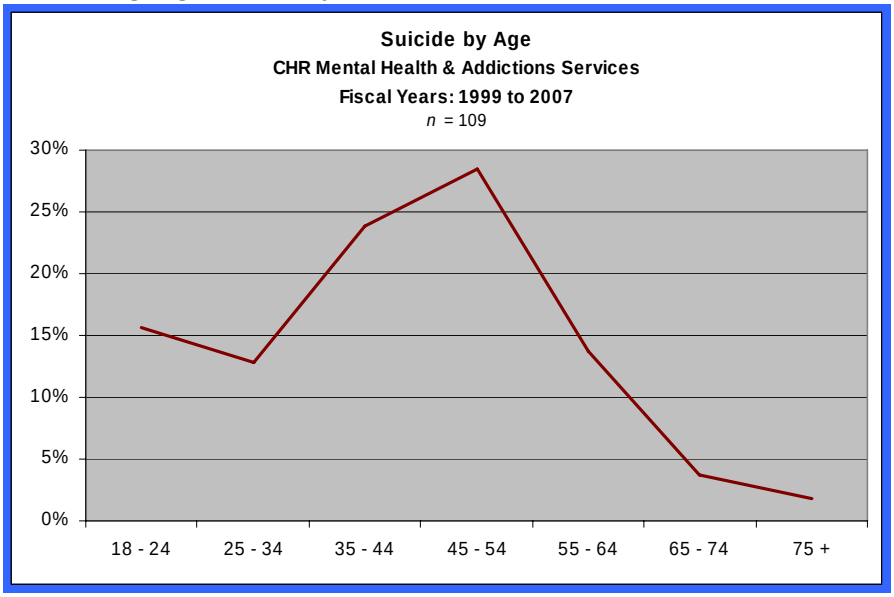
Clinicians help modify suicide risk factors by reducing access to lethal means. One recognized intervention is the practice of limiting the quantities of medication prescribed in a single supply. Another is the practice of discussing access to and removal of firearms with those at heightened risk for suicide.



The most recent published data available from the Alberta Chief Medical Examiner (2003) indicates hanging is the most common method of suicide throughout Alberta, with death by overdose second and firearms, third most common.

Demographics:

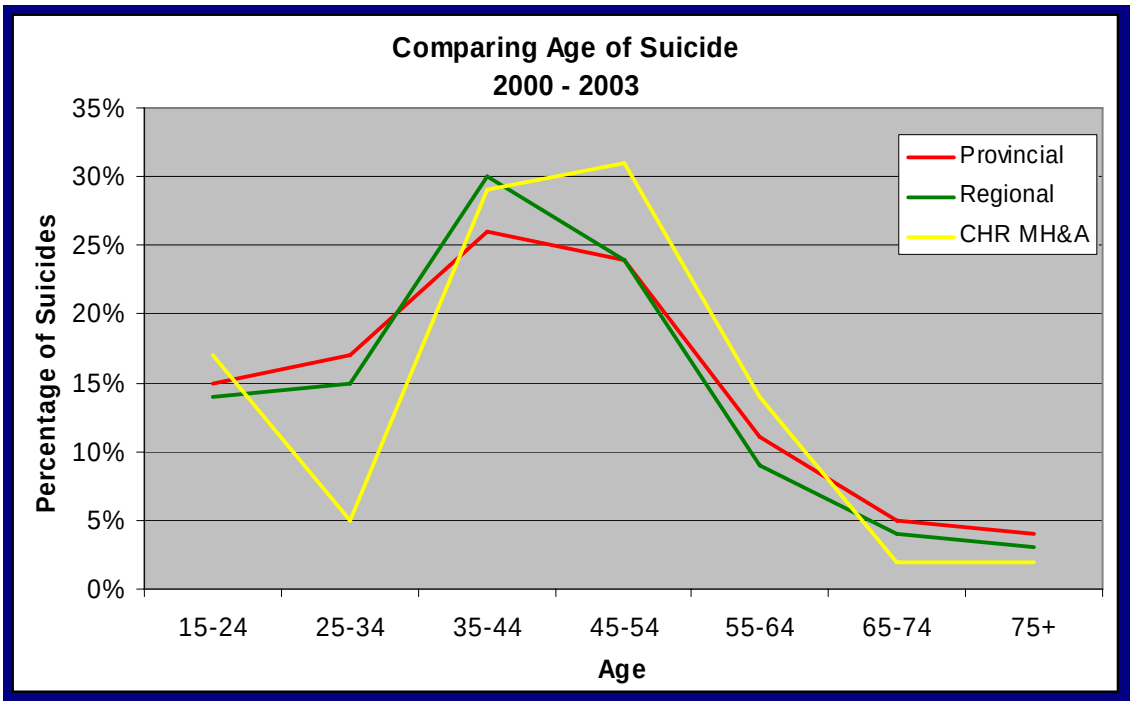
Age: Of mental health clients served by the Calgary Health Region, those in the age range of 35 to 54 years appear to account for the highest numbers of suicide – 52% of those who died from suicide in the last 8 years were in this age range. The average age was 42.4 years.



Mean age: 42.4 years
Standard deviation: 14.93 years
Youngest: 15 years
Oldest: 84 years

Comparisons to published provincial data show spikes in suicide numbers in the 35-44 age group. Though numbers decrease somewhat in the province and region after age 44, they peak at ages 45-54 within CHR Mental Health & Addictions.

The most startling discrepancy is in the 25-34 age range, where suicide numbers in the Mental Health population fall below the pattern seen in the Province and the Region as a whole.



Source: www.justice.gov.ab.ca/publications *2000 – 2003 data, Revised 2005.*

Gender: Over the period 1999 – 2007, 68 men and 41 women died by suicide, a ratio of 1.7 to 1.0. In comparison, provincial and national rates for suicide are at least 3 to 1 for males to females.

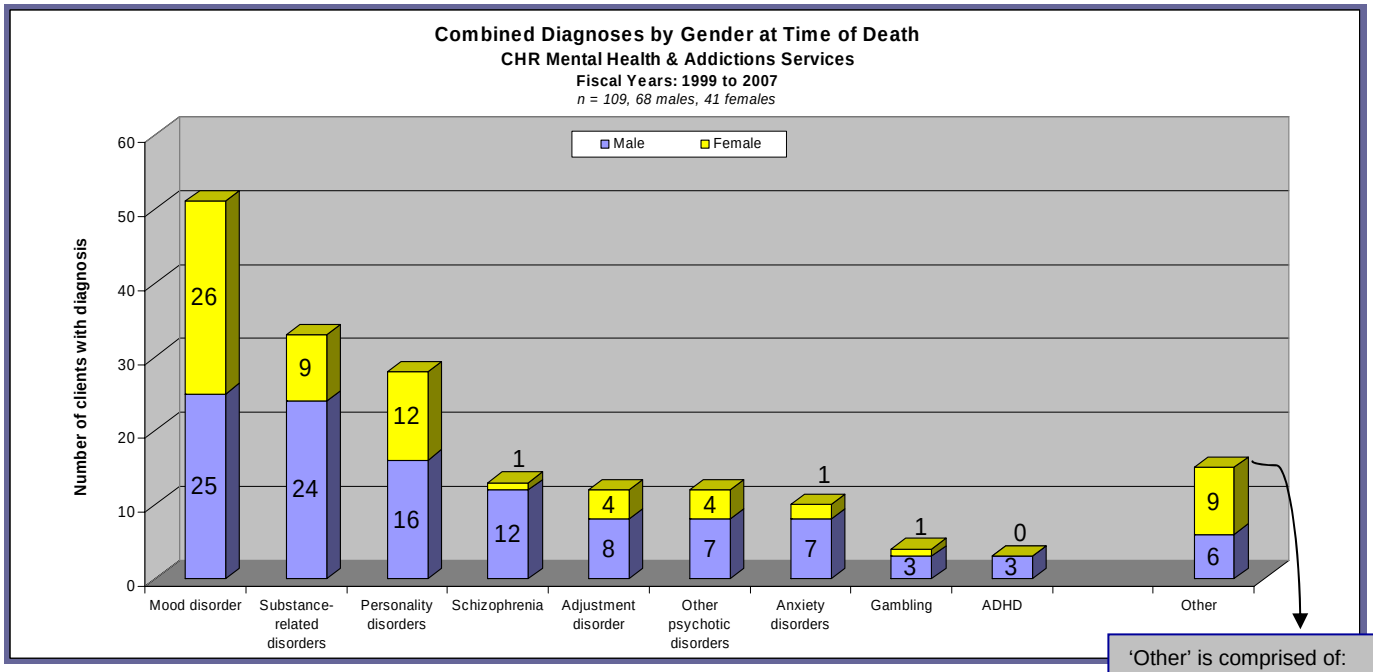
Ethnicity: Most (91%) of those in the mental health population who died by suicide were Caucasians. Five percent comprised other ethnic origins. Only 4% were Aboriginal, which contrasts sharply with provincial figures which identify 10.1% of those who die by suicide as Aboriginal (*www.justice.gov.ab.ca/publications)*. Enhanced Aboriginal Mental Health Services have been implemented to improve access and service to clients, families and communities.

Marital Status: A large majority of those who died by suicide appear to have been unattached (39% single, 37% separated or divorced, 5% widowed.) Only 20% were married or in common-law relationships. Findings in suicide literature bear similarities.

Employment Status: Only 28% of those who died by suicide were employed. Forty-three percent were unemployed (including 10% on disability or sick leave.) Six percent were retired, and 4 % were students.

Diagnoses:

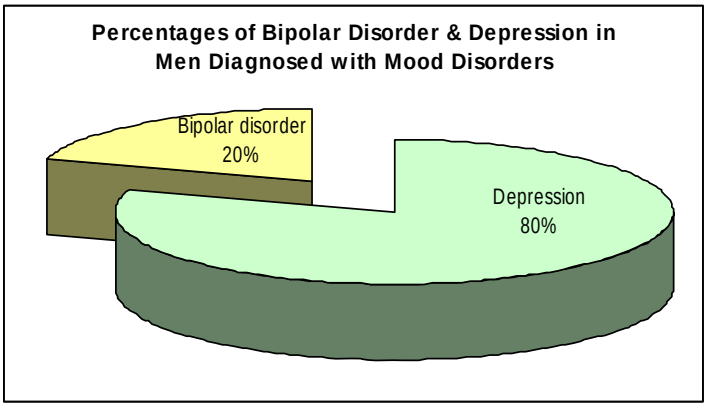
As shown below, the three most frequently occurring diagnostic categories amongst those who died by suicide were mood disorders, substance-related disorders and personality disorders.

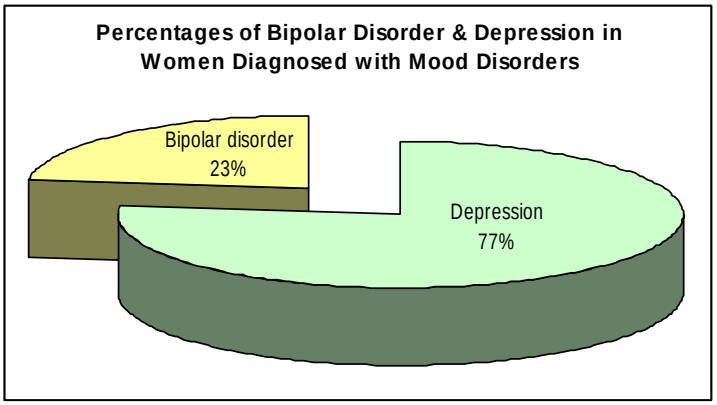


'Other' is comprised of:

Complicated grief – 4
Chronic pain – 2
Marital discord – 2
PTSD – 2
Anorexia nervosa – 1
Gender identity disorder – 1
Malingering – 1
Conduct disorder – 1

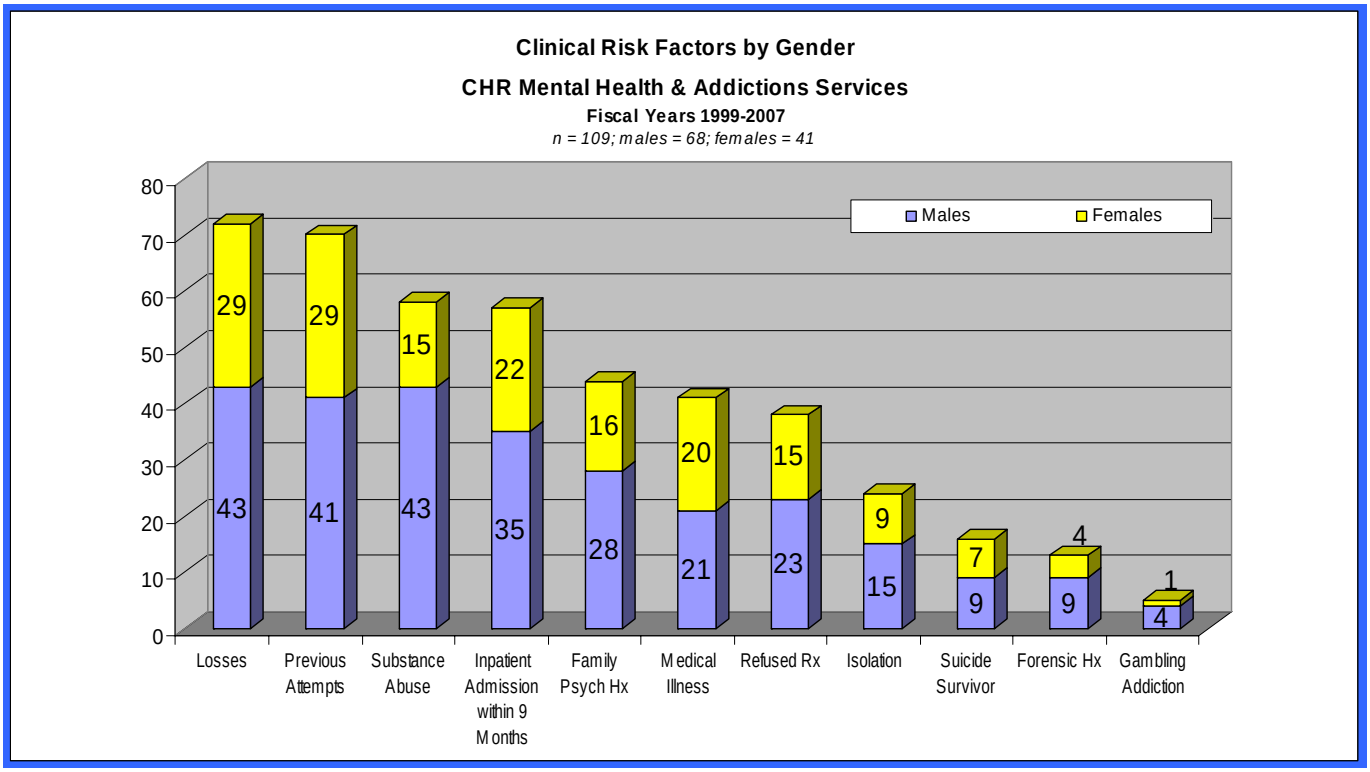
The proportions of males and females differed markedly for some diagnostic categories.
Sixty-three percent of women who died by suicide experienced a mood disorder; most of these (see chart below) were diagnosed with depression.
In contrast, diagnoses of mood disorders and substance abuse were approximately equally frequent for men who died by suicide (37% and 35% respectively.)
Substance related disorder was diagnosed in 57% of those having substance use as a risk factor.
Eighteen percent of men suffered from schizophrenia, compared to 2% of women.
More than twice as many men had anxiety disorders, 10% of men compared to 2% of women.
The proportions for other diagnostic categories were quite similar, i.e., personality disorders (24% of men, 29% of women), and adjustment disorders (12% of men, 10% of women).
For men and women with mood disorders, the proportions of bipolar disorder and depression were fairly similar. Depression occurred about 4 times as often as bipolar disorder.





Clinical Risk Factors

Studying clinical risk factors helps clinicians assess suicide risk. At suicide Reviews, data are collected on each of the indicators shown in the chart below. Sexual, physical and emotional abuses have recently been added to this list, but little data is available on them as yet.



The top four risk factors for men were losses, substance abuse, previous suicide attempts and a psychiatric inpatient admission within the preceding 9 months (63%, 63%, 60% and 51% respectively.)

Women shared three of these: losses (71%), previous attempts (71%), and a psychiatric inpatient admission within the preceding 9 months (54%). The fourth most frequently occurring risk factor for women was co-occurring medical illness (49%).

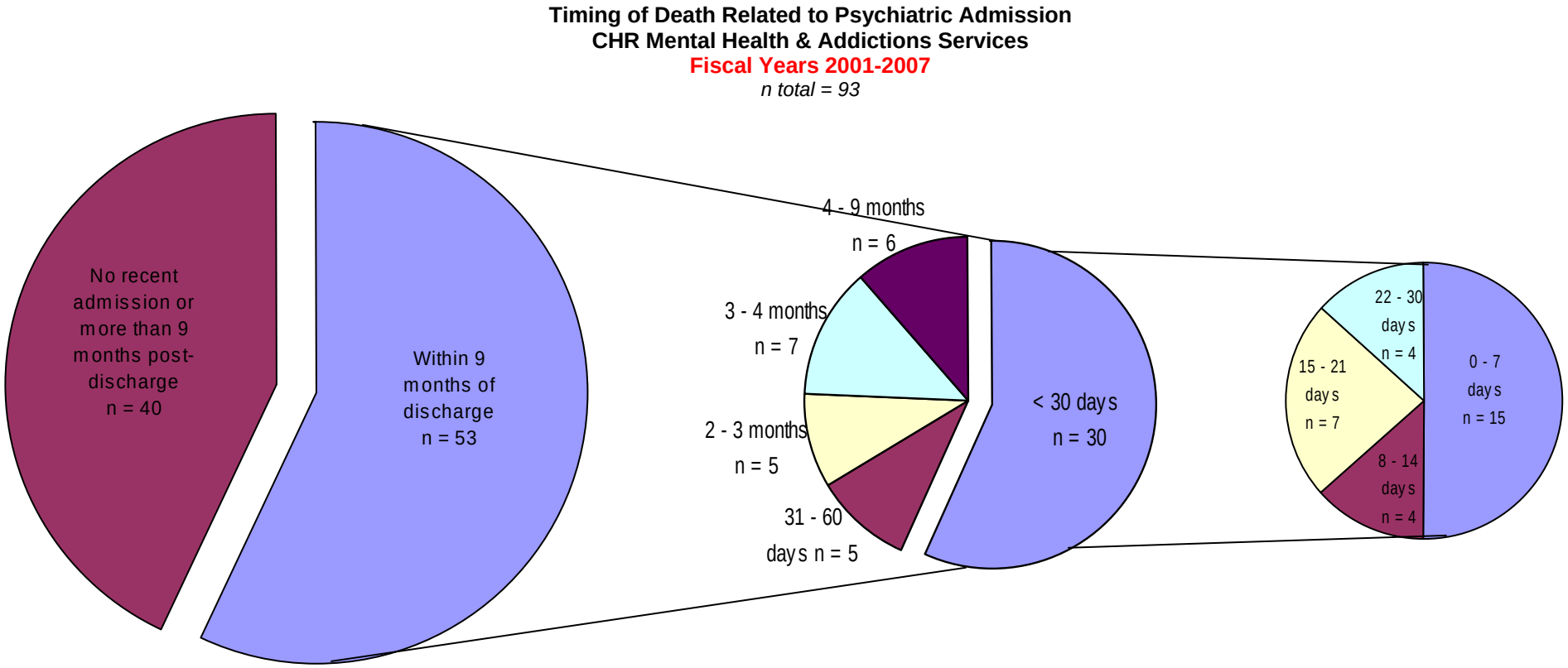
Forty percent of all who died by suicide had a **family history** of psychiatric conditions.

In this sample, people with either a substance use diagnosis or substance use risk factor were significantly younger than those without the disorder or risk factor. *(unpublished paper, Hartney, Penwarden ,Henderson & el-Guebaly, 2007)*

Over all, men and women appeared to average the same number of risk factors (3.5).

Because of the high number of suicides that occur within 9 months of an inpatient admission, this risk factor is examined in more detail below.

Inpatient Admission as a Risk Factor:



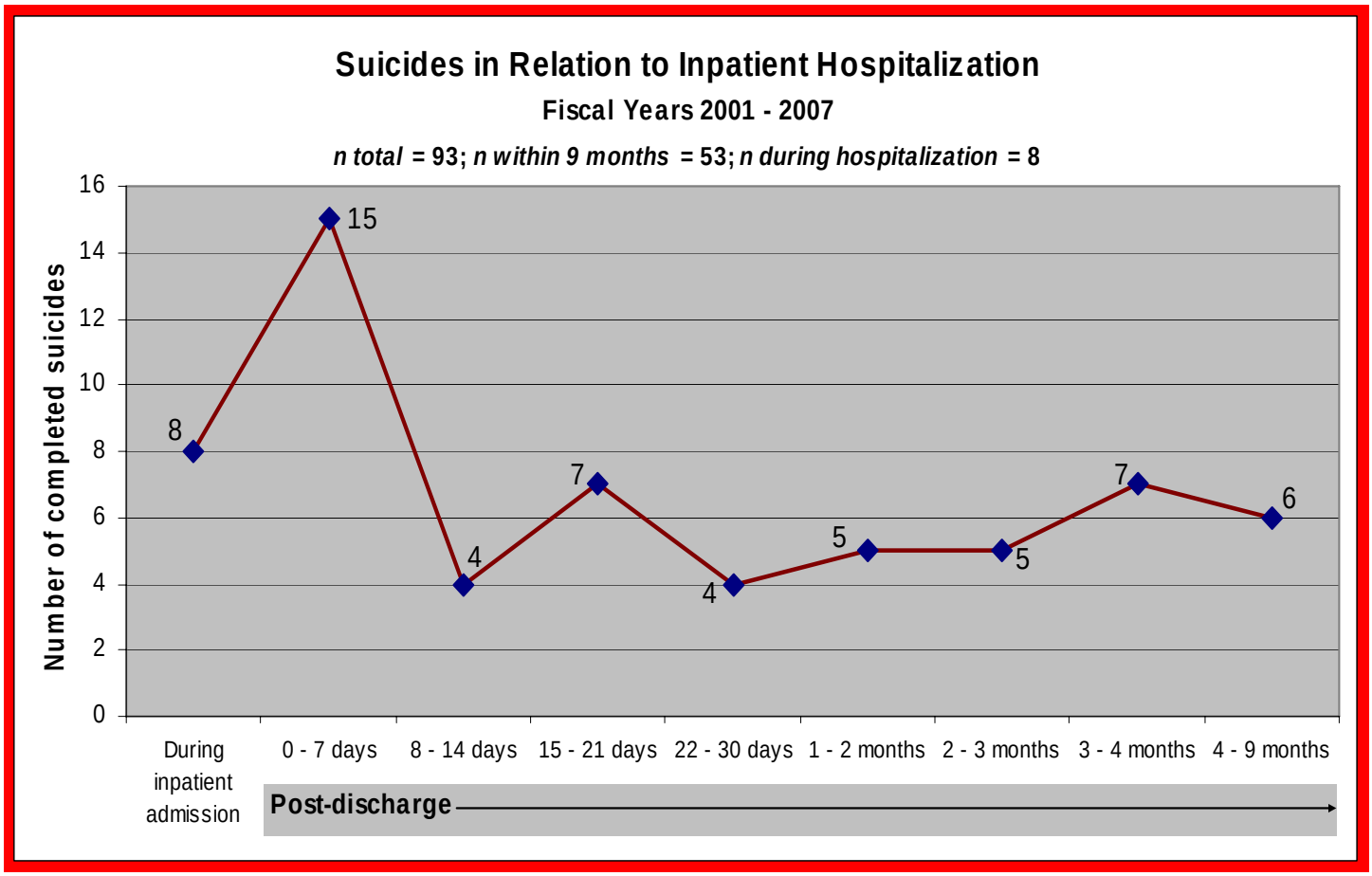
More than half (57%) of all Mental Health & Addictions Services suicides occurred within 9 months of discharge from an inpatient admission. As the middle pie chart above indicates, 30 (57%) of the 53 who die by suicide within the first 9 months completed suicide within the first month following discharge. Half of those 30 died within the first week of discharge. Clearly the first week post-discharge is a high risk time for many of the CHR's mental health patients. This finding is supported by international literature, particularly in the work of Appleby et al, UK.

Inpatient Admission as a Risk Factor:

Also of concern are the numbers of suicide deaths that occur during hospital admissions. As the graph below shows, in fiscal years 2001 to 2007, 8 suicides occurred during inpatient stays. A further 15 deaths occurred within the first week post-discharge, and 15 more occurred by the end of the first month post-discharge.

Together, suicides occurring while in hospital or within a month of discharge from hospital, comprise 41% of all suicides within the CHR Mental Health and Addictions services.

The number of suicides occurring within the first week of discharge has increased gradually, along with our inpatient capacity, over the last six years.



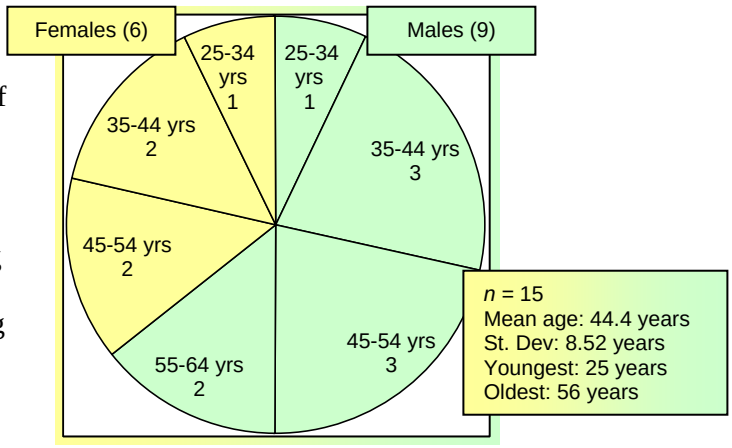
Suicides within one week of discharge (fiscal years 2001-2007):

These 15 deaths post discharge were associated with inpatient psychiatry units at three centres (Rockyview General Hospital, Foothills Medical Centre, and Peter Lougheed Centre). Hanging was the most common method of suicide, occurring in 6 of the 15 cases.

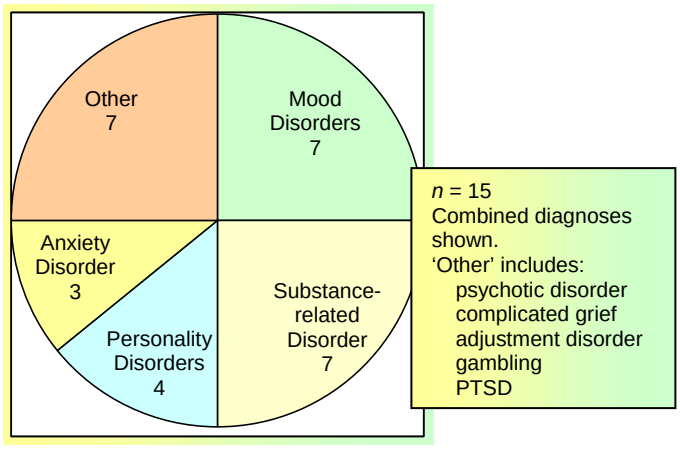
More than half of the 15 clients who completed suicide within one week of discharge were men.

Most clients (73%) were between 35 and 54 years of age. There was 1 young adult of each gender, and one man who was entering later middle age

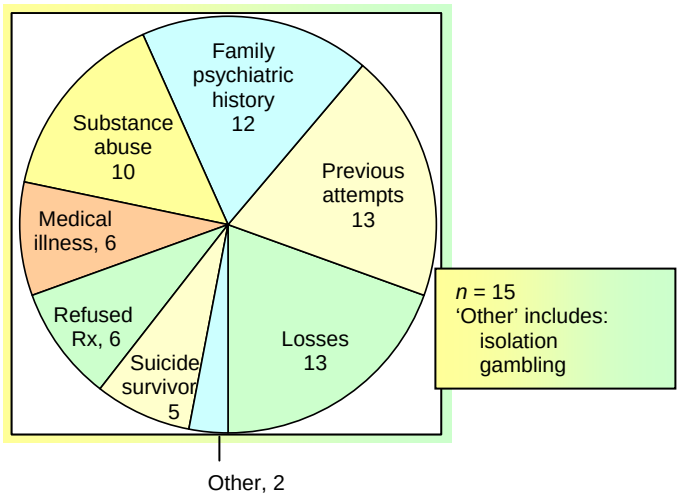
Most (60%) were unemployed.



The diagnoses of substance-related disorder and mood disorder were most common. Many that were not diagnosed with a substance-related disorder were noted at the Review to have substance use as a risk factor.



Substance use was the 4th most frequently occurring risk factor. Most common were some type of loss(es), previously attempted suicide (each being a factor in 87% of the suicides) and a family psychiatric history (a factor in 80% of the suicides.)

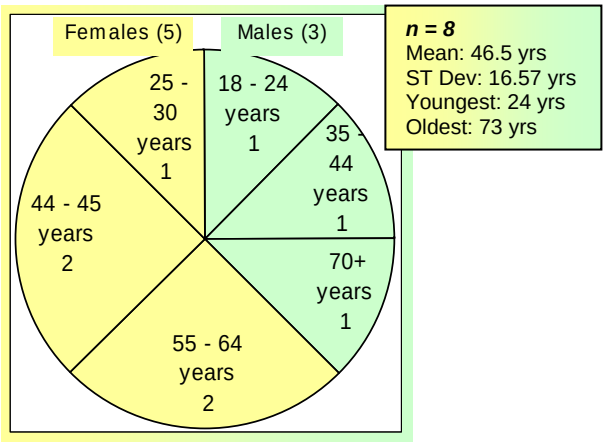


Suicides during hospitalizations (fiscal years 2001-2007):

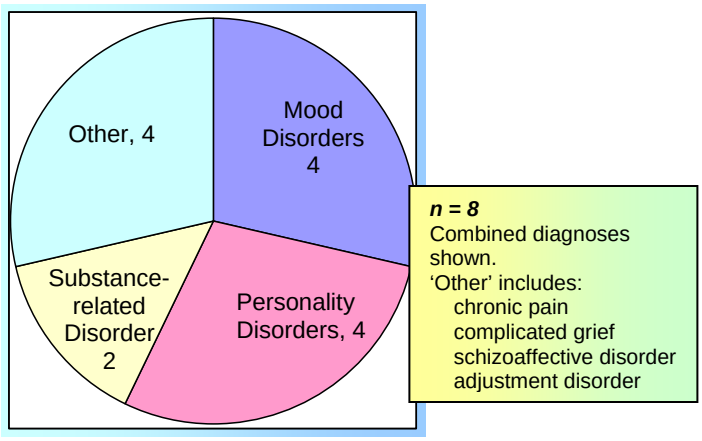
Of the 8 suicides occurring during an Inpatient stay, 4 occurred while the patient was off the unit with privileges, 2 while the patient was out on a pass, 1 following an elopement from the unit. Only 1 took place on the unit. These deaths were distributed across Adult Inpatient units in the city. The suicide methods used included hanging, drowning, jumping, carbon monoxide poisoning and electrocution – none died by gunshot or misuse of medications. Recent clinical improvement had been noted in 3 of these inpatients.

Women comprised the majority (63%) of those completing suicide while inpatients. Women tended to be in mid- to late middle age; men tended to be younger or past their middle years.

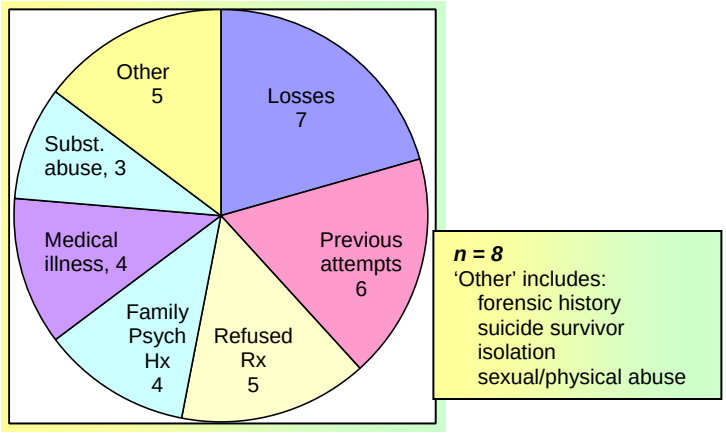
Half of the 8 inpatients were unemployed and one was retired.



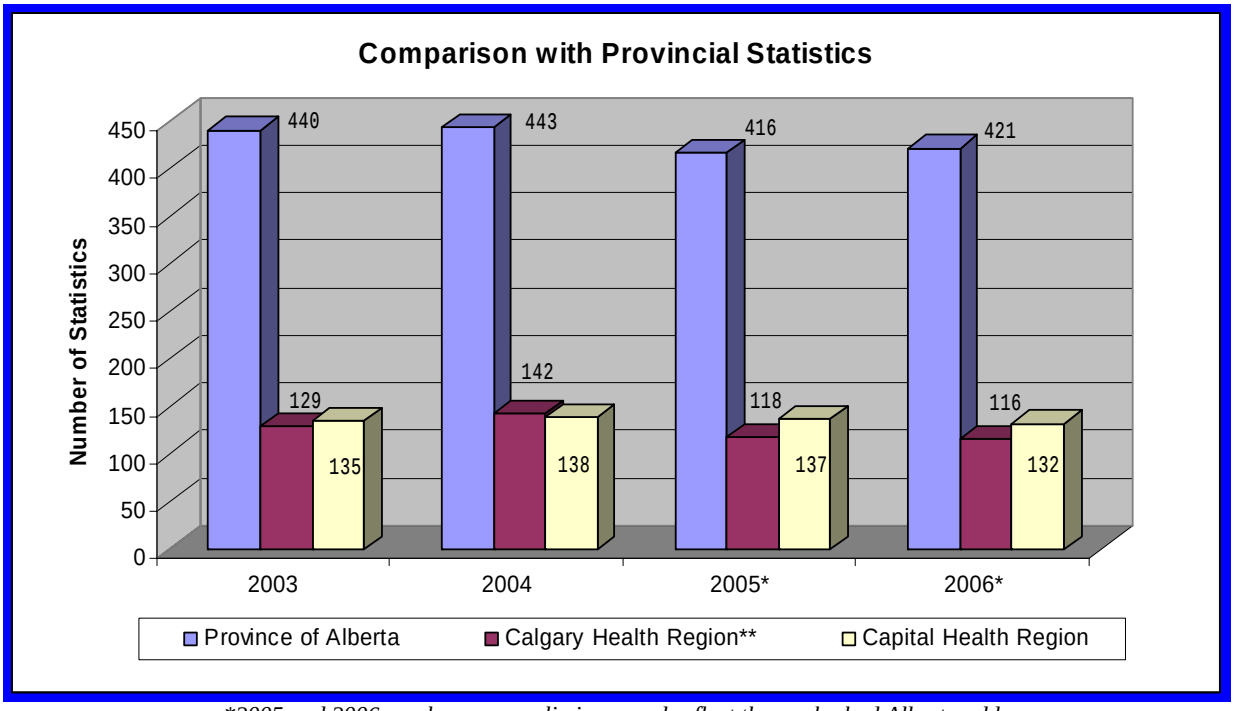
Diagnoses of mood and personality disorders were most common (4 of each; co-occurring in one case.) Two inpatients were diagnosed with substance-related disorders; one of these was also suffering from complicated grief.



The average number of risk factors experienced by these inpatients was 4, with loss(es) (7/8), previous suicide attempts (6/8), and refusing treatment (5/8) occurring most often. Four inpatients had a family psychiatric history and four had a co-occurring medical illness. Three had substance use as a risk factor.



In Conclusion



**2005 and 2006 numbers are preliminary and reflect those who had Alberta addresses.*
(Source: Alberta Office of the Chief Medical Examiner, February 2007, unpublished data)

From these preliminary figures the CME estimates that suicide rates in the Calgary Health Region have decreased from 11.5 suicides per 100,000 people in 2003 to 10.3 suicides per 100,000 people in 2005.
Mental Health & Addictions accounted for only 15.5% of the 116 suicides in CHR (Region 3) in fiscal year 2006**. This is an increase from 2004 when we estimated that 8-10% of suicides were represented within Mental Health. As MH&A service capacity increases and access improves we will continue to see higher numbers of people at risk. The potential to help reduce the overall suicide numbers in Calgary Health Region is great.

This past year marked the development and implementation of the Suicide Risk Assessment & Documentation Policy and accompanying Core Competencies. This was accomplished by a Working Group of 25 multidisciplinary clinicians and two community partners after an extensive literature review. A subsequent rollout of orientation to the policy reached 800 MH clinicians in urban and rural areas of the Regional Mental Health.

Suicide Risk Assessment (SRA) content in MH Orientation Day has expanded to 4 hours. SRA toolkits for use in service areas are being developed as part of strategic planning which includes increasing capacity for knowledge transfer within MH Educators 2008-2010. The Regional MH Education Coordinator is leading these initiatives.

A 7 Day Follow-up Pilot Project for all patients discharged from one Inpatient Psychiatric Unit was implemented mid- 2007 with report on findings due early 2008. The project is evidence based and modeled after the UK program initiated in 2006. The goal of face-to face contact within 7 days of discharge is to reduce suicide numbers in this high risk period for MH patients.

The MH website has been expanded to include latest national and provincial suicide statistics as well as annual findings/reports from the MH data base.

Presentations and posters highlighting MH Suicide data and 7 Day Follow-Up Project are given upon request and when opportunities arise: for example – MH Research Conference Banff 2005, 2006 and Canadian Association of Suicide Prevention Conference in Yellowknife, 2005, 2007; Littman Research Day, Calgary, 2004, 2008.