



# Focus on Patient Safety

01 January 2009 – 30 September 2009

## Welcome

*This is the first of a series of quarterly reports that will be posted on the WRHA website and that will provide information about activity related to the reporting and learning from critical incident [CI] reviews within the region. The usual format will involve five sections which can be reached by clicking on either the green or orange title which is above the brief description of each section.*

*These are **technical reports** and will therefore present information and data in an objective way. It may appear a bit "dry" to the reader and this is quite typical of a technical report. We will provide some commentary in many of the sections, as we try to provide interpretation of the data or provide a context that will make figures more relevant or understandable. The commentaries will appear in italics. One of the reasons we are adding the feedback forum is to allow readers to ask questions and raise issues that may need less technical explanation.*

### Snapshot of the Present Year

*This section will provide a summary of the number of critical incidents, reported each month to the WRHA Patient Safety Team, by sector [acute care, long term care, personal care homes, and community] as well as a monthly breakdown of the number of critical incidents according to general category [diagnostic, fall, infection, medication, procedure, transition, and other]*

For the year 2009 there is no discernible trend in the number of cases reported. More than half the cases reported involved falls with the second most common category being procedural issues.

### Changes over Time

*This section will look at the number of critical incidents reported over time, on a quarterly basis, starting with the year 2005 [the new critical incident legislation was active as of November 1, 2006.]. As well, the mix of reported CIs by category will be shared on a quarterly basis.*

There has been a gradual upward trend in the number of reported critical incidents since 2005. The percentage of critical incidents related to falls has declined, whereas the percentage of cases related to diagnostic issues is five times greater and the percentage of transition issues has doubled.

### Quarterly Topic

*Each quarterly Focus on Patient Safety will examine a different topic in greater detail with information provided by quarter and going back to 2005. The four topics that will be reviewed regularly will be Deaths associated with critical incidents, medication related CIs, critical incidents in the emergency department, and important contributing factors of critical incidents.*

The number of deaths associated with critical incidents increased to a maximum in 2008, the year of the Hospital Mortality Diagnostic Project. In part this reflects an increase in overall reporting. Falls and procedures are the more common categories associated with patient deaths.

### Special Topic

*For most quarterly Focus reports there will be a special topic. Some of the topics under consideration are the impact of patient age and sex on critical incident reporting and outcome, the impact of patient disability on critical incident frequencies, in depth analysis of the CI Categories, the recommendations and*

implementation process, and the variety of safety learning summaries produced as a result of the critical incident review process.

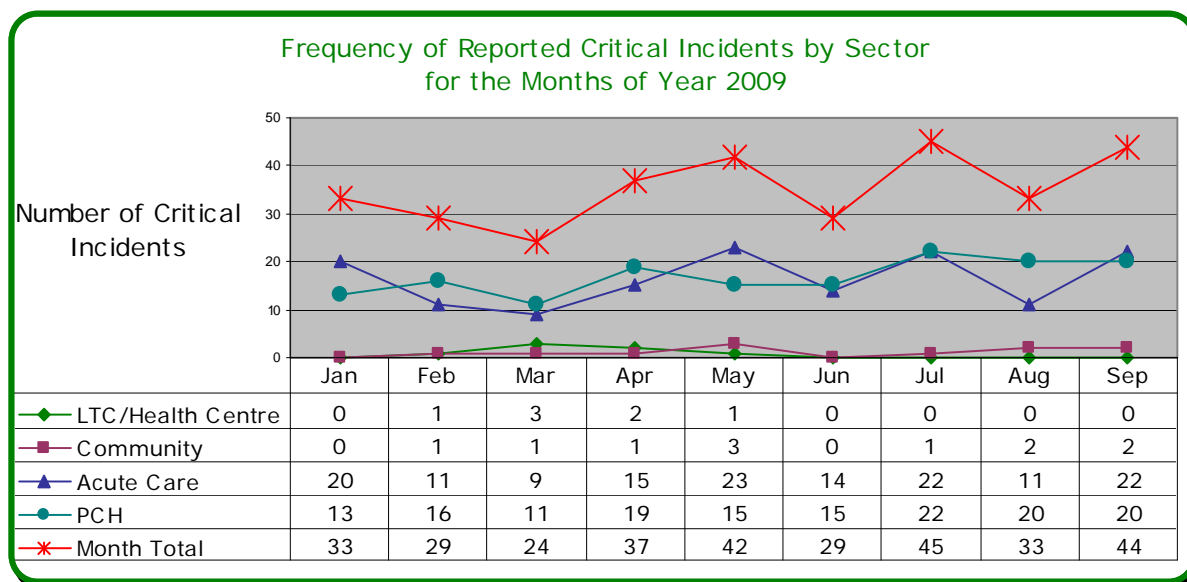
## Feedback Forum

This section will allow readers to ask questions about the information presented as well as to request clarifications about the processes used by the Patient Safety Team. The following quarterly Focus will try to deal with as many of these questions as possible.

## Snapshot of the Present Year

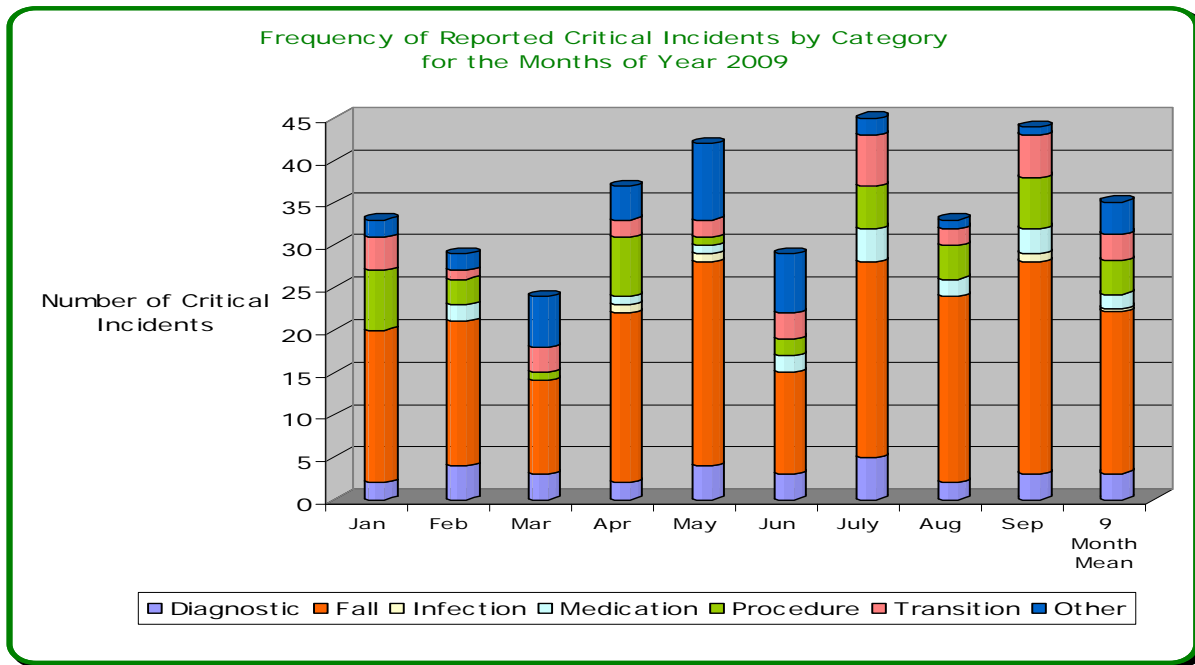
The reporting of critical incidents has been fairly stable across this year with a mean monthly frequency of 35 for all Winnipeg regional health sectors. The personal care home [PCH] and acute care sectors reported nearly identical mean frequencies of critical incidents per month for this year [16.8 and 16.3 respectively]. The long term care [LTC] sector reported a mean of 0.8 [figure corrected 17mar2010], while the community sector each reported a mean of 1.2 [figure corrected 17mar2010] critical incidents per month for 2009 as of 20 October 2009.

Figure 1



Although [Figure 1](#) shows that there is some visible variation from month to month of the number of critical incidents reported, this is within expected variation. Thus from 1 January to 20 October 2009 there is no increasing or decreasing trend in the number of critical incidents reported. The Patient Safety Team continues to support increased reporting of critical incidents and will look for an increasing trend over the next year.

Figure 2



In addition to counting the frequency of critical incidents reported all critical incidents are categorized according to the type of event [see [Figure 2](#)] such that the best dissemination of learning from the event can occur. The seven categories are Diagnostic, Fall, Infection, Medication, Procedure, Transition, and Other.

The largest single category [54%] of all reported critical incidents for 2009 is FALL. The next largest category PROCEDURE [11%] identifies a critical incident involving either a diagnostic or therapeutic procedure. Often this involves a surgical procedure. The category OTHER also represents 11% of the year to date critical incidents. This category includes an attempted or completed suicide by a patient, client, or resident, an unintentional injury either by self, staff or others [for example visitors or other patients, clients or residents], as well as those events that are difficult to classify until the Critical Incident Review Committee [CIRC] completes the review and final report.

The categories DIAGNOSTIC and TRANSITION each accounted for 9% of the critical incidents from 1 January to 20 October 2009. Diagnostic as a category combines incidents focused on diagnosis and diagnostic testing. Transition is a fairly complex category comprised of hand-offs of patients, clients, or residents [such as during a shift change, between clinical areas, between sites or facilities, during vehicle transport], as well as various forms of miscommunication [such as incomplete information on a transfer form or a delay in discharge information from hospital to community].

The category MEDICATION is used when the significant event appears to involve a medication, therapeutic or diagnostic substance.

Examples of the category INFECTION include the acquisition during the provision of healthcare of Hepatitis B or C, HIV or other infectious agent (for instance some cases of MRSA, VRE, or C. Difficile), some surgical site or wound infections, as well as significant skin breakdown such as with bed sores.

## Changes over Time

The reporting of critical incidents over a longer time period has many features in common with the reporting over the year 2009. In [Figure 3](#) there is again much variability across the quarters of each year. Starting in 2007 the frequencies for the personal care home [PCH] and acute care sectors seem to fluctuate in tandem, while the community and long term care [LTC] sectors have far fewer reported critical incidents. A definite

gradual increase in reporting since 2005 is visible in the chart. Indeed there is a statistically significant trend over the five years [see NOTE in [Figure 3](#)]. This trend of increased reporting and awareness of events that contribute to critical incidents is important as it reflects the strength of the safety culture developing in the region. Statistical trending of this data is used to determine ordinary variability from a true trend. Occasionally a quarterly frequency will stand out with what seems to be a larger [or smaller] number of critical incidents reported, for example Q2 of 2008 for the community sector [n=10]. However over the course of time this frequency is not maintained and therefore does not constitute an increased trend in reporting; but rather may represent either random variation or the influence of other factors.

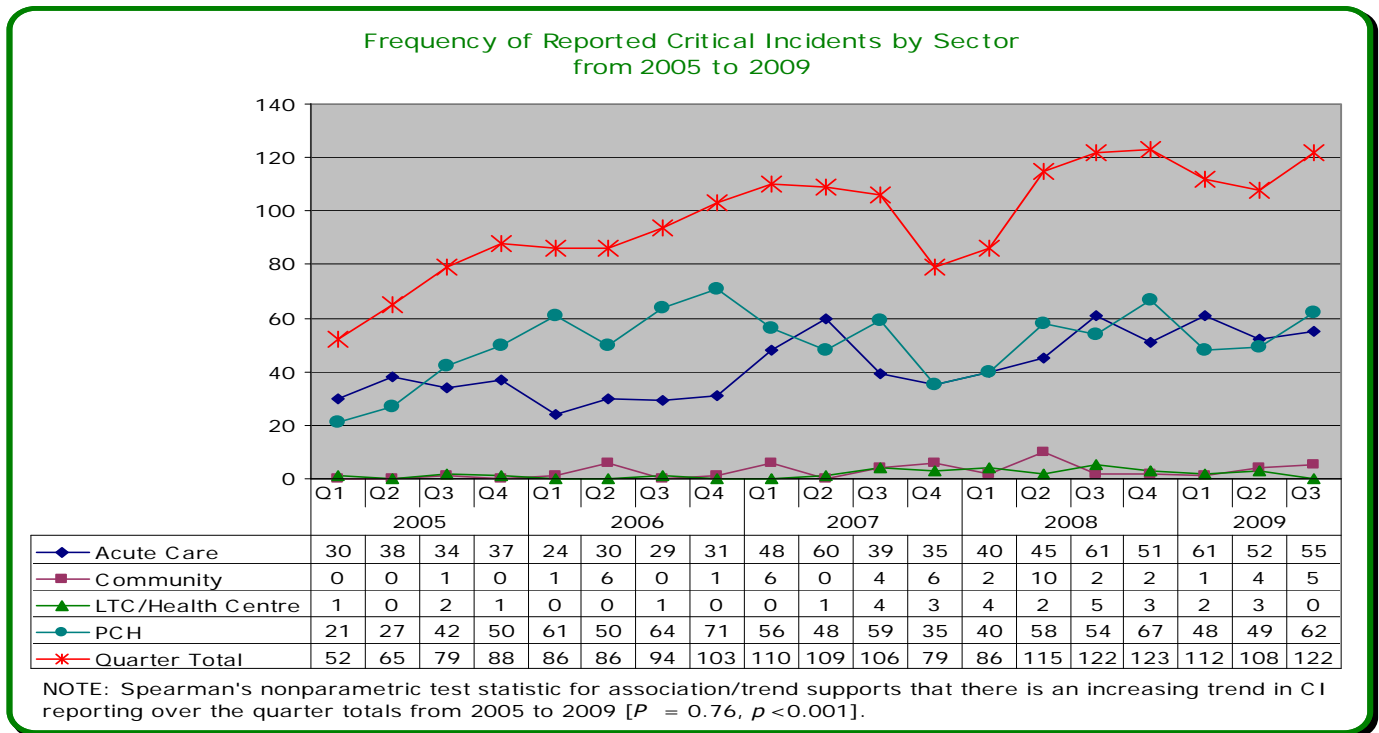
*The increase in reporting of critical incidents from the six acute care hospitals is very encouraging. Most areas in North America receive reports in the range of 2-8% of expected cases. For WRHA, we are seeing the reporting of 30-35% of the expected cases. This reflects a strong commitment from the clinical staff in all our hospitals to come to a better understanding of events that have led to unintentional harm to patients. The WRHA PS Team is able to call on clinical colleagues for opinions and suggestions about how to improve the care – there has never been any hesitation to support the Region's efforts to improve patient safety.*

*In short, the increase in the number of critical incidents is a good thing – this means that we are learning about more situations where patients were unintentionally harmed and by learning about them we have the opportunity to make changes that will benefit other patients. We are grateful for the strong support from clinical staff (doctors, nurses, technologists, pharmacists) throughout the region.*

Many factors influence whether or not a critical incident is reported to the **Critical Incident Reporting and Support Line [CIRSL 788-8222]**. First, a healthcare event must be recognized to fit the definition of a critical incident. Awareness of this single factor can be quite variable across the Winnipeg region. The Patient Safety Team provides an introductory workshop on the investigation of critical incidents [**Using a New Lens to Understand Healthcare Critical Incidents**] that covers the definition of critical incident; however the typical audience is usually those interested in critical incident investigation. Direct care providers make up only about 50% of staff taking this course. In most cases these are the staff that are in the best situation to recognize that a critical incident has occurred. Once a call to the CIRSL is made specially trained operator/counsellors ask a series of questions to help to determine whether or not the event is a critical incident.

Sometimes a small spike is visible in the frequency of reporting over a few weeks when the CIRSL or other aspects of the work of the Patient Safety Team have received media or regional attention. A short time after this enhanced focus on patient safety the frequency of critical incident reporting returns closer to the average. However, many similar efforts over time can translate into the long term trend of increased reporting visible in [Figure 3](#).

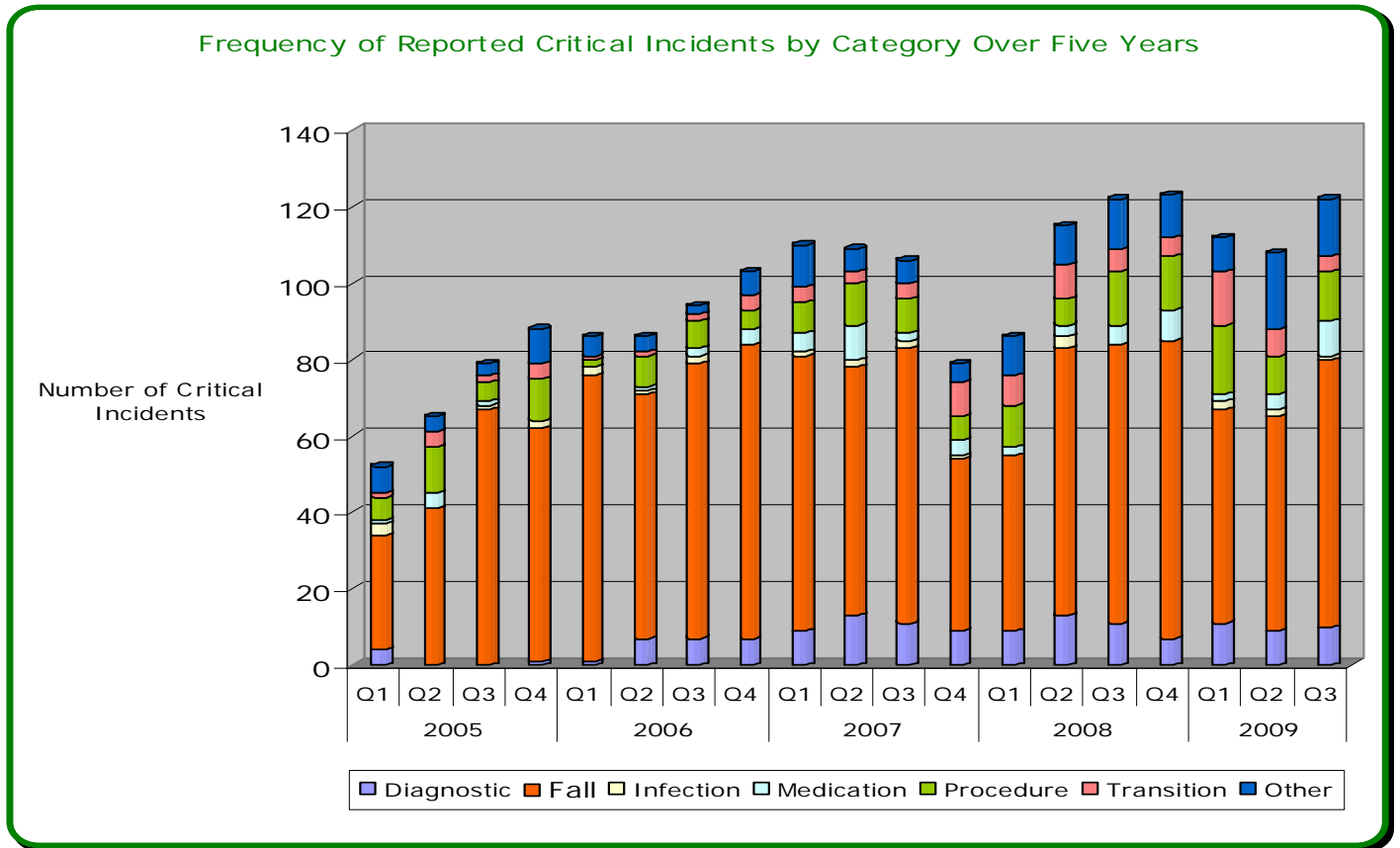
Figure 3



Another factor that may influence the number of critical incidents reported is that patients and their family or support persons are not always aware that they can make a report by calling the CIRSL. From 1 January to 20 October 2009 only 7% of critical incidents were reported by patients, clients, residents, or their families/support persons [5% for calls from 2007 to 2009]. Many people may be unsure if the event they are concerned about is in fact a critical incident. Again, the operator/counsellors at the CIRSL ask a series of questions which help to determine whether or not the event is a critical incident.

A very influential factor on the reporting of critical incidents was the passing of Provincial legislation as the Amendments to the RHA and Manitoba Evidence Acts. This legislation [1 November 2006] required reporting of critical incidents and provided legal protection for the resulting investigations. After this date [see Figure 3] there was a general increase in critical incident reporting. This change is visible in the frequencies for most quarters from Q4 2006 to the present. Speculating on the obvious drop in reporting for Q4 of 2007 and Q1 of 2008 it is interesting that this coincides with the change of service provision from the Critical Incident Reporting Line to the Critical Incident Reporting and Support Line. Possibly there was confusion at this time with the change in service provider. Alternatively there may have been no such effect and the return to increased reporting after Q1 2008 was due to the dissemination of learning from critical incident reviews through the well received Critical Incident Learning Summaries [currently distributed as *The Safety Learning Summaries*]. With so many initiatives of the Patient Safety Team occurring sequentially it is difficult to determine which were the most effective. Whichever factor was the most influential, the important result is that increased reporting provides opportunities to learn from the many different types of breakdown in the healthcare system and hopefully the reduction of reoccurrence.

Figure 4



A broad view of the categories in [Figure 4](#) shows that much of the increase in reporting covers two specific categories. First, the percentage of cases related to diagnostic issues is five times greater and the percentage of Transition critical incidents reported has doubled since 2005. The categories of Medication and Infection continue to represent a small percentage of the reported critical incidents. Less obvious from the chart but very clear in [Table 1](#) is that the increase in reporting has dramatically reduced the percentage of critical incidents that are categorized as a Fall.

Table 1

Comparison between the percentage of reported critical incidents of year totals in each category for each calendar year from 2005 to 2008.							
Year	Diagnostic	Fall	Infection	Medication	Procedure	Transition	Other
2005	1.8%	70.1%	2.1%	2.1%	12.0%	3.9%	8.1%
2006	6.0%	78.0%	1.4%	1.9%	6.0%	2.2%	4.6%
2007	10.4%	62.9%	1.5%	5.0%	8.4%	5.0%	6.9%
2008	9.0%	59.9%	0.7%	4.0%	10.3%	6.3%	9.9%

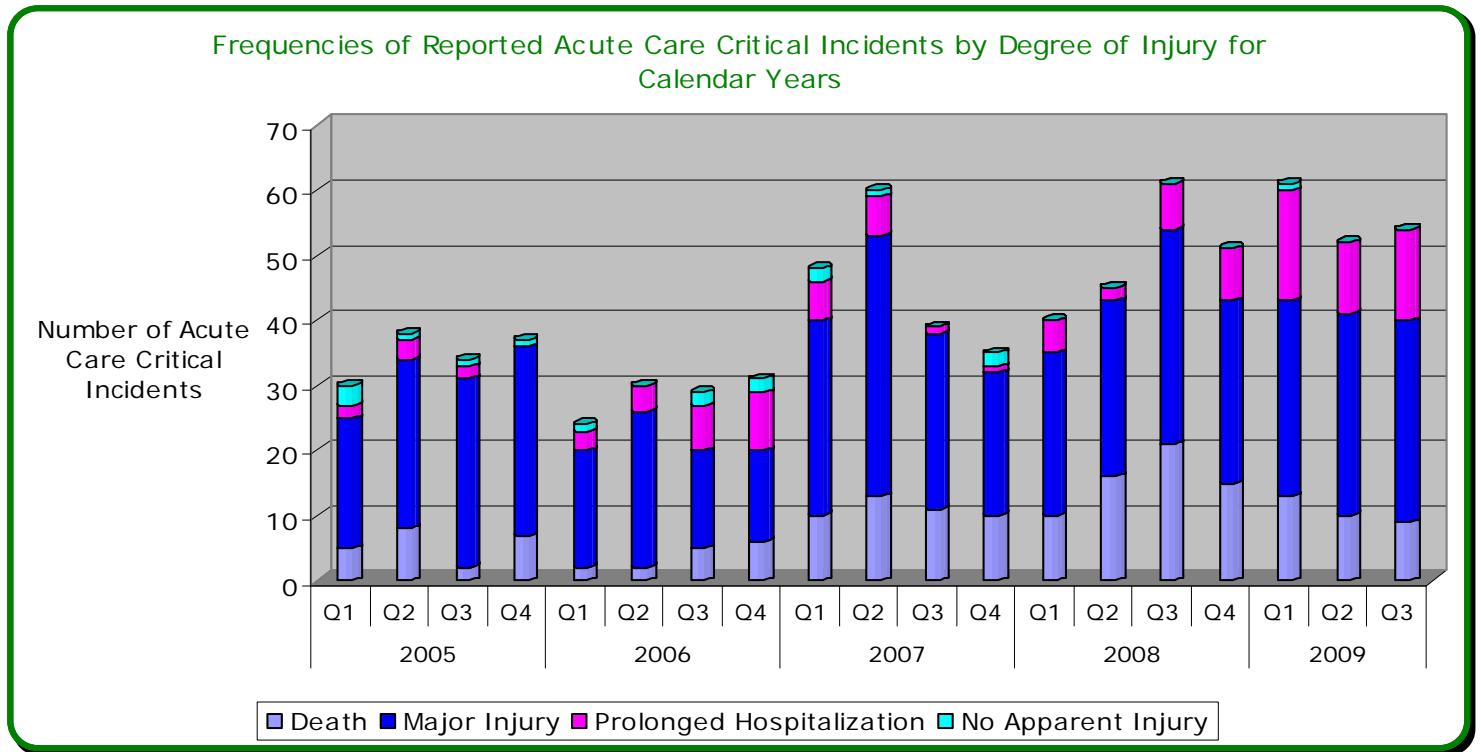
### Quarterly Topic: Focus on Critical Incident Deaths

Critical incidents are also categorized according to the degree of injury or harm as an outcome of the healthcare event [or series of events]. The three main categories used are DEATH, MAJOR INJURY, and PROLONGED HOSPITALIZATION [possibly with minor injury]. On occasion a critical incident is reported where the harm is not immediately clear but the potential is very real. If such an incident is reported it may be categorized as a critical incident with NO APPARENT INJURY. This is usually a rare event. The reporting of critical incidents [called critical clinical occurrences previous to 1 Nov 2006] with no apparent injury has been

decreasing in the acute care sector since 2006 [see the percentages [Table 2](#) and the frequencies [Figure 5](#)]. There have been no critical incidents reported in the long term care, personal care home, or community sectors from 2005 to the present where there was no apparent injury.

Trending critical incident deaths reported for the acute care and personal care home sectors shows that there has been a significant increase for the acute care sector for the quarters from 2005 to Q3 of 2009 [Spearman's  $P = 0.72$ ,  $p < 0.001$ ]. There has not been a similar increase for the personal care home sector [Spearman's  $P = 0.28$ ,  $p = 0.24$ ]. Trending was not conducted for the community or long term care sectors due to the large number of quarters with zero critical incident deaths reported.

**Figure 5**



*The gradual increase in the total number of deaths associated with CIs can be understood in several ways. Simply by reporting more CIs we expect to also hear about more that are associated with the death of the patient. This does not mean that more patients are dying in our facilities – in fact the crude death rate has declined marginally in the past two years. Also, the strong support from clinical staff (for reporting critical incidents) that we noted earlier also seems to translate into a higher comfort level for reporting the more serious cases. When we compare our figures to the projections from the large Canadian Adverse Event Study in 2004, we are actually having almost 75-80% of the expected cases involving unintentional death reported to us. This is much higher than is found in any other part of Canada. By learning about more of the severe cases we are in a good position to increase our understanding of the contributing factors and reduce the risk of recurrence for others in the future.*

Table 2

Comparison between the percentages of reported acute care critical incidents of the year totals by degree of injury for each calendar year from 2005 to 2008.				
Acute Care	Death	Major Injury	Prolonged Hospitalization	No Apparent Injury
2005	15.8%	74.8%	5.0%	4.3%
2006	13.2%	62.3%	20.2%	4.4%
2007	24.2%	65.4%	7.7%	2.7%
2008	31.5%	57.4%	11.2%	0.0%

That the vast majority of critical incident deaths reported tends to occur in the acute care sector is clear from [Table 3](#). In addition to this table, [Figure 6](#) shows how acute care has historically reported the largest portion of CI deaths among the healthcare sectors.

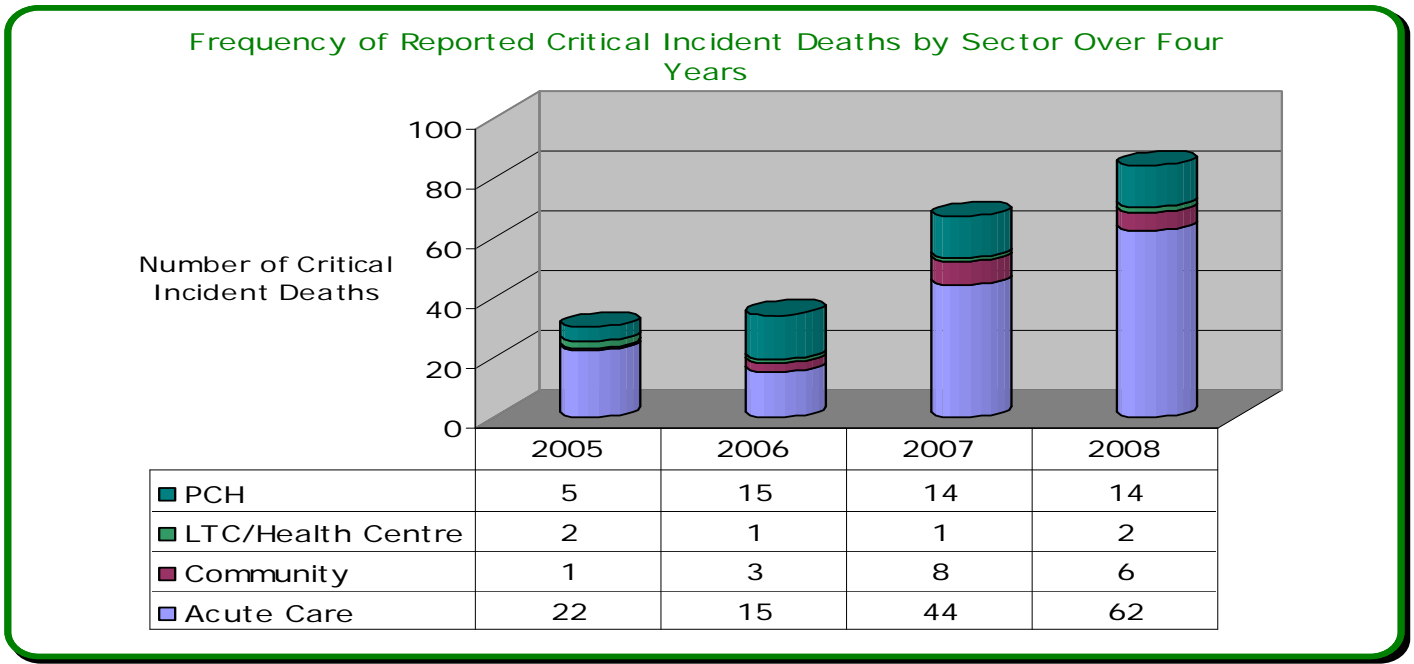
Table 3

Comparison between the percentages of reported critical incidents deaths of the year total deaths for each healthcare sector for each calendar year from 2005 to 2008.				
Year	Acute Care	Community	LTC/Health Centre	PCH
2005	73.3%	3.3%	6.7%	16.7%
2006	44.1%	8.8%	2.9%	44.1%
2007	65.7%	11.9%	1.5%	20.9%
2008	73.8%	7.1%	2.4%	16.7%

Looking strictly at the first three quarters of 2009 there is a similar pattern for the acute care sector reporting the majority [although a smaller proportion than 2008] with 55.2% of the critical incident deaths. Also for this time period both the PCH and LTC sectors reported a slightly larger percentage with 25.9% and 12.1% respectively, while the community sector reported 6.9%. Despite the similar pattern the smaller percentage of deaths reported for acute care in these quarters suggests a developing decline. Following these proportions over many additional months will clarify whether or not this is indeed a true trend.

One reason a decline may be appearing in 2009 is the completion of the one-year WRHA Hospital Mortality Diagnostic Project [established: 1 February 2008 ending: March 2009]. For this multidisciplinary project audits of deaths in the acute care sector were conducted. When a death appeared to meet the criteria of a critical incident the auditor reported the death to the CIRSL. Thus due to the completion of the project this additional reviewing of healthcare related deaths is no longer providing another 'set of eyes' for the critical incident reporting process. Therefore the frequencies reported may return to the levels of 2007.

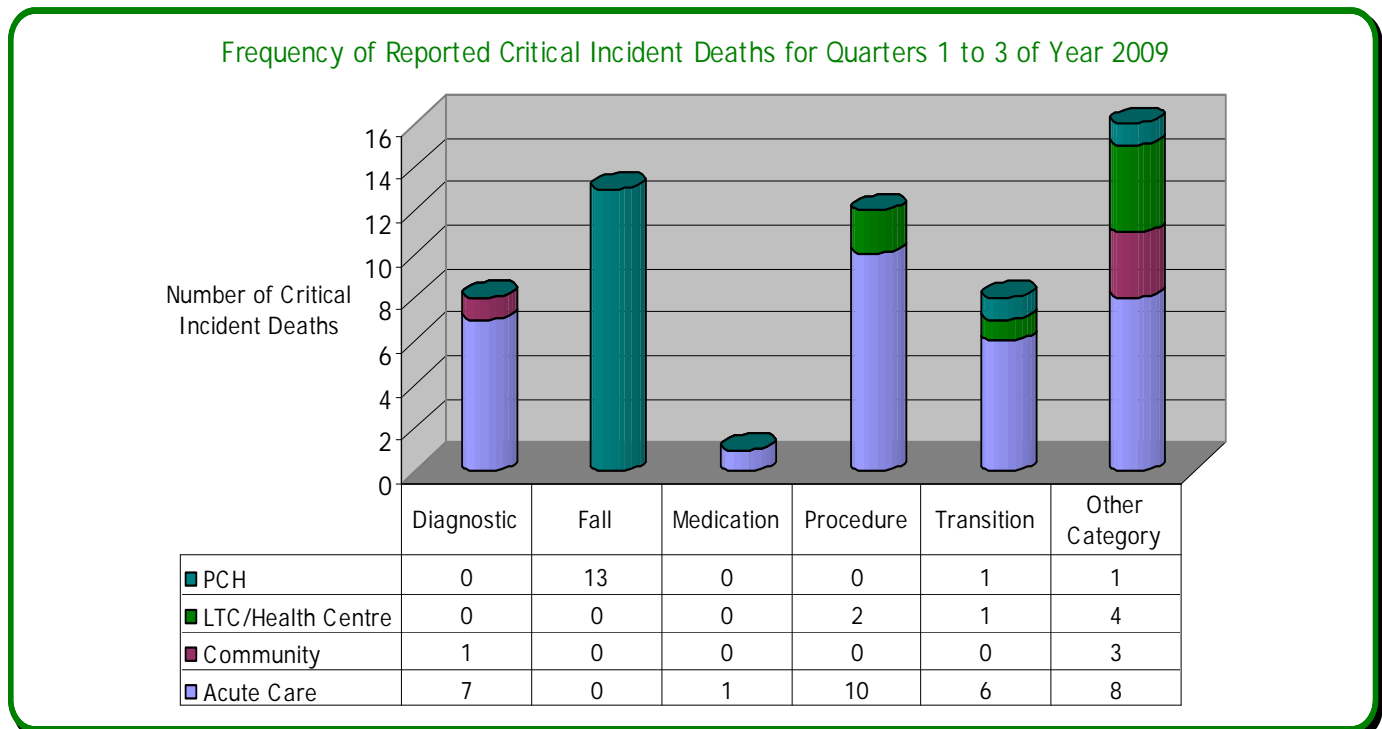
Figure 6



For these first three quarters of the 2009 calendar year [Figure 7](#) gives the breakdown of critical incident deaths for all sectors by category. The largest CI category for deaths reported as of 20 October 2009 is OTHER [27.6%]. As of 9 November 2009, since a number of the CIRC final reports and final categorizations have been completed there is only one critical incident death categorized as OTHER. This occurred in the acute care sector.

As of 20 October 2009 the next largest category for deaths is FALL [22.4%]. This percentage will likely remain close to this, while the percentages of PROCEDURE [20.7%], DIAGNOSTIC and TRANSITION [each at 13.8%] typically increase as the percentage for the category OTHER decreases. The percentage of CI deaths categorized as MEDICATION is quite low at 1.7%.

Figure 7



## Special Topic:

Look for a special topic in the next issue of Focus on Patient Safety!

## Feedback Forum

Please ask us questions about the information presented. Or if you would like clarifications about the processes used by the Patient Safety Team you can request this here. The following quarterly Focus will try to deal with as many of these questions and explanations as possible! Thank you for your interest!

Email us by [clicking on this link](#).