

The Question of Safety: An Exploration of Errors among Undergraduate Nursing Students Placed on Clinical Learning Contracts

A Research Report Submitted to the Manitoba Institute for Patient Safety (MIPS)

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Table of Contents

Introduction.....	50
Methodology.....	52
Section One: Clinical Learning Contracts.....	53
Section Two: Interview Data.....	58
Section I Case Studies.....	60
Overall Transgressions: Years Two, Three, and Four.....	60
I. Clinical Transgression Classification.....	61
II. Transgressions by Gender, Student Status, and Age.....	68
III. Thematic Analysis: Overall Transgressions.....	74
A. Medication Transgressions.....	75
B. Inadequate and/or Inappropriate Skill Application.....	81
C. Other Transgressions.....	86
Concerns About the Clinical Instructor Model.....	89
IV. Comparison of Transgressions for Years Three and Four.....	92
Section I Case Studies: Year Two Nursing Students.....	98
I. Professional Socialization: Development of the R.N. Identity.....	101
II. Nursing Care Concerns.....	104
III. Clinical Transgressions.....	107
IV. Remediation and Rehabilitation.....	108
Student-Centered: Remediation & Rehabilitation Activities.....	109
Clinical Instructor-Centered: Remediation and Rehabilitation Activities.....	112
Students Who Failed the Clinical Course: Understanding “Why?”.....	114
Section I Case Studies: Year Three Nursing Students.....	119
I. Professional Socialization: Development of the R.N. Identity.....	121
II. Nursing Care Concerns: Year Three.....	126
III. Clinical Transgressions: Year Three.....	128
I. Clinical Transgression Classification Scheme.....	140
II. Transgressions by Gender, Student Status and Age.....	143
III. Thematic Analysis: Year Three Transgressions.....	149
A. Medication Transgressions.....	150
B. Inadequate and/or Inappropriate Skill Application.....	162
C. Other Transgressions.....	170
IV. Year Three: Remediation and Rehabilitation.....	176
Student-Centered: Remediation & Rehabilitation Activities.....	177
Clinical Instructor-Centered: Remediation & Rehabilitation Activities.....	182
Section I Case Studies: Year Four Nursing Students.....	185
I. Professional Socialization: Development of the R.N. Identity.....	185

II. Transgressions: Year Four.....	185
I. Clinical Transgression Classification.....	186
II. Transgressions by Gender, Student Status & Age.....	189
III. Thematic Analysis: Year Four Transgressions.....	194
A. Medication Transgressions.....	195
B. Inadequate and/or Inappropriate Skill Application.....	202
C. Assessment, Reporting, & Recording Transgressions.....	206
IV. Year Four: Remediation and Rehabilitation.....	210
Student Centered: Remediation & Rehabilitation Activities.....	211
Instructor Centered: Remediation & Rehabilitation Activities.....	217
Year Three & Four Students Who Failed the Clinical Course.....	218
Section II: Focus Group Interviews.....	224
Overview of Findings.....	225
A Perspective on Patient Safety- Nursing Students.....	235
I. Conceptualizing Patient Safety from an Individual and Systems Perspective.....	237
II. Exposure to Patient Safety Concepts.....	238
III. Factors Placing Students at Risk;Factors Supporting Students...	240
A Perspective on Patient Safety- Clinical Instructors.....	250
I. Clinical Instructor Awareness of Patient Safety & Patient Safety Concepts.....	252
II. Clinical Instructor Expectations and Patient Safety Concerns Regarding Students.....	253
III. Clinical Instructor Role Before & After a Patient Safety Event....	257
IV. Clinical Instructor Program Perspectives.....	260
V. Clinical Instructor Perceived Factors Placing Students at Risk and Factors Supporting Students.....	263
A Perspective on Patient Safety- Administrators.....	273
I. Awareness of Patient Safety & Patient Safety Concepts.....	276
II. Exposure to Safety Patient Concepts.....	277
III. Patient Safety Concerns.....	279
IV. Clinical Course Leader Role Before and After a Patient Safety Event.....	280
V. Concerns about Clinical Instructors Placing Students at Risk and Proposed Solutions.....	283
VI. Program Perspectives.....	284
A Perspective on Patient Safety- Faculty.....	288
I. Awareness of Patient Safety &Patient Safety Concepts.....	290
II. Students' Exposure to Patient Safety Concepts.....	292
III. Patient Safety Concerns and Expectations of Students After a Patient Safety Event.....	294
IV. Role of Faculty and Clinical Instructors.....	295
V. Program Perspectives.....	298

VI. Factors Placing Students at Risk;Factors Supporting Students.	300
A Perspective on Patient Safety- Staff Nurses.....	309
I. Awareness of Patient Safety & Patient Safety Concepts.....	310
II. Role of Staff Nurses Before & After a Patient Safety Event.....	311
III. Factors Placing Students at Risk;Factors Supporting Students..	327
A Perspective on Patient Safety- Unit Managers.....	321
I. Awareness of Patient Safety & Patient Safety Concepts.....	323
II. Role of Unit Manager Before & After a Patient Safety Event...	324
III. Factors Placing Students at Risk;Factors Supporting Students..	327
A Perspective on Patient Safety- Risk Managers.....	334
I. Patient Safety Awareness & Factors Placing Students at Risk...	334

Executive Summary

This study was conducted to understand patient safety from an education-systems perspective (Gregory, Guse, Davidson Dick, Russell, 2007). Within the health care system, addressing patient safety from a systems perspective is receiving increasing attention and action. In contrast, nursing education has primarily addressed patient-safety matters from an individual student, rather than a systems-based perspective.

Understanding the impact of nursing education systems on students, with respect to patient safety, remains significantly under-researched. A systems perspective entails "looking within" and reviewing how existing program structures and processes (eg., curriculum, sequencing of courses, student access to skills labs, clinical practice models, math calculation tests, etc.) foster or undermine patient safety among nursing students. The findings from this study revealed that patient safety was narrowly understood by the majority of stakeholder groups as "safe patient care." With few exceptions among the participants, patient safety was equated to safe medication administration (notably, *the Five Rights*).

- *Among those interviewed during the course of the study, and with a few exceptions, the understanding of patient safety as a systems-based concept was decidedly lacking.*

The Safety Competencies: Enhancing Patient Safety Among the Health Professions (2008), is a user-friendly framework that promotes the integration of patient safety competencies into health care curricula. The document addresses the concerns of Sandars, Bax, Mayer, Wass, and Vickers (2007) by

offering interprofessional consensus on priority patient safety content for undergraduate students in the health care professions. These competencies are poised to influence the place and presence of patient safety in health care curricula.

In clinical nursing education, the tendency is to take an individual approach to patient safety, i.e, each student is held solely accountable for her/his clinical transgressions. There needs to be increased attention toward overall nursing education and not just the individual nurse who is educated (Neudorf, Dyck, Scott, & Davidson, 2008; Milligan, 2007). As Milligan observed, the process of making significant moves towards a patient safety culture requires changes in healthcare education.

- *A “culture shift” occurs when student transgressions in the clinical setting (error, in the traditional clinical vernacular) are considered within the wider context of the education system.*
- *Students are expected to make mistakes as they learn, but the nursing program is equally expected to ensure that students are as safe as they can be.*
- *Nursing programs lack baseline data on the type and frequency of nursing student transgressions.*

An individualized approach to patient safety was confirmed during the course of this study. Patient safety concerns, in the form of clinical learning contracts, were placed in individual student files; such data were not aggregated to reveal patterns or trends in clinical transgressions among nursing students.

- *Furthermore, there was limited or no exchange of data concerning patient safety events between the practice sites and the nursing program.*

On occasion, the seriousness of a clinical transgression necessitated communication between the practice and education sectors; however, this was not the norm. These findings are likely true of nursing programs in Canada, the United States, and internationally.

Although this study focused on nursing students, patient safety is of concern among all students in the health care professions, e.g., medicine, pharmacy, dentistry, physiotherapy, occupational therapy, etc.

- *There is a real need to research the relationship between education (and, in particular, clinical education) and patient safety among students in the health care professions.*

Methodology

The purpose of this study was to explore transgression data related to nursing student error, near misses, potential adverse events, and adverse events.¹ Data were obtained from two primary sources; clinical learning contracts, and individual and focus group interviews with a host of stakeholders. Stakeholders from outside the nursing program were based in three clinical agencies; a long-term care center, a tertiary care hospital, and a community-based hospital. No stakeholders were interviewed from community health agencies; this should be considered a limitation of the study. In addition, the clinical learning contracts were mostly concerned with students' performances in the acute and long-term care clinical settings (81.67%, 49/60 learning contracts). Students in Year Two

¹ These terms are defined in Section One, Case Studies, Clinical Transgression Classification on pages 16-18 of this *Executive Summary*.

were placed with community-based agencies and thus their learning contracts (n=11) addressed nursing care of the well elderly and child bearing families.

The Question of Safety: An Exploration of Student Error among Undergraduate Nursing Students Placed on Clinical Learning Contracts is organized into two major sections. *Section One* consists of qualitative and quantitative findings generated from the clinical learning contracts. *Section Two* comprises individual and focus group interviews (students, clinical instructors, faculty members, education administrators, staff nurses, unit managers, and risk management officers).

Section One: Clinical Learning Contracts

Clinical learning contracts were established within the nursing program to assist students in the clinical setting. Students whose nursing care did not meet expected standards, and students who were clinically weak or unsafe, were enrolled in clinical learning contracts. These students were more closely supervised and offered rehabilitative and remedial support. The intent of the learning contracts was to foster growth among novice clinical practitioners (learners). Clinical instructors² (CIs) initiated the contracts within the clinical

² Clinical Instructors (CIs) were employed by the nursing program to supervise nursing students. Typically, there was one CI for a group of 6 to 8 nursing students on a clinical unit. The CI may have been "new" to the clinical unit. CIs taught in Years Two, Three and the first half of Year Four. In the latter part of Year Four, preceptors (registered nurses [RNs]; staff nurses) supervised nursing students who completed their Senior Practicum—which was the final clinical placement in which clinical consolidation occurred among students. Buddy RNs were unit staff, and students provided nursing care to one of more of their patients. Although the nursing student and her/his clinical instructor were primarily responsible for the care of these patients, buddy RNs were often in the

setting; most did so on their own volition, although some CIs consulted with the respective clinical course leader (i.e., they sought advice from the faculty member responsible for the course) prior to placing students on a learning contract.

The 60 learning contracts typically consisted of the following sections:

- Professional/Socialization Issues
- Nursing Care Concerns
- Clinical Transgressions
- Remediation and/or Rehabilitation
- Clinical Expectations
- Evaluated outcomes

With the exception of clinical expectations, these sections are fully addressed in this Report. Clinical expectations reflect the standards to which nursing students were held accountable. In order to avoid redundancy, data related to clinical expectations were threaded throughout the other sections, i.e., nursing care concerns, clinical transgressions, and remediation/rehabilitation. Although the 60 clinical learning contracts informed the above six areas, the number of students who precipitated clinical transgressions (e.g., errors) was 37; 29 female and 8 male. Of this number, there were 7 female and 4 male international students³. Not all students who were placed on clinical learning contracts precipitated clinical transgressions, e.g., their nursing care, while not of concern

background—ensuring that safe, competent nursing care was offered to patients. Some buddy RNs played a role in Near Misses (good catches) and thus prevented patient safety events from occurring among patients cared for by nursing students.

³ International nursing students were in Canada under the auspices of a student visa and were enrolled in the nursing program.

from a patient safety perspective, warranted the initiation of a learning contract. Clinical transgressions are highlighted in this *Executive Summary*.

The clinical learning contracts were a veritable “gold mine” with respect to mining data related to Near Misses (NMs). Clinical instructors recorded these interceptions or good catches in the clinical learning contracts. NMs are greatly informative regarding the advancement of patient safety among nursing students. They represent learning opportunities for students, CIs, and the unit nursing staff. Moreover, and from a systems perspective, the data can assist nursing educators to identify ongoing patterns in student performance warranting adjustment in the curriculum (e.g., course-based changes, increased access to the skills lab, focused or strategic skill reviews, etc.). Unlike most occurrence reports, which report a mishap after the fact, clinical learning contracts are upstream and preventive in their value.

The clear majority of students who entered into clinical learning contracts were ultimately successful, i.e., they demonstrated growth as novice practitioners. Overall, only 8 students (13.33%) who were placed on learning contracts failed; the remainder (86.67%, 52/60) was successful.

- *The failure rate among the three clinical years varied as follows: Year Two (18.18%; 2/11); Year Three (8.33%; 3/36); and, Year Four (23.08%; 3/13).*

The denominator for each clinical year does not reflect the total population of learning contracts; it simply reflects the number of learning contracts randomly sampled from the student files for the purposes of this study. Thus, some caution

is warranted in the interpretation of these failure rates (given that the total number of possible clinical learning contracts is unknown). Suffice to note that the clear majority of students in this sample of clinical learning contracts were successful in passing their clinical courses.

Clinical Learning Contracts Data. Sixty case studies (clinical learning contracts) were analyzed, i.e., the data were subject to qualitative content analysis and, as appropriate, descriptive statistical analysis. The learning contracts consisted of archived materials (1999-2005) culled from the individual files of nursing students who had graduated from the nursing program. That student information was limited to graduates was a condition of ethical approval from the University ethics committee. A third-party (administrative clerk) was employed to hand search the student files as each learning contract was housed in the file of individual students. A random selection of student files garnered n=60 learning contracts as follows: Year Two (n=11); Year Three (n=36); and Year Four (n=13). As this research was exploratory in nature, the researchers determined that a sample of approximately 50 case studies was adequate to discern the phenomenon of interest. A brief demographic profile follows:

Executive Summary (ES) Table 1. Case Study Demographic Data

Gender	Female	Male	Overall
	78.33% (n=47)	21.66% (n=13)	100% (n=60)
Age	26.51	30.59	28.55
International Student Status	18.33% (11/60)	11.66% (7/60)	30% (18/60)

As would be expected, the majority of students were female; however the percentage of male nursing students (21.66%) appears higher than what would be encountered in such a sample. While the number of male nursing students in Canada remains unknown, the number of males in the Canadian RN workforce is reported as 5.6% (CNA, 2006). The number of male nursing students is estimated to range from 5% to 10% within undergraduate nursing programs in Canada⁴. Of interest, there were more international students than males placed on clinical learning contracts.

Section Two: Interview Data

Focus group interviews [n=10] and/or collective interviews of at least two persons were conducted by the Project Manager (Hultin) with key stakeholders (See following table). In addition, 9 individuals (education administrators, n=2; unit managers, n=6; and an agency-based risk manager) were interviewed. Thus, this data set consisted of consultation with 40 people. The focus group findings are presented in *Section Two* of the report.

⁴ It is astounding that the number of male nursing students in Canada remains unknown at this time.

ES Table 2. Number of Focus Group and Individual Interviews

Group	# Focus Groups	# Individual Interviews	Total participants
Students	2	0	7
Clinical Instructors	2	0	9
Administrators	1	2	4
Faculty	1	0	4
Unit managers	0	6	6
Staff nurses	3	0	7
Risk managers	1	1	3
Total	10	9	40

Focus Group Interview Data. Subsequent to obtaining informed consent, the interviews were digitally recorded, transcribed verbatim, and anonymous interview transcripts were created. A semi-structured interview guide was developed by the research team; questions were formulated based on the literature, existing research, and the respective experiences of the researchers. The PI, along with the two research assistants, subjected the transcripts to standard qualitative content data analysis. Consensus, in relation to the analysis and interpretation of the transcripts, was established among the PI and the two research assistants. Findings were then shared with the research team members, whose feedback was invited.

Although the researchers were initially concerned about the relatively small numbers of nursing students, their perspectives were consistently validated in the other stakeholder interviews. Despite concerted and repeated efforts to recruit students, only 7 volunteered to be interviewed. In looking at their perspectives, it may be that students were frightened to come forward and discuss errors, mistakes, and patient safety events/concerns within their nursing program.

Students characterized their nursing program, and in particular the theory/classroom component, as a *culture of fear* and not a *culture of safety*.

SECTION ONE: CASE STUDIES

I. Clinical Transgression Classification

Clinical transgressions were organized as (i) errors, (ii) near misses, (iii) potential adverse events, and/or (iv) adverse events.⁵ The very nature of the clinical learning contracts held students solely accountable for their clinical transgressions. When the data from the clinical learning contracts and interviews were analyzed, however, it became clear that the education system shared some responsibility for these clinical transgressions. This is not to imply that students were not accountable for their actions. Data suggest that there may also be a systems effect that negatively contributed to students' clinical transgressions.

- (i) Errors (E) were events for which a student was held responsible, but a patient was not directly placed "at risk" for any kind of harm (physical, emotional/psychological or otherwise). The following textual excerpt illustrates an error.

I was tidying the counter in the med room after all students had completed their meds, and noticed a plastic cup with what appeared to be a crushed Tylenol #3. I asked the student regarding same, and she stated that she had not given the

⁵These definitions are informed by the *Canadian Patient Safety Dictionary* (2003), Royal College of Physicians and Surgeons, Ottawa, Ontario. They have been modified to suit the nature of nursing practice and the study's data. The researchers created the category, *Potential Adverse Events*, to more accurately reflect the patient safety events precipitated by the nursing students, i.e., their actions directly placed patients at risk; however, no patient harm was recorded (as fact) in the clinical learning contracts. *Adverse Events* were coded when patient harm was documented in the clinical learning contracts.

med because the patient had left the unit, and once they returned the buddy nurse gave the Tylenol. The patient in the meantime had been discharged and was no longer in the computer. I wasted the med with another RN and notified the pharmacy of the Error. I discussed with the student the importance of prompt wastage of narcotics (P-38, A-22, F, I⁶).

- (ii) Near misses (NM) were events in which patient safety would have been compromised if someone, such as a CI or the buddy RN, had not intervened to rectify the student's erroneous plan of action. Thus, NMs were interceptions or good catches and constituted preventative acts with respect to the safety of patients. The following two examples of NMs are from the clinical learning contracts.

The student calculated the correct dosage at 6.25 ml. She drew up 6 ml. The Preceptor caught this error right away. The patient received the correct dosage. The student stated "I thought my Preceptor was rounding down dosages, so I did the same" (P-57, A-24,F).

Medication near miss: 3cc syringe to an 18-gauge needle with .6 ml or 60 units, instead of 6 units/insulin syringe (P-20, A-30, F).

- (iii) Potential adverse events (PAE) were events that occurred when a student's actions directly placed a patient at risk for potential harm; however, harm to the patient was not reported or substantiated in the clinical learning contracts. PAEs were discovered after the fact. The transgression had already occurred. It was confirmed by the CI and/or the buddy RN and then recorded in the clinical learning contract. Furthermore, it was often simply good fortune that no harm was incurred by the patient during the course of a PAE.

On [certain date] the IV was left open. She [student] was helping a nurse on the adult side of the ward. She changed the IV for the patient, then opened the clamp to reset the drip-rate, got distracted and did not reset the drip-rate. This

⁶ P = participant; A = age; F/M = gender (male or female); I = international student

was a post operative patient. No harm to patient was incurred. Student was told not to report to the ward for [certain date] shift because of unsafe practice (P-57,A-24,F).

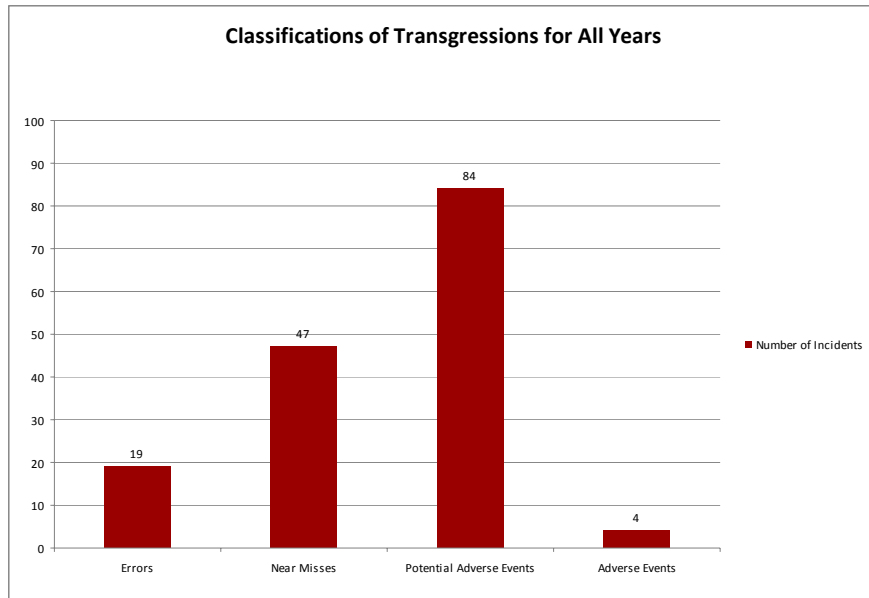
On (certain date) drew up and administered Morphine 10 mg IV. The order on the MARS [Medication Assessment Summary] sheet clearly read, "Morphine 2.5 to 5 mg IV" (P-46, A-41, M).

- (iv) Adverse events (AE) were events which occurred when a student's action precipitated a negative impact on the patient's health and well-being, the patient was directly placed at risk and was reportedly harmed in some way. This harm was clearly recorded in the clinical learning contracts. The difference between a PAE and an AE was the documentation of patient harm in the clinical learning contracts. Both events were considered serious in terms of potential or actual harm incurred to patients.

She [student] failed to provide a patient with Osteomyelitis with an analgesic medication following [the patient's] verbal complaints of pain. The patient was in distress. (P-45, A-21, F).

Total Distribution of Transgression Classifications. Transgressions from Years Two (n=5), Three (n=117), and Four (n=32) were combined to determine overall transgressions for the data set. These transgressions were precipitated by 37 nursing students (29 females and 8 males). International students were a subset of this sample (7 female and 4 male students). The type of transgression is presented in the following chart, i.e., Errors, Near Misses, Potential Adverse Events, and Adverse Events.

ES Chart 1. Overall: Type of Transgression



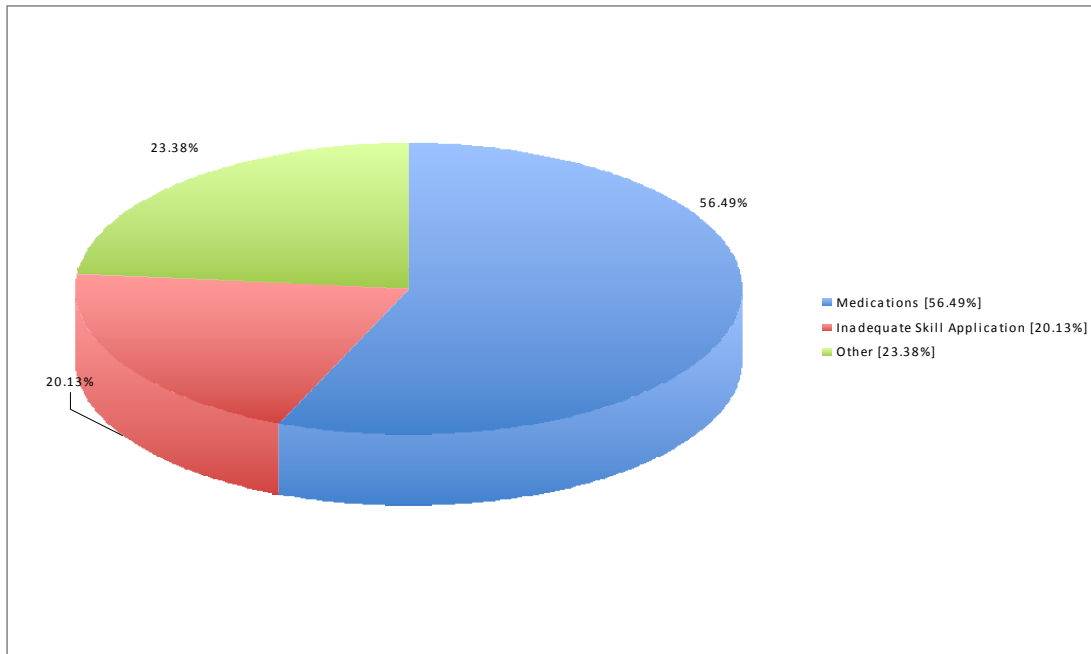
Nursing students in the transgression sample precipitated 154 patient safety events. Errors (E) comprised 12.34% (n=19) of the events; Near Misses (MNs) accounted for 30.52% (n=47) of the total transgressions; and, Potential Adverse Events (PAEs) constituted more than one half of the total transgressions (54.55%; n=84). Adverse Events (AEs) made up 2.60% (n=4) of all the transgressions arising from the learning contracts.

- *Although 30.52% (n=47) of events were good catches and were thusly intercepted by the clinical instructor and/or the student's buddy RN, 57.14% (n=88) events occurred that placed patients directly at risk for harm.*

NOTE: There were likely many NMs that (i) were not recorded in the clinical learning contracts, and (ii) occurred on the clinical units, but with students who were not placed on clinical learning contracts. Thus, in this data set, the number of PAEs outnumbered the occurrences of NMs; however, this may not be indicative of the true number of NMs occurring among nursing students. That observation made, it is of concern that 88 events went "sight unseen" by the CI or the buddy RN and placed patients at risk for harm.

- The most frequently occurring clinical transgression occurred in the category of Medications (56.49%; n=87). Understanding the “why” of medication errors among undergraduate nursing students includes examination of individual and systems-based factors (Page & McKinney, 2007). This is an area requiring further research.

ES Chart 2. Overall Transgressions by Type



In terms of the actual number of transgressions by type, the distribution was as follows: Medications (n=87), Other (n=36), and *Inadequate Skill Application* (n=31).

II. Transgressions by Gender, Student Status, and Age

Overall Transgressions by Gender and Student Status.

- Male nursing students (21.62%; n=8) precipitated 37.66% of all the transgressions in the data set and were thusly over-represented.
- Male nursing students were responsible for 46.43% (n=39) of all PAEs—whereby patients were placed at direct risk for harm.
- International male nursing students (n=4) precipitated 25.64% (10/39) of all the male-responsible PAEs.

- *International females comprised 24.14% of all the females in the transgression sample, but precipitated 36.36% of all female-responsible Errors; 40.54% of all female-responsible NMs; and 33.33% of all female-responsible PAEs.*

ES Table 3. Transgression Type by Gender and Student Status

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total # of Transgressions	Transgressions %
Men (n=8)	8	10	39*	1	58	37.66%*
Women (n=29)	11	37	45	3	96	62.34%
Overall (n=37)	19	47	84	4	154	100%
<hr/>						
Men (international) # (n=4)	3	7*	10	1	21*	13.63%
Women (international) (n=7)	4*	15*	15*	0	34	22.08%
International Overall (total) (n=11)	7	22	25	1	55	35.71%

*Areas of concern; males (21.62% of the transgression sample) precipitated 37.66% (n=58) of the total number of transgressions. Males were also responsible for 46.43% (n=39) of the PAEs. International male nursing students were over-represented in that they precipitated 25.64% of all the male-responsible PAEs; and, 36.21% of all the male-responsible transgressions. International nursing students (male/female) were 29.73% of the sample (11/37), but precipitated 35.71% of all the transgressions.

International students are a sub-set of the total transgression sample. Their transgressions are included in the overall total and are highlighted separately in the bottom half of this table.

International students were accountable for 35.71% (n=55) of the total transgressions. Male international students (10.8% of the sample) precipitated 13.63% (n=21) of the transgressions in the data set, were held responsible for 25.64% of all the male-precipitated PAEs, as well as 36.21% of the total male-precipitated transgressions. Collectively, male nursing students were accountable for 37.66% (58/154) of all the transgressions. Thus, and in this

sample, male nursing students and international nursing students appeared over-represented in the transgression data set. The over-representation of male nursing students warrants commentary.

- *Males and international male nursing students may have been socialized to be more autonomous, to take independent action and consequently more risks. This socialization and risk-taking behaviour may be “at play” in their nursing care.*
- *Masculinities may also have been a contributing factor whereby male nursing students hesitated to ask for help, particularly from their female clinical instructors. Asking for assistance may be constituted as a weakness among certain masculinities. Similarly, some male nursing students may have had difficulty with female authority figures and they were thusly reluctant to consult their clinical instructors and obtain support or guidance from them.*
- *Socio-cultural differences may also account for the over-representation of male nursing students, particularly with respect to the international male students.*
- *Alternatively, clinical instructors (almost exclusively female) may have made assumptions about their male students, i.e., males were more independent, competent, and thus required less supervision than female students.*

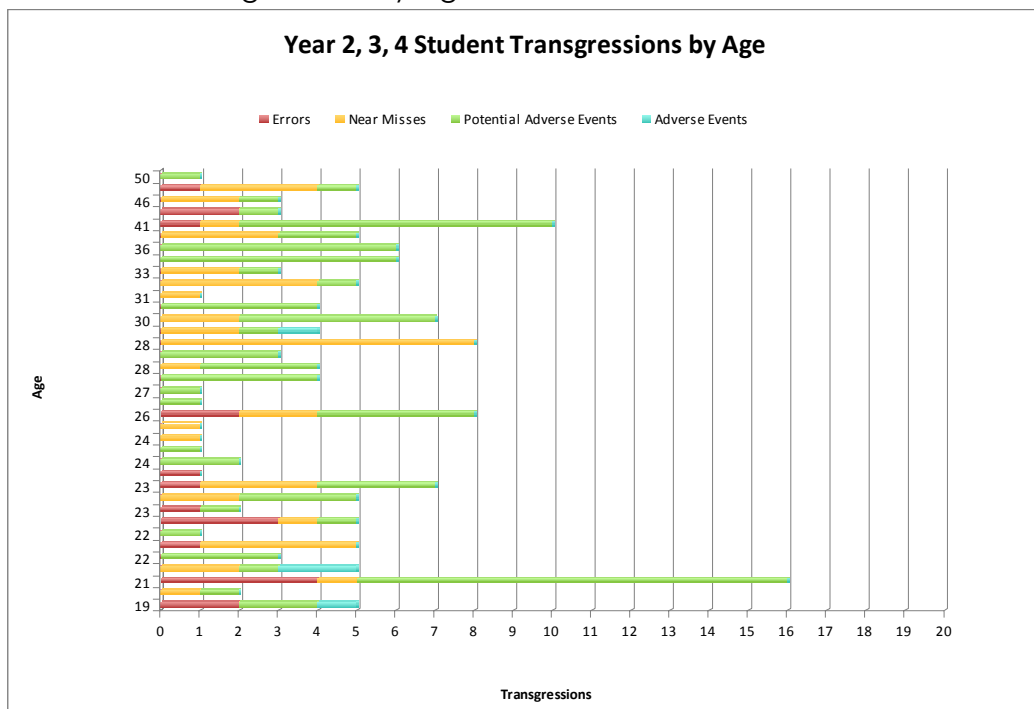
It is also possible that male nursing students were indeed more closely supervised compared to their female counterparts—and thus, more events were noticed by the clinical instructors. The PAE data, however, lend less support to this interpretation. CIs and/or buddy RNs discovered the PAEs “after the fact”, i.e., the transgressions had already occurred.

- *Additional research is required to better understand the relationship between gender and patient safety concerns among undergraduate nursing students. This is especially important as nursing shifts its profession demographics, i.e., the recruitment of increasing numbers of non-traditional students, including men, immigrant or new Canadians, second career and/or mature students, and international students.*

Overall Transgressions by Age: Male and Female Students Combined. The age of the nursing students in the transgression sample ranged from 19 to 50; the average age was 29.14. The median was 27. Thus, the sample was older, i.e., most of the learning contracts involved students who were not immediate graduates from high school. In terms of designating young and older age status, the data appeared to naturally split into younger (≤ 26) and older (≥ 27) year cohorts. In examining the overall transgressions by age and mixed gender, the following patterns were observed:

- *Errors occurred more often among younger nursing students (≤ 26).*
- *Younger nursing students (≤ 26) were also accountable for the majority of Adverse Events*
- *Near Misses were most often precipitated by older nursing students (≥ 27).*
- *Older nursing students (≥ 27) were responsible for the majority of the Potential Adverse Events.*

ES Chart 3: Transgressions by Age



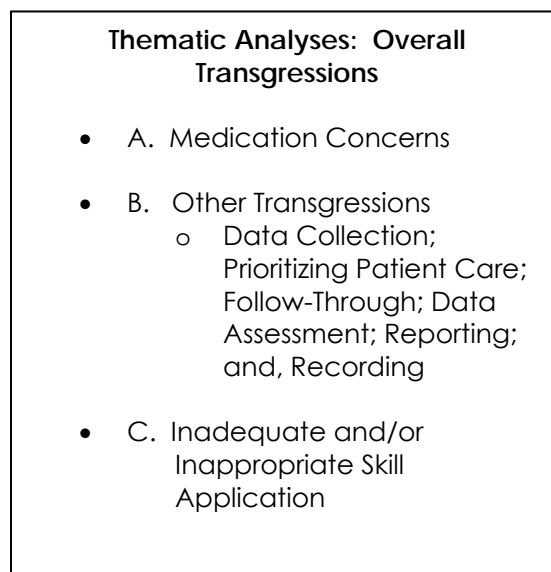
- *In this sample of clinical learning contracts, older nursing students (≥ 27) were at greater risk of precipitating PAEs. Further research is needed to better understand this finding.*

III. Thematic Analysis: Overall Transgressions

Three major themes were generated from the transgression data set:

Medication Concerns; Inadequate and/or Inappropriate Skill Application; and, Other. This last category was an amalgam of concerns from Year Three (data collection, prioritizing patient care, follow-through care) and Year Four (data assessment, reporting and recording data/information). The transgressions, as organized by these themes, are listed in Figure 1.

ES Figure 1.



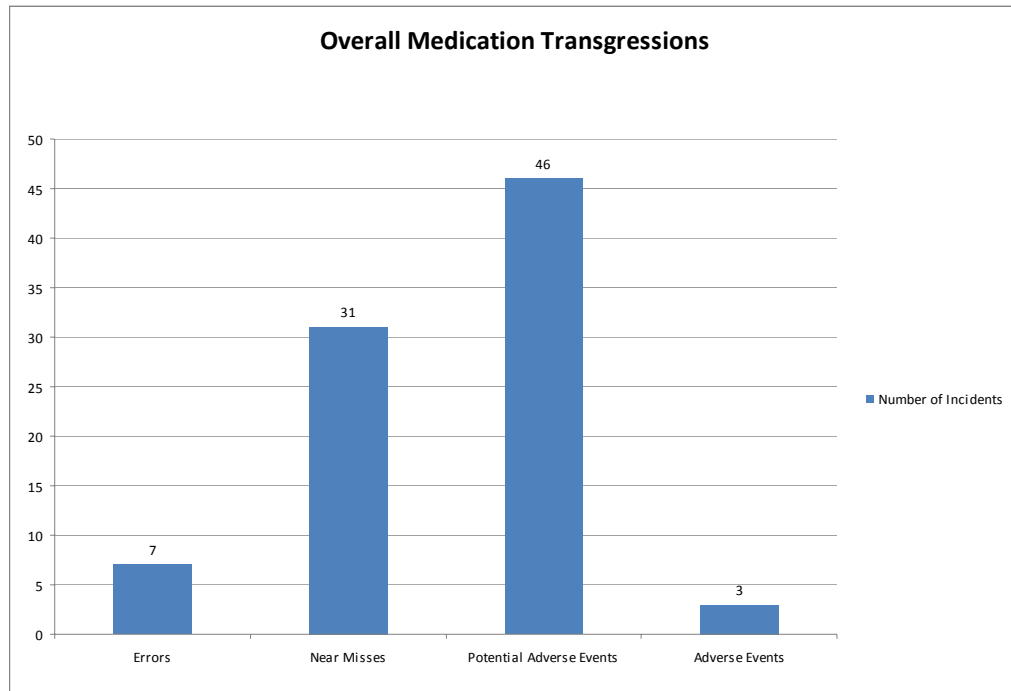
A. Medication Transgressions

i. Medication Concerns: Classifications

Medication concerns accounted for 56.49% (n=87) of the total clinical transgressions and comprised the theme with the greatest number of transgressions. Of the 87 medication-related transgressions, CIs and/or buddy

RNs intercepted 35.64% (n=31) of them. However, a greater number of Potential Adverse Events were missed, i.e., 56.32% (n=49).

ES Chart 4: Overall Medication Transgressions



- Although just over one-third of all medication transgressions were intercepted (NMs) and thus prevented harm to patients, 56.32% of the medication transgressions (PAEs) went “unchecked” and placed patients at risk for harm.

ii. Medication Transgressions: Gender and Student Status

- Males were disproportionately responsible for precipitating PAEs in relation to medications. Although they constituted 21.62% of the transgression sample, they were held responsible for 47.8% of all the medication PAEs.
- Males were also disproportionately represented with respect to the total number of medication transgressions, i.e., they contributed to 33.33% of the medication concerns.
- International females comprised 18.92% of the transgression sample; yet, they precipitated 38.71% of all the medication NMs

iii. Medication Transgressions: Areas of Concern

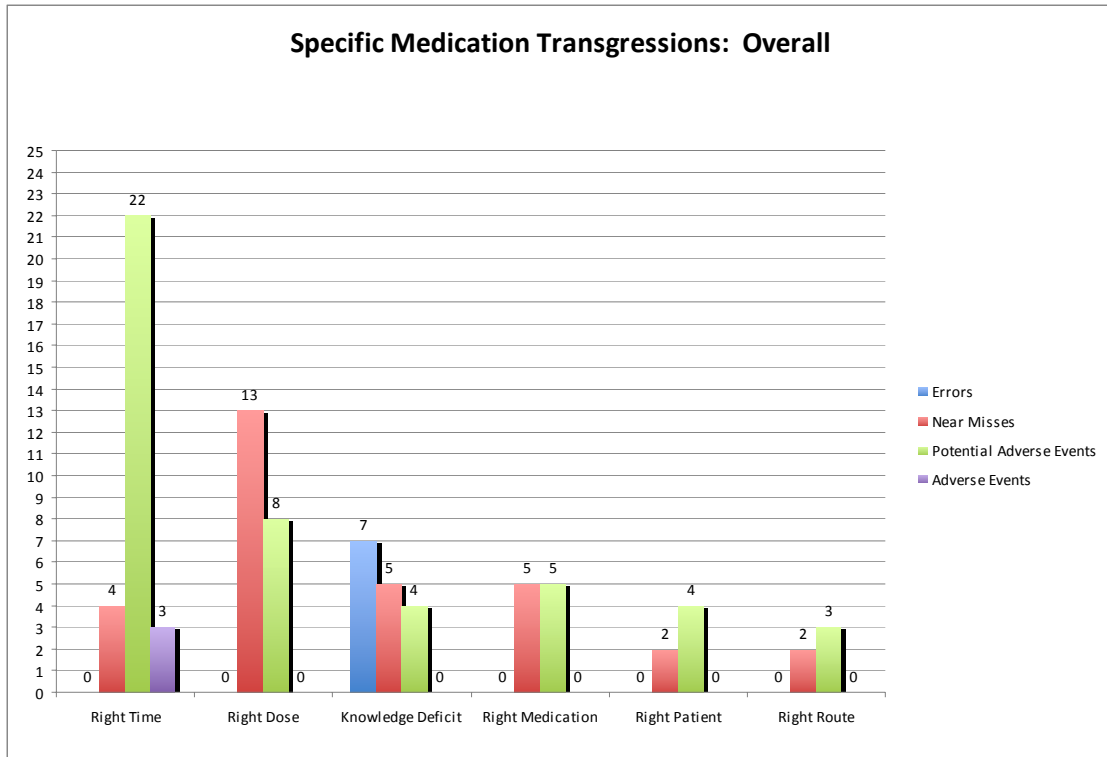
- *The majority of the medication transgressions occurred in the category of Right Time (33.33%; n=29).*
- *PAEs were the most prevalent in the category of Right Time (48.88%; 22/45).*
- *NMs occurred with 34.48% (30/87) of all the medication transgressions.*
- *PAEs and AEs occurred in 56.32% of all the medication transgressions (49/87). Thus, more than half of the transgressions (56.32%) occurring in the area of medication administration placed patients at direct risk for harm.*

Supportive categories for the types of medication concerns were rank ordered and organized around the *Five Rights of Medication Administration* (in addition to another category—*Knowledge Deficit*). There were no medication transgressions in Year Two and thus data reflect the combination of Years Three and Four.

- In terms of medication transgressions, the most to least problematic areas were as follows:
 - **Right Time** (Incorrect time of administration and inappropriate holding of medication);
 - **Right Dose** (Incorrect dose; underdose/overdose; incorrect calculations and/or concentrations);
 - **Knowledge Deficit** (Medication; treatment; narcotic disposal);
 - **Right Medication**(Incorrect medication; incorrect preparation (mix) and not confirming medications);
 - **Right Patient** (Not checking patient identity); and,
 - **Right Route** (Incorrect route).

The following chart reveals the specific distribution of transgressions among these six categories:

ES Chart 5. Specific Medication Transgressions of Year Three and Year Four Nursing Students*



* There were no Year Two medication transgressions

The *Right Time* category constituted 33.33% (n=29) of all medication transgressions. The majority of PAEs were found in this category, i.e., 48.88% (22/45). Only four NMs were observed in the category of *Right Time*; this is contrasted with the 22 PAEs. The only medication AEs (n=3) were located in this category.

- The majority of the medication transgressions concerned the “right time” of administration. This suggests that the nursing students likely experienced challenges related to the organization and prioritization of their nursing care. In addition, given the acute-care practice settings (pediatrics, medicine/surgery), students may have also struggled with the knowledge and skills of more complex medication administration (eg., multiple/concurrent IV medications and their preparation).

Textual excerpts illustrating the various categories are provided in each particular program Year. (See Section One, Case Studies, Year Three Nursing Students, III. Thematic Analysis: Year Three Transgressions; and, Section One, Case Studies, Year Four Nursing Students, III. Thematic Analysis: Year Four Transgressions).

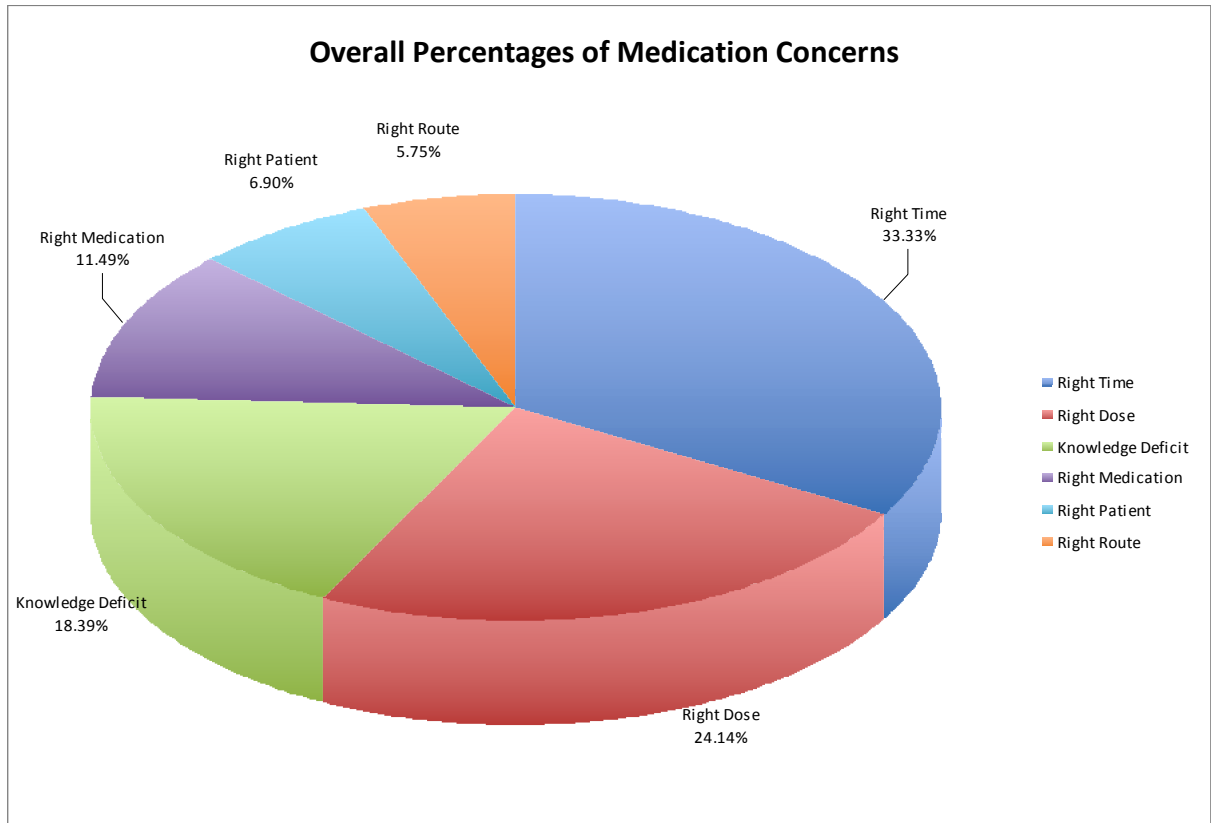
NMs were most often recorded in the category of *Right Dose*. Clinical instructors, preceptors, buddy RNs, and/or other staff nurses caught or prevented 61.90% (13/21) of medication transgressions related to the *Right Dose*.

- *38.10% (8/21) medication transgressions in the category of Right Dose, were not caught or intercepted by clinical instructors, preceptors, buddy registered nurses, or staff nurses, and patients were consequently placed at direct risk for harm.*

The category of *Right Dose* consisted of 24.14% of the overall medication transgressions.

- *This category, Right Dose, warrants further research to better understand why nursing students are administering (overdose/underdose) incorrect medication dosages to patients.*

ES Chart 6. Overall Medication Concerns As Percentage of Total Medication Transgressions.



The third ranked category was *Knowledge Deficit* (18.39% of all medication transgressions). Of interest, this is the only category where Errors occurred. For example, a student's medication cards lacked information about the medications she administered to her patient. There were five NMs and four PAEs associated with this category.

The remaining three categories, *Right Medication*, *Right Patient*, and *Right Route* reflected 11.49%, 6.90% and 5.75% of the total medication transgressions respectively. There were also 12 PAEs distributed among these three categories.

Each of these six areas have significant implications for the safety and well-being of patients. The interview data revealed that specific medications were more frequently implicated among student medication transgressions. Participants observed that heparin and insulin were higher risk and problematic for the nursing students.

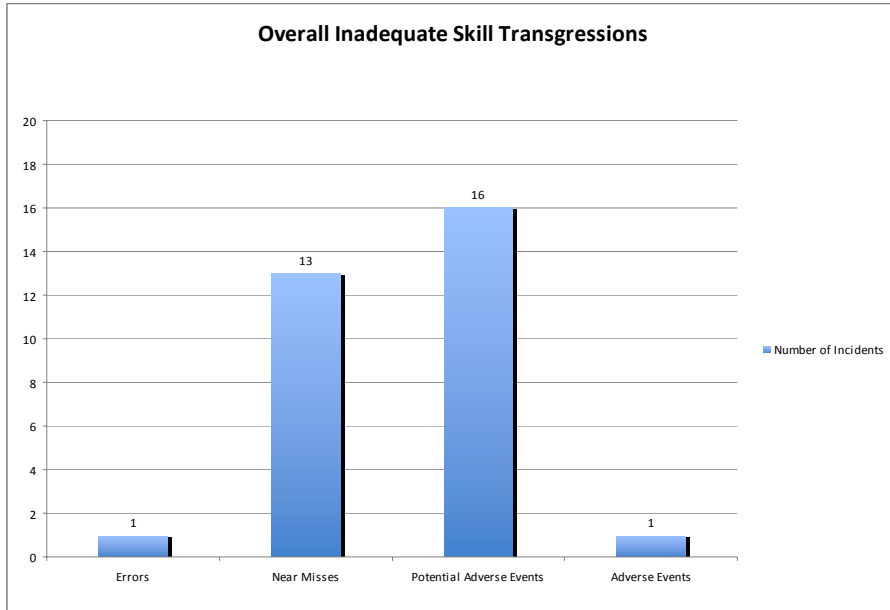
B. Inadequate and/or Inappropriate Skill Application

The second major theme arising from the learning contracts was *Inadequate and/or Inappropriate Skill Application*. Students' unsafe application of skills created patient safety concerns. Again, qualitative data (textual excerpts) illustrating these transgressions are located in the following sections of the Report: Section One, Case Studies, Year Three Nursing Students, III. Thematic Analysis: Year Three Transgressions; and, Section One, Case Studies, Year Four Nursing Students, III. Thematic Analysis: Year Four Transgressions.

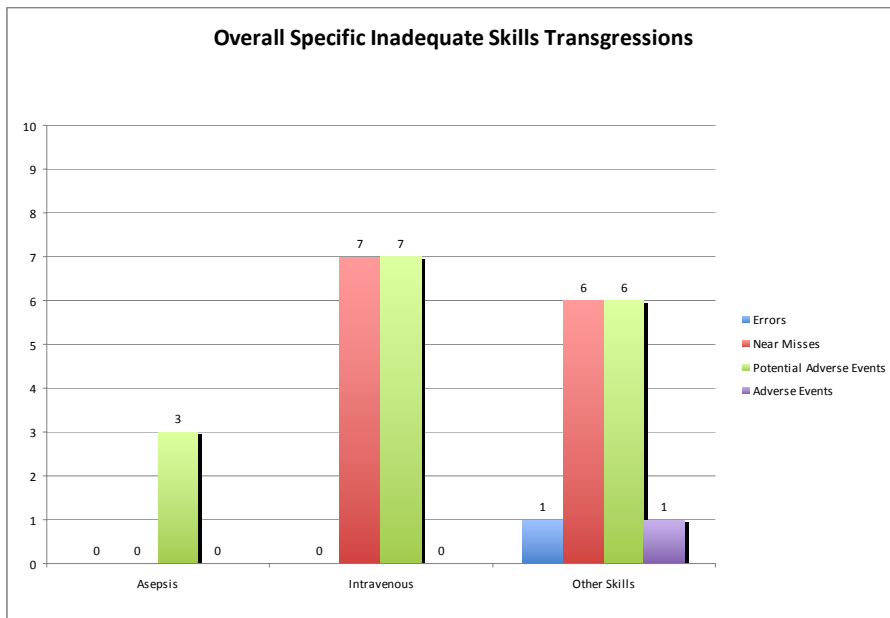
i. Inadequate and/or Inappropriate Skill Application: Classification

- *PAEs were the most frequently occurring transgression (51.61%; n=16) regarding unsafe skill application.*
- *PAEs were related to the following inappropriate application skills: intravenous (n=7), asepsis (n=3), and other (n=6).*
- *NMs occurred in 41.94% (n=13) of the transgressions. However, more than half of the transgressions in this thematic area (51.61%) placed patients at direct risk for harm. One Error (3.23%; n=1) and one Adverse Event (3.23%; n=1) were recorded in the learning contracts.*

ES Chart 7. Unsafe Skill Application by Transgression Type: Errors, Near Misses, and Potential Adverse Events



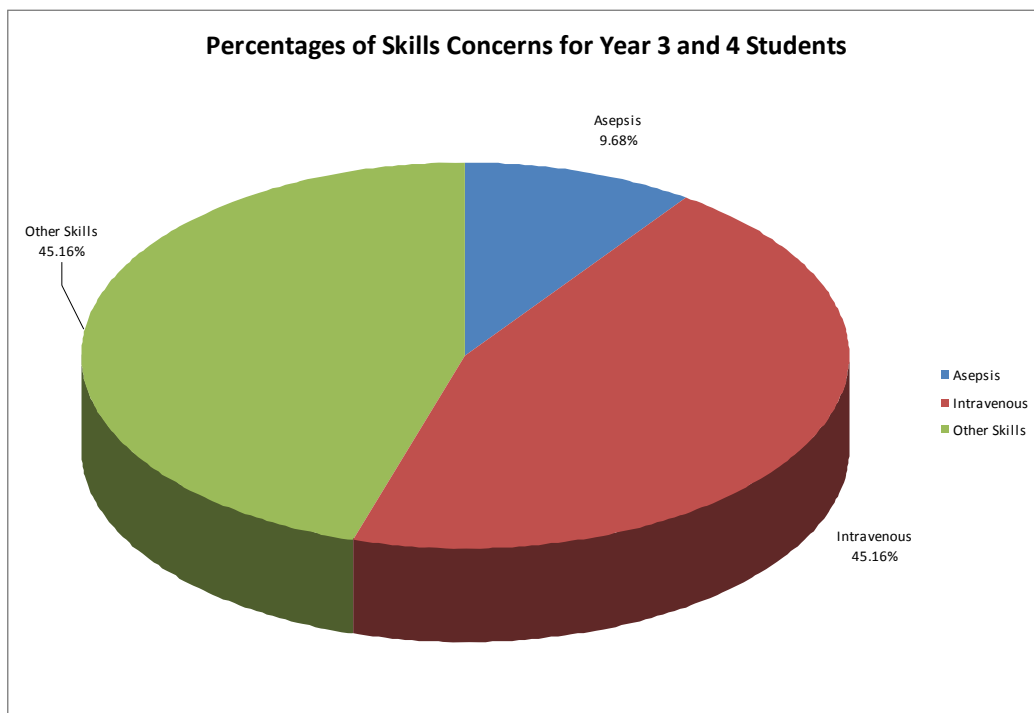
ES Chart 8. Transgression Classification by Skill Category



The three main areas of concern with respect to inappropriate or unsafe skill application were:

- Intravenous devices (peripheral lines [IVs], central lines, Patient Controlled Analgesia [PCA] pumps, and other kinds of pumps);
- Other skills (eg., patient transfer, traction, naso-gastric [NG] tubes, oxygen tubing, and ventilation/suctioning); and,
- Asepsis (dressing changes, wound care, piercing of a Jackson-Pratt [JP] drain).

Chart 9. Percentages of Transgressions by Skill Type



The majority of the transgressions regarding inadequate and/or inappropriate skill application (46.67%) centered around intravenous devices. Students lacked proficiency and knowledge with respect to these devices, for example, the need to flush the saline lock (interlink) when administering medications on a pediatric unit. *Other skills* (45.16% of the transgressions in this category) were next in terms of rank ordering. There were a range of skills in this sub-category and they included, patient transfer, traction, NG tubes, oxygen tubing, and

ventilation/suctioning. Finally, skills related to asepsis comprised 9.68% of the transgressions in this category. For example, students contaminated their sterile fields when engaging in dressing changes.

ii. Inadequate Skill Transgressions: Gender and Student Status

- *Male nursing students were responsible for 41.94% of the overall transgressions in the data set; yet males comprised 21.62% of the transgression sample.*
- *Male nursing students precipitated 50.00% of all the PAEs.*
- *International male nursing students, who comprised 10.80% of the sample, contributed to 62.5% of the male-precipitated PAEs and 75% of the male-precipitated NMs. International male nursing students were accountable for 69.23% of the total male-precipitated transgressions. International male nursing students were over-represented in this category.*

In this sample of clinical learning contracts, international male nursing students were at high-risk for precipitating transgressions related to skills.

- *International female nursing students, who comprised 18.90% of the sample, contributed to 29.03% of the total transgressions. However, they contributed 50.00% of the total female-precipitated transgressions.*
- *International female nursing students were accountable for 55.56% of the total female-precipitated transgressions in the category of NMs; they were also responsible for 50% of the total female-precipitated transgressions with respect to PAEs.*
- *In this category, International nursing students were accountable for 61.54% of all the NMs and 56.25% of all the PAEs.*

C. Other Transgressions

In the previous two thematic areas, data were readily merged from Years Two, Three, and Four. There were transgressions related to medication and unsafe skill application across the three years. With respect to this final thematic area, data were clustered from Years Two and Three and constituted *Other Transgressions*.

This theme comprised three elements: failure to collect data, inability to prioritize nursing care, and a lack of follow-through regarding nursing care. Data were also clustered from Years Two and Four and constituted *Assessment, Reporting, and Recording*. This theme consisted of transgressions that entailed incomplete or erroneous assessments of patients, and failure to report and/or record assessment findings. For example, one student assessed a patient as having chest pain, but did not record or report this finding to the clinical instructor or any other RN on the unit. Other transgressions included not recording vital signs and not documenting the whereabouts of a patient who was away from the unit on a day pass. Qualitative data illustrating these thematic areas are detailed elsewhere in the Report (See Year Two, and Transgressions for Years Three and Four).

i. Classification of 'Other Transgressions'

Transgressions were coded as follows:

- Errors, 30.56% (n=11);
- Near Misses, 8.3% (n=3);
- Potential Adverse Events, 61.11% (n=22); and
- Adverse Events, 0.00% (n=0).

Of note are the two categories of Errors and PAEs. In terms of relative percentages, these transgression types were the highest in this thematic area compared to medications and inappropriate skills.

ii. Gender and Student Status by Transgression Type: Errors, Near Misses, and Potential Adverse Events

- *Males, at only 21.62% of the sample, were responsible for 44.44% (n=16) of all the transgressions in this thematic area; males also contributed to 40.90% (9/22) of all the PAEs.*
- *International male nursing students precipitated 44.44% (4/9) of all the male-responsible PAEs. International males constituted 10.81% of the transgression sample.*
- *International female nursing students, 18.92% of the sample, contributed to 46.15% (6/13) of all the female-responsible PAEs.*
- *International nursing students contributed to 41.67% of all the transgressions in this thematic area, including 45.45% of all of the PAEs; international students comprised 29.73% of the transgression sample.*

Concerns about the Clinical Instructor Model

Data from the case studies and the interviews confirm concerns related to the clinical instructor model. This study revealed that there are numerous fault lines associated with the model. These fault lines are at real risk for fracturing; indeed such fracturing can quickly transpire. The clinical instructor model, in its current form, may not be “best practice” with respect to patient safety.

- *Research is needed to examine the efficacy and effectiveness of the model from a patient safety perspective. How well is this model performing? What changes need to be made in the short- and longer-term to stabilize its fault lines? What system-based changes (program, curriculum) are necessary to ensure a more integrated model of clinical instruction for nursing students?*

In the following table, the three thematic areas (medications, inappropriate skills, and other) were compared with respect to Errors, Near Misses, Potential Adverse Events, and Adverse Events. Note that PAEs were consistently higher, both in terms of relative percentages and actual occurrences, across the three

thematic areas. Some caution is warranted with the interpretation of the data here as the number of NMs was likely under-reported, in the clinical learning contracts, within the clinical context, and in the day-to-day clinical experiences of nursing students.

ES Table 4. Percentage Comparison of Transgressions by Theme

Thematic Area	Errors (%)	Near Misses* (%)	Potential Adverse Events* (%)	Adverse Events (%)
Medications	8.04% (n=7)	35.63% (n=31)	52.87% (n=46)	3.45% (n=3)
Inappropriate Skills	3.23% (n=1)	41.94% (n=13)	51.61% (n=16)	3.23% (n=1)
Other	30.56% (n=11)	8.33% (n=3)	61.11% (n=22)	0.00%

*Of concern given that more patients were placed at risk for harm (PAE situations) compared to those who were protected by NMs. Although 47 transgressions were intercepted (NMs), 88 transgressions occurred whereby patients were directly placed at risk for potential harm or were harmed.

- *NMs were fewer than PAEs across all three thematic areas. PAEs, which were not intercepted and which thus placed patients in harms way, were the majority of transgressions in each of the thematic areas—both in terms of relative percentages and absolute numbers.*

Given that patients are potentially exposed to harm with an occurrence of a PAE, the data raise some questions concerning the current model of clinical supervision (i.e., one clinical instructor responsible for 6 to 8 or more nursing students). Of course, this standpoint is informed by a data set which focused on students who struggled with their clinical practice. However, the CI model does have some significant fault lines which can quickly fracture and place students at risk for error and patient safety concerns. (See also ES Figure 2). The following scenario, based on the study findings, illustrates this systems-based phenomenon in action.

- The pool from which potential nursing students have been traditionally drawn is changing; there are now many more English as Second Language

[ESL] students, immigrant Canadians, international students, and men enrolled in nursing programs. Some nursing programs in Canada, in order to meet enrolment targets, are accepting students who meet minimal admission standards. Students, who struggle clinically, whether from the traditional or non-traditional student pools, will necessarily draw heavily on the CI's time, energy and efforts and thus attenuate the CI's supervisory/supportive reach with the other students. The presence of two or more weaker students further attenuates this reach.

Concurrently, the casualization of the nursing workforce on the unit (which contributes to staffing instability), the inexperience of the clinical instructor as an educator, the increased acuity of patients on the unit, the presence of complex medication treatment regimes, and the lack of confidence and basic skill preparation among students combine and exert real pressures on the CI and, by default, the model. Under such pressures, these fault *lines fracture*. Students are then placed at risk for precipitating patient safety events.

Data from the focus group interviews also support these observations. The majority of participants voiced concerns with the CI model. These concerns were echoed and validated across the individual and focus group interviews.

- CIs are the fulcrum point between theory and practice, and between the education and practice contexts; they are central to the education of nursing students. And yet, CIs share many of the following characteristics: they may be inexperienced as educators; they may be inexperienced (newly graduated) as clinicians; they are a transient staff population with a concomitant high turnover rate; the salaries associated with these positions are not necessarily competitive or attractive; CIs are often 'at a distance' from the nursing program proper, i.e., not considered as bona-fide faculty members; they are subject to an increasingly diverse and complex student population; they may be "parachuted" onto a unit and lack the collegial relationships that are absolutely integral to patient safety and the students' safe care of patients; and, they may be reluctant to initiate clinical improvement plans and/or fail students.

This model of clinical supervision, which has been in place within nursing education for many decades, warrants evaluation in light of the significant changes which have occurred in the education and practice settings.

SECTION TWO: FOCUS GROUP INTERVIEWS

Overview of Findings

Findings from the focus group interviews were synthesized and summarized into the following five tables. Common perspectives from across the interview data set were aggregated and ranked ordered. The three highest ranked concerns from each area of concern are discussed in this section of the Report.

Participants identified patient safety risk factors, i.e., those factors placing nursing students at risk for precipitating patient safety events and/or placing patients at risk for harm. These factors centered on the following:

- Clinical instructor model;
- Concerns about students;
- Lack of preparation for practice (students); and, the
- Nursing program model.

Clinical Instructor Model (See Table 5). Most of the participants (5/7 groups) independently agreed that there are limitations associated with the CI model. Clinical instructors may be inexperienced as educators. Participants recognized that clinical instructors could be accomplished clinicians. Concerns were raised regarding their preparation (knowledge, skills, and experience) to serve as educators in the practice setting. Although most nursing programs offer (mandatory) orientations to new CIs, these sessions may not compensate for deficits related to knowledge, skills, and experience. The second ranked concern (4/7 groups) identified that the number of students per clinical instructor potentially undermined patient safety. One weak student potentially limits the supervisory reach of the clinical instructor, and disadvantages the other students. This attenuation of supervisory reach could be further increased if the unit was

subject to casualization of the nursing workforce, i.e., a lack of consistency in the presence of buddy RNs. The third cluster of concerns (suggested by 3/7 groups) pertained to (a) lack of fit between the clinical instructor's clinical expertise and the practice unit on which she/he supervised students; (b) the high turnover of clinical instructors; (c) reluctance of clinical instructors to fail students; and (d) difficulty recruiting and hiring clinical instructors.

ES Table 5: Patient Safety Risk Factors

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Concerns about the Clinical Instructor Model								
1	Clinical instructors may not be inexperienced as educators	X	X	X	X			X
2	One clinical instructor for too many students	X	X			X	X	
3	Clinical instructors may supervise students outside their area of clinical expertise	X		X		X		
	High turnover of clinical instructors		X	X	X			
	Clinical instructors reluctant to fail students or write up student occurrence reports		X				X	X
	Difficulty recruiting and hiring clinical instructors, resulting in a limited selection			X	X	X		
4	Not enough guidance from clinical instructor	X					X	
	Clinical instructors are inconsistent in their approaches with students	X	X					
	Lack of communication between clinical instructors		X		X			
	Lack of communication between clinical instructors, staff, and students	X				X		
5	Lack of expertise and skill acquisition				X			
	One struggling student per clinical instructor decreases supervision for all other students					X		
	Clinical instructors inexperienced with ESL students				X			

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk manager

Based on the interview data, the strengths and limitations associated with the clinical instructor model were assembled into the following figure.

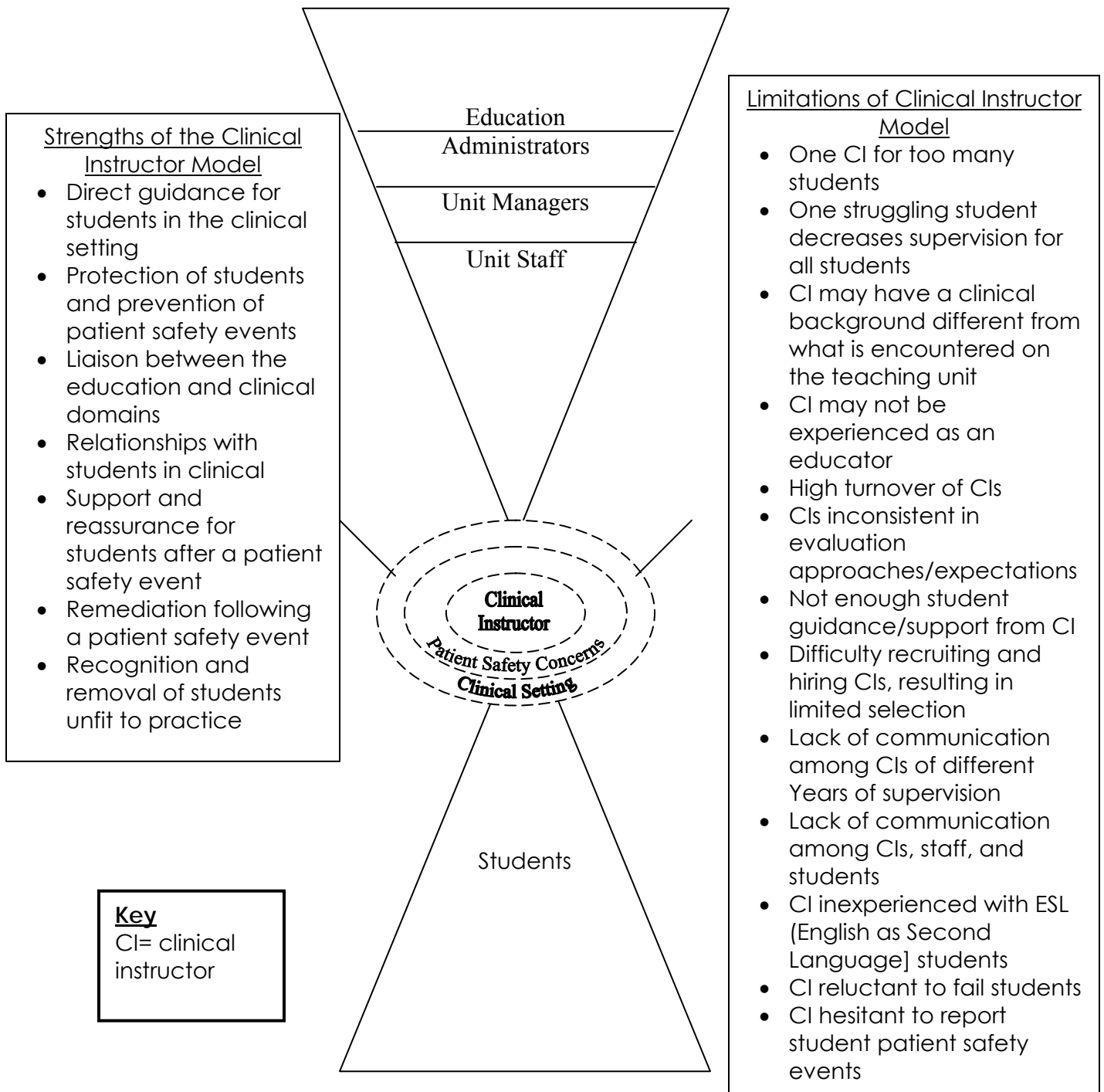


Figure 2: Clinical Instructor Model: Strengths and Limitations

Participants also imparted strengths to the CI model. However, they noted many more limitations or concerns with it. The case study data from Section One also suggest that unaddressed fault lines and fractures associated with the CI model undermine patient safety. In particular, there were 88 PAES whereby patients were placed at risk for harm.

- *In this sample and out of a total of 154 events, there were 47 Near Misses (30.52%) and 88 Potential Adverse Events/Adverse Events (57.14%). Under the auspices of the CI model, and in this particular data set, many patients were placed at risk for harm.*

Concerns about Students (See Table 6). With the exception of administrators, all the other participant groups (6/7) characterized students as nervous, anxious, uncertain, and fearful.

- *Although it is reasonable to expect students (nursing, medicine, pharmacy, etc.) to have some apprehension in relation to clinical experiences, the participants in this study were concerned that excessive anxiety and fear contributed to patient safety concerns among the nursing students.*

The second ranked patient safety risk factor (5/7 groups) suggested that students were operating in a culture of fear and not one of patient safety; certainly in a transition of culture from fear to safety. In addition, participants suggested that students did not understand the place of occurrence reports—and that students were frightened of repercussions if they made an error or precipitated a patient safety event. The third ranked patient safety risk factor (3/7 groups) characterized students as stressed, vulnerable, and fatigued. Students, faculty members, and staff nurses observed that students took risks because their clinical was graded (3/7 groups). Collectively, these risk factors placed students at risk for patient safety concerns.

ES Table 6: Patient Safety Risk Factor: Concerns about Students

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Concerns about Students								
1	Nervous and uncertain; fearful and high anxiety	X	X		X	X	X	X
2	Students frightened of repercussions when error occurs, do not understand limitations of occurrence reports	X			X	X	X	X
3	Students are stressed, vulnerable, and fatigued	X				X	X	
	Easy to rush practice when graded	X			X		X	
4	Careless and overconfident		X	X				
	Graded when asking questions	X					X	
	Students' inability to refuse when nurses expect tasks of them that they are unprepared to perform		X					X
5	Frightened into doing things	X						
	If technically derived, assumed errorless		X					

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk managers

Lack of Preparation for Practice (See Table 7). The majority of participants (5/7 groups; students, clinical instructors, faculty members, unit managers, and staff nurses) observed that students lacked basic skill preparation. It is not uncommon for students to express this view; however, other participants voiced concern about basic skill preparation among nursing students.

The second risk factor consisted of four factors. The first of these factors, *Limited time and access to the skills lab*, was inconclusive. Three groups (students, clinical instructors, and staff nurses) suggested that students lacked adequate access to the skills lab. In contrast, administrators and faculty members indicated that students did have adequate access to the skills lab. That certain

equipment was available on units, but missing from the skills lab, was noted by three groups (students, unit managers, and staff nurses).

- *The absence of a formal, systematized feedback loop between the education sector and the clinical sectors, with respect to clinical transgressions was of concern to three groups; clinical instructors, unit managers, and the risk managers.*

The 4th patient safety factor in this constellation of factors concerned the lack of critical thinking among nursing students. Ranked third by 2/7 groups were two factors; limited time spent by students in the assessment lab, and faculty members were removed or distant from clinical.

- *Collectively, these factors spoke to students' lack of preparation for practice as a patient safety risk factor.*

ES Table 7: Patient Safety Risk Factor: Lack of Preparation for Practice

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Lack of Preparation for Practice								
1	Lack of basic skills	X	X		X	X	X	
2	Limited time and access to skills lab	X	X	*	*		X	
	Missing equipment in the skills lab	X				X	X	
	Educational sector does not follow-up on students' clinical experience to improve preparation		X			X		X
	Lack of critical thinking		X	X			X	
3	Lack of time in assessment lab	X					X	
	Faculty are out of touch with clinical practice	X			X			
4	Unrealistic lab setting	X		*	*			
	Students supervising students in the skills lab		X					

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk manager

* Contrary to expressed concerns, administrators and faculty believed there was both ample time and access to the skills lab. Furthermore, they believed it was a good simulation of the clinical setting.

Concerns about the Nursing Program Model (See Table 8). Participants (6/7 groups; students, clinical instructors, faculty, unit managers, staff nurses, and risk managers) observed that the transition from skills lab to the realities of the clinical setting was not smooth. The lab was characterized as quiet and calm; students could focus on one particular skill. In contrast, students encountered the “hurly burly” of the clinical unit while trying to apply multiple and concurrent skills, organize their care, and discern nursing care priorities. Participants also suggested that there was a discrepancy between how skills were taught in the skills lab and how they were enacted in the practice context.

- *The second ranked patient safety risk factor concerned inadequate clinical experience for students (5/7 groups; students, clinical instructors, faculty members, staff nurses, and risk managers).*
- *The second factor in this same cluster addressed the concern that clinical staff were not aware of the nursing program's curriculum and the students' learning expectations while on the unit (5/7 groups; students, clinical instructors, faculty members, unit managers, and staff nurses).*
- *The third ranked patient safety risk factor centered on patient safety proper—and its lack of formal development within the curriculum (4/7 groups; administrators, faculty members, staff nurses, and risk managers).*

ES Table 8: Patient Safety Risk Factor: Concerns about the Nursing Program Model

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Concerns about the Nursing Program Model								
1	Inconsistent transition from skills lab to reality; discrepancies in skill application	X	X		X	X	X	X
2	Not enough clinical experience for students	X	X		X		X	X
	Clinical staff do not know nursing program curriculum/expectations	X	X		X	X	X	
3	Patient safety concepts not developed in a distinctive way			X	X		X	X
4	Limited application of communication			X	X			X
	Day-to-day data are buried within the clinical system			X		X		X
	Staff on unit may not be supportive of students	X				X	X	
	Perceived culture of blame within the nursing program	X			X	X		
5	Lack of clarity/consistency regarding students and occurrence reports		X			X		
6	High turnover in course leaders		X					
	Lengthy delay between learning a skill and applying it	X						
	Short clinical rotations and rapid evaluations foster a culture of blame				X			

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk manager

Perceived Patient Safety Concerns. Participants identified patient safety concerns among the nursing students. Of interest is that the case study data confirm that medication was the most common area where clinical transgressions occurred (56.49%; n=87). The category *Other* (data collection, prioritizing patient care, follow-through, data assessment, reporting, and recording) constituted the second most common area of transgressions among the case studies (23.38%; n=36). This paralleled the participants' third ranked

patient safety concern (documentation, charting, and communication).

Inadequate skill application (the third most common thematic area in the clinical learning contracts; 20.13%, n=31) was ranked first by the participants.

Suffice to note that all of the perceived patient safety concerns were found in the case studies (as transgressions, or as nursing care concerns). Interestingly, the exception was “falls.” None of the clinical learning contracts included any transgressions related to patient falls.

ES Table 9: Rank Ordered Perceived Patient Safety Concerns

Rank	Perceived Patient Safety Concerns	Group						
		S	CI	A	F	UM	RN	RM
1	Medication	X	X	X	X		X	
	Lack of Basic Skills		X	X	X	X	X	
2	Judgment/knowledge deficit		X	X		X		X
3	Documentation/charting		X				X	X
	Communication			X	X			X
4	Falls					X		
	Asepsis		X					

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk managers

Opportunities and Future Directions

1. The integration of patient safety competencies into health care curricula, and with respect to this study—nursing curricula—is needed if the next generation of registered nurses is to be more fully aware of patient safety, theoretically and practically. It is imperative that those who are associated with nursing education (students, faculty members, education administrators, unit managers, staff nurses, and clinical instructors) have a solid understanding of patient safety; the findings in this study suggest otherwise.
2. The gap between education and practice remains and was exposed during the course of this study. There is a need to establish baseline data regarding student error; this entails meaningful data sharing between the practice and education contexts, enacted in an ethical and prudent fashion so as to protect the identities of students. It is not only catastrophic events that warrant understanding and action; the day-to-day clinical experiences around patient safety are highly informative. Regular exchanges of such data would be invaluable to nursing programs, host practice agencies, students, and patients. Nursing programs have the opportunity to examine data trends related to student error and adjust curriculum structures and processes accordingly. Nursing programs should be supported in their endeavors to aggregate and analyze this data.
3. Participants identified that communication between the education and practice contexts could be improved.
4. Data arising from clinical learning contracts are invaluable when aggregated and analyzed for trends. This means moving from an individualized to a collective approach in understanding. Clinical learning contracts, or their facsimile, are an important source of data with respect to patient safety. Nursing programs should be encouraged to engage in the establishment and analysis of this data set.
5. The clinical instructor model, while not specifically evaluated in this study, appears to have multiple fault lines that can quickly fracture and place students at risk for patient safety concerns. There is a need to evaluate this model and ensure it is a patient safety “best practice” regarding the clinical education of nursing students. Clinical instructors are the fulcrum point between education and practice. However, their “place” within nursing education remains tenuous. The role of the buddy RN, in relation to the education of students, warrants further clarification.
6. Research is needed with respect to non-traditional nursing students and their respective experiences in clinical nursing education. Men, international students, mature students, English as Second Language

- students, and immigrant Canadians are being actively recruited into the nursing profession. This study suggests that some non-traditional students may be at-risk for patient safety concerns and thus, nursing programs have the opportunity to establish how to best support these students as novice clinical learners.
7. The data from this study suggest students are not solely responsible for clinical transgressions. Nursing programs and students share this responsibility and further understanding of how nursing curricula foster or undermine patient safety among their student populations is needed.
 8. Six out of the seven interview groups characterized nursing students as nervous, uncertain, fearful, and anxious. Five out of seven interview groups noted that students lacked basic skill preparation. While some nervousness and lack of self-confidence is expected among students in the clinical setting, participants were concerned that nursing students were “at risk” for patient safety events in light of these factors. Is this a local or widespread phenomenon? Are nursing programs and curricula fostering self-confidence among students? Are nursing programs and curricula ensuring that students have the basic skills requisite to their clinical learning experiences?
 9. The use of simulation (low- and high-fidelity) is gaining currency in undergraduate nursing programs. This technology may serve students well with respect to skill development, confidence building, and patient safety. Ensuring that students have ready access (including time within their programs) to such technology is important.
 10. Three areas of concern were identified in this study; *medication administration, inadequate and/or unsafe skills application, and other* (data collection, patient assessment, reporting/recording data). These areas warrant further research to establish “best practice” with respect to the education of nursing students. In this dataset (students who were placed on clinical learning contracts), 47 transgressions (Near Misses) were intercepted by clinical instructors, preceptors, or buddy RNs; however, 88 transgressions occurred whereby patients were placed at risk for potential harm or were harmed by the actions of nursing students.
 11. The Canadian Association of Schools of Nursing (CASN) does have a position statement on nursing education and patient safety. CASN has a role in fostering the presence of patient safety competencies in nursing curricula. CASN could host a summit or gathering of educators with the express purpose of addressing patient safety. It may also be prudent to explore the extent to which patient safety competencies are addressed in CASN's *Accreditation Program*. CASN could work with schools of nursing in Canada to bridge the gap between practice and education with respect to patient safety.

12. Provincial regulatory bodies, responsible for the ongoing approval of undergraduate nursing programs, can ensure that patient safety is addressed within nursing curricula. Program approval standards could ensure nursing programs address patient safety from a systems-based perspective, i.e., there is flow of data/information between the clinical and practice sectors, and that nursing programs consider such data in relation to curriculum structures, processes, and outcomes.

Introduction

This study was conducted to understand patient safety from an education-systems perspective (Gregory, Guse, Davidson Dick, Russell, 2007). Within the health care system, addressing patient safety from a systems perspective is receiving increasing attention and action. In contrast, nursing education has primarily addressed patient-safety matters from an individual student, rather than a systems-based perspective.

Understanding the impact of nursing education systems on students, with respect to patient safety, remains significantly under-researched. A systems perspective entails “looking within” and reviewing how existing program structures and processes (eg., curriculum, sequencing of courses, student access to skills labs, clinical practice models, math calculation tests, etc.) foster or undermine patient safety among nursing students. The findings from this study revealed that patient safety was narrowly understood by the majority of stakeholder groups as “safe patient care.” With few exceptions among the participants, patient safety was equated to safe medication administration (notably, *the Five Rights*).

- *Among those interviewed during the course of the study, and with a few exceptions, the understanding of patient safety as a systems-based concept was decidedly lacking.*

The Safety Competencies: Enhancing Patient Safety Among the Health Professions (2008), is a user-friendly framework that promotes the integration of patient safety competencies into health care curricula. The document addresses the concerns of Sandars, Bax, Mayer, Wass, and Vickers (2007) by offering interprofessional *consensus* on priority patient safety content for

undergraduate students in the health care professions. These competencies are poised to influence the place and presence of patient safety in health care curricula.

In clinical nursing education, the tendency is to take an individual approach to patient safety, i.e, each student is held solely accountable for her/his clinical transgressions. There needs to be increased attention toward overall nursing education and not just the individual nurse who is educated (Neudorf, Dyck, Scott, & Davidson, 2008; Milligan, 2007). As Milligan observed, the process of making significant moves towards a patient safety culture requires changes in healthcare education.

- *A “culture shift” occurs when student transgressions in the clinical setting (error, in the traditional clinical vernacular) are considered within the wider context of the education system.*
- *Students are expected to make mistakes as they learn, but the nursing program is equally expected to ensure that students are as safe as they can be.*
- *Nursing programs lack baseline data on the type and frequency of nursing student transgressions.*

An individualized approach to patient safety was confirmed during the course of this study. Patient safety concerns, in the form of clinical learning contracts, were placed in individual student files; such data were not aggregated to reveal patterns or trends in clinical transgressions among nursing students.

- *Furthermore, there was limited or no exchange of data concerning patient safety events between the practice sites and the nursing program.*

On occasion, the seriousness of a clinical transgression necessitated communication between the practice and education sectors; however, this was not the norm. These findings are likely true of nursing programs in Canada, the United States, and internationally.

Although this study focused on nursing students, patient safety is of concern among all students in the health care professions, e.g., medicine, pharmacy, dentistry, physiotherapy, occupational therapy, etc.

- *There is a real need to research the relationship between education (and, in particular, clinical education) and patient safety among students in the health care professions.*

Methodology

The purpose of this study was to explore transgression data related to nursing student error, near misses, potential adverse events, and adverse events.⁷ Data were obtained from two primary sources; clinical learning contracts, and individual and focus group interviews with a host of stakeholders. Stakeholders from outside the nursing program were based in three clinical agencies; a long-term care center, a tertiary care hospital, and a community-based hospital. No stakeholders were interviewed from community health agencies; this should be considered a limitation of the study. In addition, the clinical learning contracts were mostly concerned with students' performances in the acute and long-term care clinical settings (81.67%, 49/60 learning contracts). Students in Year Two

⁷ These terms are defined in Section One, Case Studies, Clinical Transgression Classification on page 62.

were placed with community-based agencies and thus their learning contracts (n=11) addressed nursing care of the well elderly and child bearing families.

The Question of Safety: An Exploration of Student Error among Undergraduate Nursing Students Placed on Clinical Learning Contracts is organized into two major sections. *Section One* consists of qualitative and quantitative findings generated from the clinical learning contracts. *Section Two* comprises individual and focus group interviews (students, clinical instructors, faculty members, education administrators, staff nurses, unit managers, and risk management officers).

Section One: Clinical Learning Contracts

Clinical learning contracts were established within the nursing program to assist students in the clinical setting. Students whose nursing care did not meet expected standards, and students who were clinically weak or unsafe, were enrolled in clinical learning contracts. These students were more closely supervised and offered rehabilitative and remedial support. The intent of the learning contracts was to foster growth among novice clinical practitioners (learners). Clinical instructors⁸ (CIs) initiated the contracts within the clinical

⁸ Clinical Instructors (CIs) were employed by the nursing program to supervise nursing students. Typically, there was one CI for a group of 6 to 8 nursing students on a clinical unit. The CI may have been "new" to the clinical unit. CIs taught in Years Two, Three and the first half of Year Four. In the latter part of Year Four, preceptors (registered nurses [RNs]; staff nurses) supervised nursing students who completed their Senior Practicum—which was the final clinical placement in which clinical consolidation occurred among students. Buddy RNs were unit staff, and students provided nursing care to one of more of their patients. Although the nursing student and her/his clinical instructor were primarily responsible for the care of these patients, buddy RNs were often in the

setting; most did so on their own volition, although some CIs consulted with the respective clinical course leader (i.e., sought advice from the faculty member responsible for the course) prior to placing students on a learning contract.

The 60 learning contracts typically consisted of the following sections:

- Professional/Socialization Issues
- Nursing Care Concerns
- Clinical Transgressions
- Remediation and/or Rehabilitation
- Clinical Expectations
- Evaluated outcomes

With the exception of clinical expectations, these sections are fully addressed in the Report. Clinical expectations reflect the standards to which nursing students were held accountable. In order to avoid redundancy, data related to clinical expectations were threaded throughout the other sections, i.e., nursing care concerns, clinical transgressions, and remediation/rehabilitation. Although the clinical learning contracts informed the above six areas, the number of students who precipitated clinical transgressions (e.g., errors) was 37; 29 female and 8 male. Of this number, there were 7 female and 4 male international students⁹. Not all students who were placed on clinical learning contracts precipitated clinical transgressions, e.g., their nursing care, while not of concern from a patient safety perspective, warranted the initiation of a learning contract.

Clinical transgressions are highlighted in this *Executive Summary*.

background—ensuring that safe, competent nursing care was offered to patients. Some buddy RNs played a role in Near Misses (good catches) and thus prevented patient safety events from occurring among patients cared for by nursing students.

⁹ International nursing students were in Canada on a student visa and were enrolled in the nursing program.

The clinical learning contracts were a veritable “gold mine” with respect to mining data related to Near Misses (NMs). Clinical instructors recorded these interceptions or good catches in the clinical learning contracts. NMs are greatly informative regarding the advancement of patient safety among nursing students. They represent learning opportunities for students, CIs, and the unit nursing staff. Moreover, and from a systems perspective, the data can assist nursing educators to identify ongoing patterns in student performance warranting adjustment in the curriculum (e.g., course-based changes, increased access to the skills lab, focused or strategic skill reviews, etc.). Unlike most occurrence reports, which report a mishap after the fact, clinical learning contracts are upstream and preventive in their value.

The clear majority of students who entered into clinical learning contracts were ultimately successful, i.e., they demonstrated growth as novice practitioners. Overall, only 8 students (13.33%) who were placed on learning contracts failed; the remainder (86.67%, 52/60) was successful.

- *The failure rate among the three clinical years varied as follows: Year Two (18.18%; 2/11); Year Three (8.33%; 3/36); and, Year Four (23.08%; 3/13).*

The denominator for each clinical year does not reflect the total population of learning contracts; it simply reflects the number of learning contracts randomly sampled from the student files for the purposes of this study. Thus, some caution is warranted in the interpretation of these failure rates (given that the total number of possible clinical learning contracts is unknown). Suffice to note that

the clear majority of students in this sample of clinical learning contracts were successful in passing their clinical courses.

Clinical Learning Contracts Data. Sixty case studies (clinical learning contracts) were analyzed, i.e., the data were subject to qualitative content analysis and, as appropriate, descriptive statistical analysis. The learning contracts consisted of archived materials (1999-2005) culled from the individual files of nursing students who had graduated from the nursing program. That student information was limited to graduates was a condition of ethical approval from the University ethics committee. A third-party (administrative clerk) was employed to hand search the student files as each learning contract was housed in the file of individual students. A random selection of student files garnered n=60 learning contracts as follows: Year Two (n=11); Year Three (n=36); and Year Four (n=13). As this research was exploratory in nature, the researchers determined that a sample of approximately 50 case studies was adequate to discern the phenomenon of interest. A brief demographic profile follows:

Introduction (I) Table 1. Demographic Profile of Students Enrolled in Clinical Learning Contracts

Gender	Female	Male	Overall
	78.33% (n=47)	21.66% (n=13)	100% (n=60)
Age	26.51	30.59	28.55
International Student Status	18.33% (11/60)	11.66% (7/60)	30% (18/60)

The majority of students were female; however the percentage of male nursing students (21.66%) appeared higher than what would be expected in such a sample. While the number of male nursing students in Canada remains

unknown, the number of males in the Canadian RN workforce is reported as 5.6% (CNA, 2006). The number of male nursing students is assumed to range from 5% to 10% within undergraduate nursing programs in Canada¹⁰.

The learning contracts were photocopied, rendered anonymous, and then shared with the research team. The learning contracts ranged from 1 to 8 pages of single-spaced, typed, text, totaling 238 pages. A few of the contracts were hand-written. At the commencement of the data analysis process, each member of the research team was assigned the same three case studies. Through a series of teleconference meetings, consensus was achieved regarding six core categories that were used as a rubric to organize and then analyze the qualitative data. These included:

1. Professional/Socialization Issues
2. Nursing Care Concerns
3. Clinical Transgressions
4. Remediation and/or Rehabilitation
5. Clinical Expectations
6. Outcomes

The Principal Investigator (Gregory) then transcribed each of the 60 case studies to an Excel spreadsheet as per these six agreed upon a priori general categories. The PI analyzed the data and e-mailed provisional analysis (findings) to each of the team members for review and feedback. Again, through a consensus building process, rooted in e-mail and teleconference exchanges, the findings were established. Clinical expectations were not reported as a separate category; rather, these expectations were threaded throughout the other

¹⁰ It is astounding that the number of male nursing students in Canada remains unknown.

categories to avoid redundancy. Another section was created and examined why students were not successful in passing their clinical learning contracts.

Section Two: Interview Data

Focus group interviews [n=10] and/or collective interviews of at least two persons were conducted by the Project Manager (Hultin) with key stakeholders (See following table). In addition, 9 individuals (education administrators, n=2; unit managers, n=6; and an agency-based risk manager) were interviewed. Thus, this data set consisted of consultation with 40 people. The focus group findings are presented in *Section Two* of the report.

Table 2. Number of Focus Group and Individual Interviews

Group	# Focus Groups	# Individual Interviews	Total participants
Students	2	0	7
Clinical Instructors	2	0	9
Administrators	1	2	4
Faculty	1	0	4
Unit managers	0	6	6
Staff nurses	3	0	7
Risk managers	1	1	3
Total	10	9	40

Focus Group Interview Data. Subsequent to obtaining informed consent, the interviews were digitally recorded, transcribed verbatim, and anonymous interview transcripts were created. A semi-structured interview guide was developed by the research team; questions were formulated based on the literature, existing research, and the respective experiences of the researchers. The PI, along with the two research assistants, subjected the transcripts to

standard qualitative content data analysis. Consensus, in relation to the analysis and interpretation of the transcripts, was established among the PI and the two research assistants. Findings were then shared with the research team members, whose feedback was invited.

Although the researchers were initially concerned about the relatively small numbers of nursing students, their perspectives were consistently validated in the other stakeholder interviews. Despite concerted and repeated efforts to recruit students, only 7 volunteered to be interviewed. In looking at their perspectives, it may be that students were frightened to come forward and discuss errors, mistakes, and patient safety events/concerns within their nursing program. Students characterized their nursing program, and in particular the theory/classroom component, as a *culture of fear* and not a *culture of safety*.

SECTION I CASE STUDIES

Overall Transgressions: Years Two, Three, and Four

In this section, data from Years Two, Three, and Four were merged. Thus, an overview of the clinical transgressions for the entire data set was offered. This section consists of four areas: Clinical transgression classification; transgressions by gender, student status and age; thematic analysis of overall transgressions; and, a comparison of transgressions between Years Three and Four.

(Figure 1.00)

I. Clinical Transgression Classification

- Total distribution of transgression classifications

II. Transgressions by Gender, Student Status, and Age

- Overall transgressions by gender and student status
- Overall transgressions by age:
 - Male and female students mixed
 - Female nursing students
 - Male nursing students
 - International students

III. Thematic Analysis: Overall Transgressions

A. Medication Transgressions:

- Classification
- Gender and student status
- Areas of concern

B. Other Transgressions

- Classification
- Gender and Student Status

C. Inadequate and/or Inappropriate Skill Application

- Classification
- Gender and student status

IV. Comparison of Transgressions: Years Three and Four

I. Clinical Transgression Classification

Clinical transgressions were organized as (i) errors, (ii) near misses, (iii) potential adverse events, and/or (iv) adverse events.¹¹ The very nature of the clinical learning contracts held students solely accountable for their clinical transgressions. When the data from the clinical learning contracts and interviews were analyzed, however, it became clear that the education system shared some responsibility for these clinical transgressions. This is not to imply that students were not accountable for their actions. Data suggest that there may also be a systems effect that negatively contributed to students' clinical transgressions.

- (i) Errors (E) were events for which a student was held responsible, but a patient was not directly placed "at risk" for any kind of harm (physical, emotional/psychological or otherwise). The following textual excerpt illustrates an error.

I was tidying the counter in the med room after all students had completed their meds, and noticed a plastic cup with what appeared to be a crushed Tylenol #3. I asked the student regarding same, and she stated that she had not given the med because the patient had left the unit, and once they returned the buddy nurse gave the Tylenol. The patient in the meantime had been discharged and was no longer in the computer. I wasted the med with another RN and notified the pharmacy of the Error. I discussed with the student the importance of prompt wastage of narcotics (P-38, A-22, F, I¹²).

¹¹These definitions are informed by the *Canadian Patient Safety Dictionary* (2003), Royal College of Physicians and Surgeons, Ottawa, Ontario. They have been modified to suit the nature of nursing practice and the study's data. The researchers created the category, *Potential Adverse Events*, to more accurately reflect the patient safety events precipitated by the nursing students, i.e., their actions directly placed patients at risk; however, no patient harm was recorded (as fact) in the clinical learning contracts. *Adverse Events* were coded when patient harm was documented in the clinical learning contracts.

¹² P = participant; A = age; F/M = gender (male or female); I = international student

- (ii) Near misses (NM) were events in which patient safety would have been compromised if someone, such as a CI or buddy RN, had not intervened to rectify the student's erroneous plan of action. Thus, NMs were interceptions or good catches and constituted preventative acts with respect to the safety of patients. The following two examples of NMs are from the clinical learning contracts.

The student calculated the correct dosage at 6.25 ml. She drew up 6 ml. The Preceptor caught this error right away. The patient received the correct dosage. The student stated "I thought my Preceptor was rounding down dosages, so I did the same" (P-57, A-24,F).

Medication near miss: 3cc syringe to an 18-gauge needle with .6 ml or 60 units, instead of 6 units/insulin syringe (P-20, A-30, F).

- (iii) Potential adverse events (PAE) were events that occurred when a student's actions directly placed a patient at risk for potential harm; however, harm to the patient was not reported or substantiated in the clinical learning contracts. PAEs were discovered after the fact. The transgression had already occurred and it was confirmed by the CI and/or the buddy RN. It was then recorded in the clinical learning contract. Furthermore, it was often simply good fortune that no harm was incurred by the patient during the course of a PAE.

On [certain date] the IV was left open. She [student] was helping a nurse on the adult side of the ward. She changed the IV for the patient, then opened the clamp to reset the drip-rate, got distracted and did not reset the drip-rate. This was a post operative patient. No harm to patient was incurred. Student was told not to report to the ward for [certain date] shift because of unsafe practice (P-57,A-24,F).

On (certain date) drew up and administered Morphine 10 mg IV. The order on the MARS [Medication Assessment Summary] sheet clearly read, "Morphine 2.5 to 5 mg IV" (P-46, A-41, M).

- (iv) Adverse events (AE) were events which occurred when a student's action precipitated a negative impact on the patient's health and well-being, the patient was directly placed at risk and was reportedly harmed in some way. This harm was clearly recorded in the clinical learning contracts. The difference between a PAE and an AE was the documentation of patient harm in the clinical learning contracts. Both events were considered serious in terms of potential or actual harm incurred to patients.

She [student] failed to provide a patient with Osteomyelitis with an analgesic medication following [the patient's] verbal complaints of pain. The patient was in distress. (P-45, A-21, F).

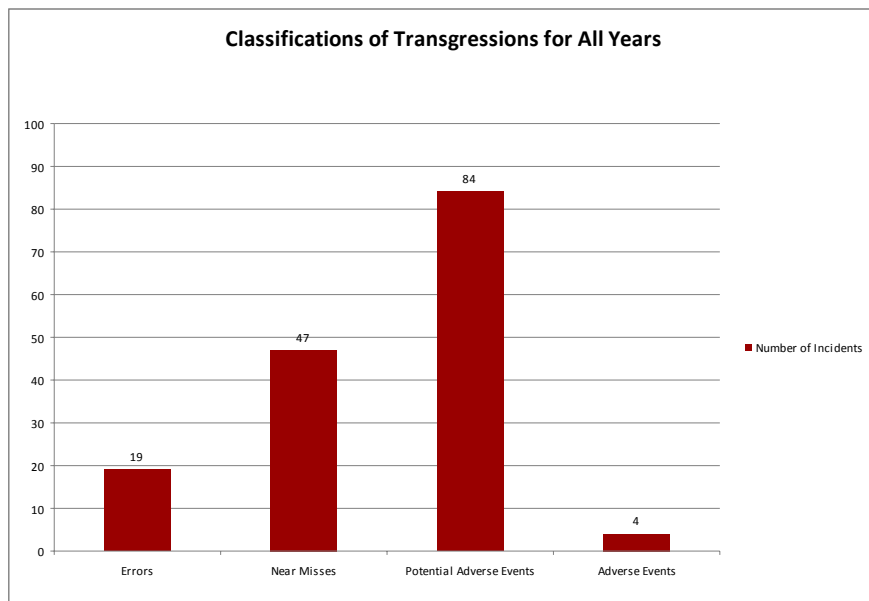
Of interest is that the same patient safety event (e.g., not checking a patient's identity band prior to the administration of medication) could result in at least three very different scenarios or outcomes. These are illustrated as follows:

- Near Miss (NM): The clinical instructor stopped the student from administering medication to a patient, as the student did not check the patient's identification (ID) band. The student then checked the ID band and administered the "right" medication to the "right" patient;
- Potential Adverse Event (PAE): The student administered medication to a patient without checking the ID band. Fortunately, it was the "right" patient and the "right" medication and no harm was incurred to the patient;
- Adverse Event (AE): The student administered medication to a patient without checking the ID band. Unfortunately, it was the "wrong" patient

in relation to the administered medication and harm resulted to the patient.

Distribution of Transgression Classifications. Transgressions from Years Two (n=5), Three (n=117), and Four (n=32) were combined to determine overall transgressions for the data set. These transgressions were precipitated by 37 nursing students; 29 female and 8 male. International students¹³ were a subset of this sample; 7 female and 4 male students. The type of transgression is presented in the following Chart (1.00), i.e., Errors, Near Misses, Potential Adverse Events, and Adverse Events.

Chart (1.00) Overall: Type of Transgression



¹³ International nursing students were in Canada under the auspices of a student visa and were enrolled in the nursing program.

Nursing students in the transgression sample precipitated 154 patient safety events. Errors comprised 12.34% (n=19) of the events; Near Misses accounted for 30.52% (n=47) of the total transgressions; and, Potential Adverse Events constituted more than one half of the total transgressions (54.55%; n=84). Adverse Events made up 2.60% (n=4) of all the transgressions arising from the learning contracts.

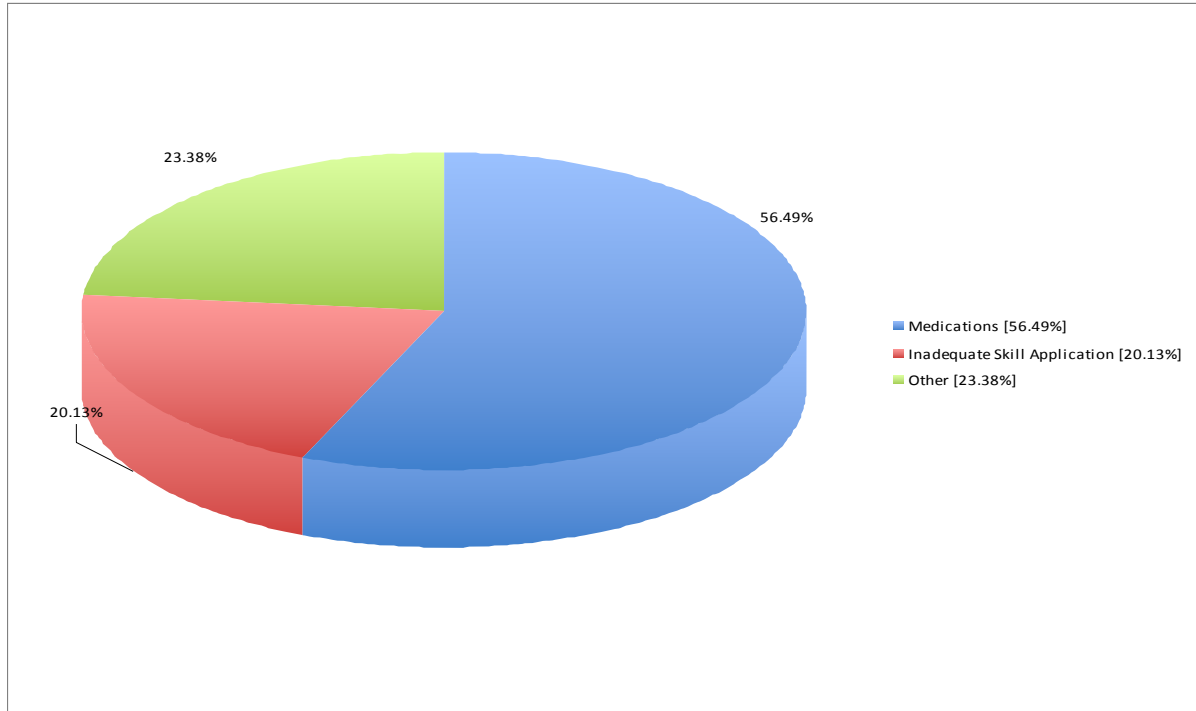
- *Although 30.52% (n=47) of events were good catches and were thusly intercepted by the clinical instructor and/or the student's buddy RN, 57.14% (n=88) events occurred that placed patients directly at risk for harm.*

NOTE: There were likely many NMs that (i) were not recorded in the clinical learning contracts, and (ii) occurred on the clinical units, but with students who were not placed on clinical learning contracts. Thus, in this data set, the number of PAEs outnumbered the occurrences of NMs; however, this may not be indicative of the true number of NMs occurring among nursing students. That observation made, it is of concern that 88 events went "sight unseen" by the CI or the buddy RN and placed patients at risk for harm.

- *The most frequently occurring clinical transgression occurred in the category of Medications (56.49%; n=87). Understanding the "why" of medication errors among undergraduate nursing students includes examination of individual and systems-based factors (Page & McKinney, 2007). This is an area requiring further research.*

As indicated in the following Chart (1.01), the most frequently occurring transgression occurred in the category of *Medications* (56.49%). The next most frequent cluster of transgressions entailed "*Other.*" This category (23.38% of all transgressions) consisted of the following concerns: data assessment, reporting and recording findings, prioritizing patient care, and follow-through care. The third category entailed the *Inappropriate Application of Clinical Skills* (20.13%).

Chart (1.01) Overall Transgressions by Type



In terms of the actual number of transgressions by type, the distribution was as follows: Medications (n=87), Other (n=36), and *Inadequate Skill Application* (n=31). See the following Chart (1.02).

Chart (1.02) Number of Transgressions by Type

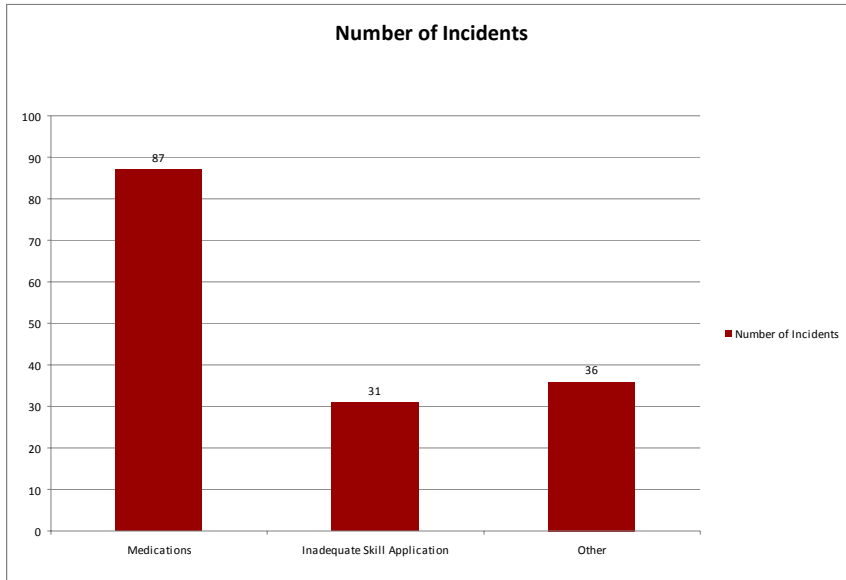
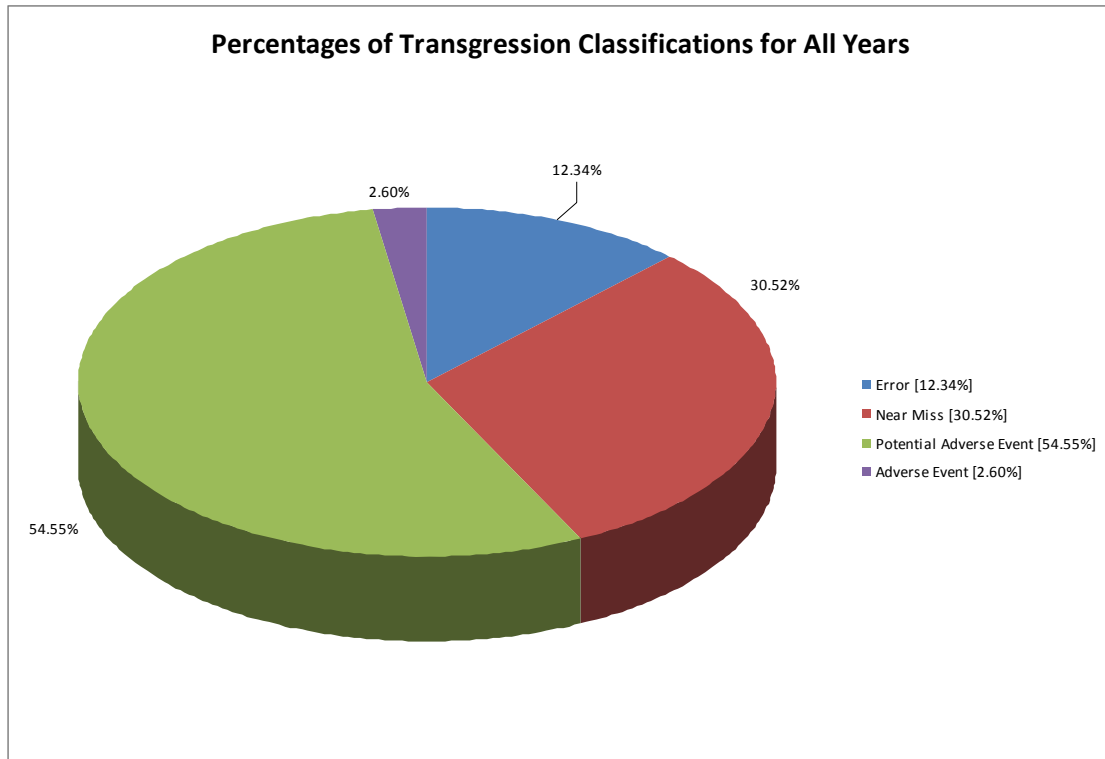


Chart (1.03) Percent Breakdown of Transgressions by Type



II. Transgressions by Gender, Student Status, and Age

Overall Transgressions by Gender and Student Status.

- Male nursing students (21.62%; n=8) precipitated 37.66% of all the transgressions in the data set and were thusly over-represented.
- Male nursing students were responsible for 46.43% (n=39) of all PAEs—whereby patients were placed at direct risk for harm.
- International male nursing students precipitated 25.64% (10/39) of all the male-responsible PAEs.
- International females comprised 24.14% of all the females in the transgression sample, but precipitated 36.36% of all female-responsible Errors; 40.54% of all female-responsible NMs; and 33.33% of all female-responsible PAEs.

Table (1.00) Transgression Type by Gender and Student Status

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=8)	8	10	39*	1	58	37.66%*
Women (n=29)	11	37	45	3	96	62.34%
Overall (n=37)	19	47	84	4	154	100%
Men (international) (n=4) #	3	7*	10	1	21*	13.63%
Women (international) (n=7)	4*	15*	15*	0	34	22.08%
International Overall (total) (n=11)	7	22	25	1	55	35.71%

*Areas of concern; males (21.62% of the transgression sample) precipitated 37.66% (n=58) of the total number of transgressions. Males were also responsible for 46.43% (n=39) of the PAEs. International male nursing students were over-represented in that they precipitated 25.64% of all the male-responsible PAEs; and, 36.21% of all the male-responsible transgressions. International nursing students (male/female) were 29.73% of the sample (11/37), but precipitated 35.71% of all the transgressions.

International students are a sub-set of the overall total and are highlighted separately in the bottom half of this table.

International students were accountable for 35.71% (n=55) of the total transgressions. Male international students (10.8% of the sample) precipitated 13.64% (n=21) of the transgressions in the data set, were held responsible for 25.64% of all the male-precipitated PAEs, as well as 36.21% of the total male-precipitated transgressions. Collectively, male nursing students were accountable for 37.66% (58/154) of all the transgressions. Thus, and in this sample, male nursing students and international nursing students were over-represented in the transgression data set.

- *Males and international male nursing students may have been socialized to be more autonomous, to take independent action and consequently more risks. This socialization and risk-taking behaviour may be “at play” in their nursing care.*
- *Masculinities may also have been a contributing factor whereby male nursing students hesitated to ask for help, particularly from their female clinical instructors. Asking for assistance constitutes a weakness among certain masculinities. Similarly, some male nursing students may have had difficulty with female authority figures and they were thusly reluctant to consult their clinical instructors and obtain support or guidance from them.*
- *Socio-cultural differences may also account for the over-representation of male nursing students, particularly with respect to the international male students.*
- *Alternatively, clinical instructors (almost exclusively female) may have made assumptions about their male students, i.e., males were more independent, competent, and thus required less supervision than female students.*

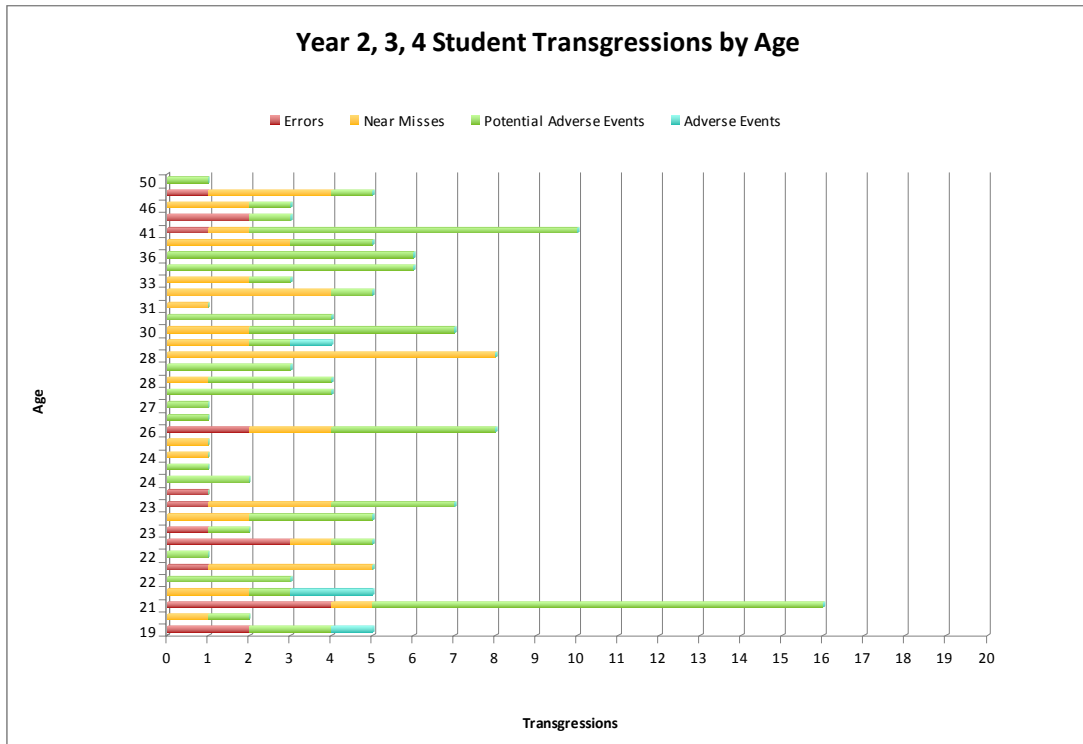
It is also possible that male nursing students were indeed more closely supervised compared to their female counterparts—and thus, more events were noticed by the clinical instructors. The PAE data, however, lend less support to this interpretation. CIs and/or buddy RNs discovered the PAEs “after the fact”, i.e., the transgressions had already occurred.

- *Additional research is required to better understand the relationship between gender and patient safety concerns among undergraduate nursing students. This is especially important as nursing shifts its profession demographics, i.e., increased numbers of non-traditional students, including men, immigrant or new Canadians, second career and/or mature students, English as Second Language students, and international students.*

Overall Transgressions by Age: Male and Female Students Combined. The age of the nursing students ranged from 19 to 50; the average age was 29.14. The median age was 27. Thus, the sample was older, i.e., most of the learning contracts involved students who were not immediate graduates from high school. In terms of designating young and older age status, the data appeared to naturally split into younger (≤ 26) and older (≥ 27) year cohorts. In examining the overall transgressions by age and mixed gender, the following patterns were observed:

- *Errors occurred more often among younger nursing students (≤ 26).*
- *Younger nursing students (≤ 26) were also accountable for the majority of Adverse Events*
- *Near Misses were most often precipitated by older nursing students (≥ 27).*
- *Older nursing students (≥ 27) were responsible for the majority of the Potential Adverse Events.*

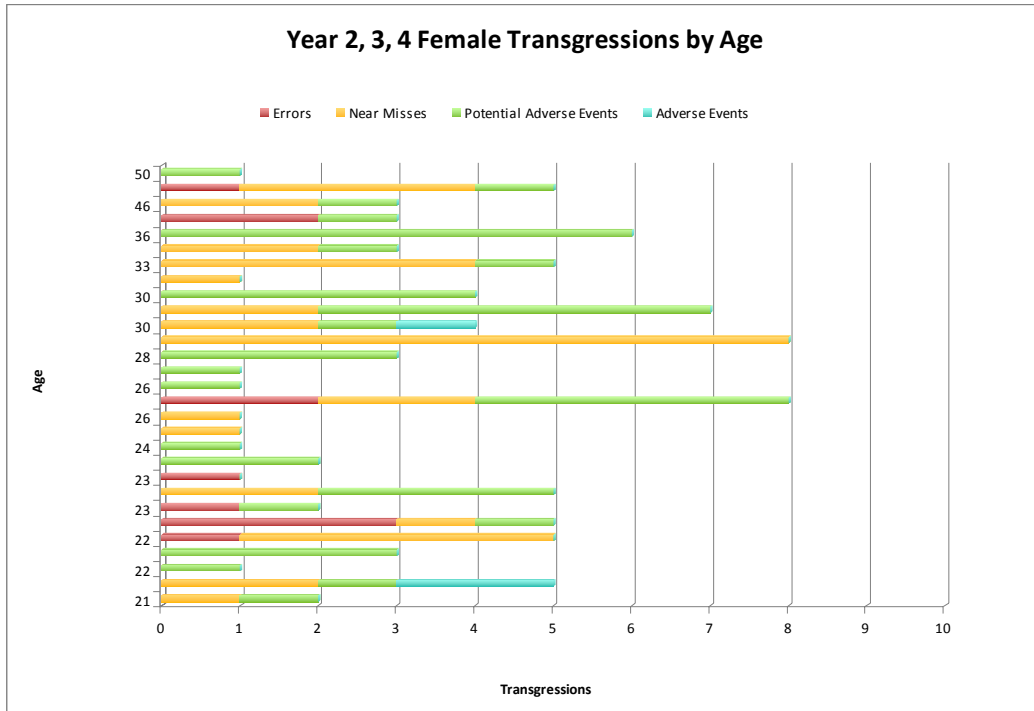
Chart 1.04: Transgressions by Age



Overall Transgressions by Age: Female Nursing Students. In examining the overall transgressions by age and female gender, the following patterns were discerned:

- *Younger female nursing students (≤ 26) precipitated more Errors compared to the older female nursing students.*
- *In terms of Near Misses, older female nursing students (≥ 27) were accountable for most of these transgressions.*
- *Older female nursing students (≥ 27) precipitated more Potential Adverse Events compared to their younger counterparts.*

Chart 1.05: Transgressions by Age and Female Gender



Overall Transgressions by Age: Male Nursing Students. Patterns in the data revealed the following:

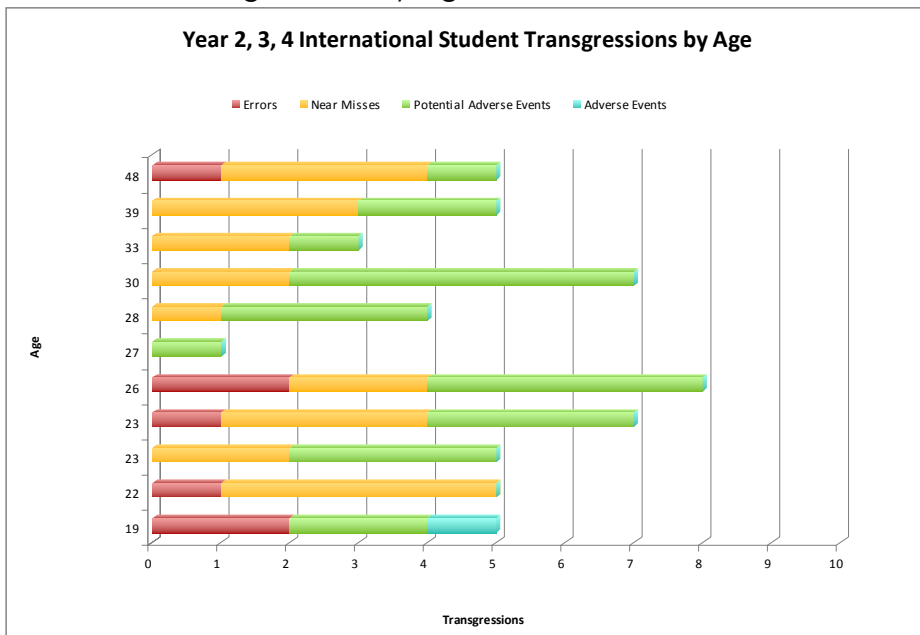
- Younger male nursing students (≤ 26) precipitated more Errors when compared to older male nursing students.
- Near Misses were equally distributed among younger and older male nursing students.
- Older male nursing students (≥ 27) were responsible for more Potential Adverse Events compared to their younger male counterparts.

Chart 1.06: Transgressions by Age and Male Gender



Overall Transgressions by Age: International Students.

Chart 1.07: Transgressions by Age and Student Status



The distribution of transgressions among the international students revealed the following patterns:

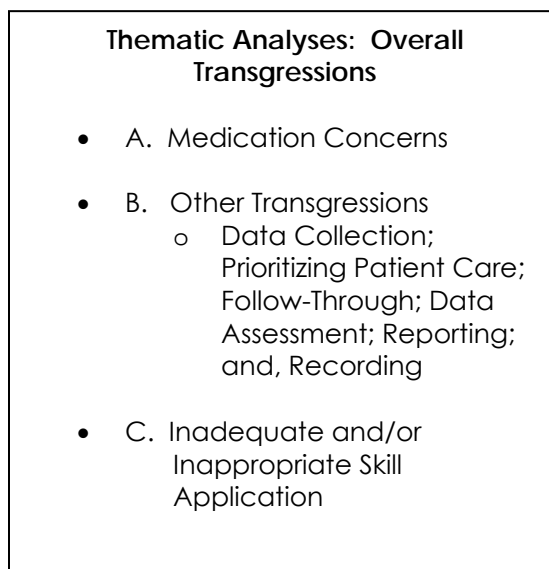
- *Errors were almost equally distributed among older (≥ 27) and younger (≤ 26) international nursing students.*
- *Older international nursing students (≥ 27) precipitated the majority of Near Misses.*
- *Older international nursing students (≥ 27) precipitated the majority of Potential Adverse Events.*

III. Thematic Analysis: Overall Transgressions

Three major themes were generated from the transgression data set:

Medication Concerns; Inadequate and/or Inappropriate Skill Application, and; Other. This last category was an amalgam of concerns from Year Three (data collection, prioritizing patient care, follow-through care) and Year Four (data assessment, reporting and recording data/information). The transgressions, as organized by these themes, are listed in Figure 1.01.

Figure 1.01

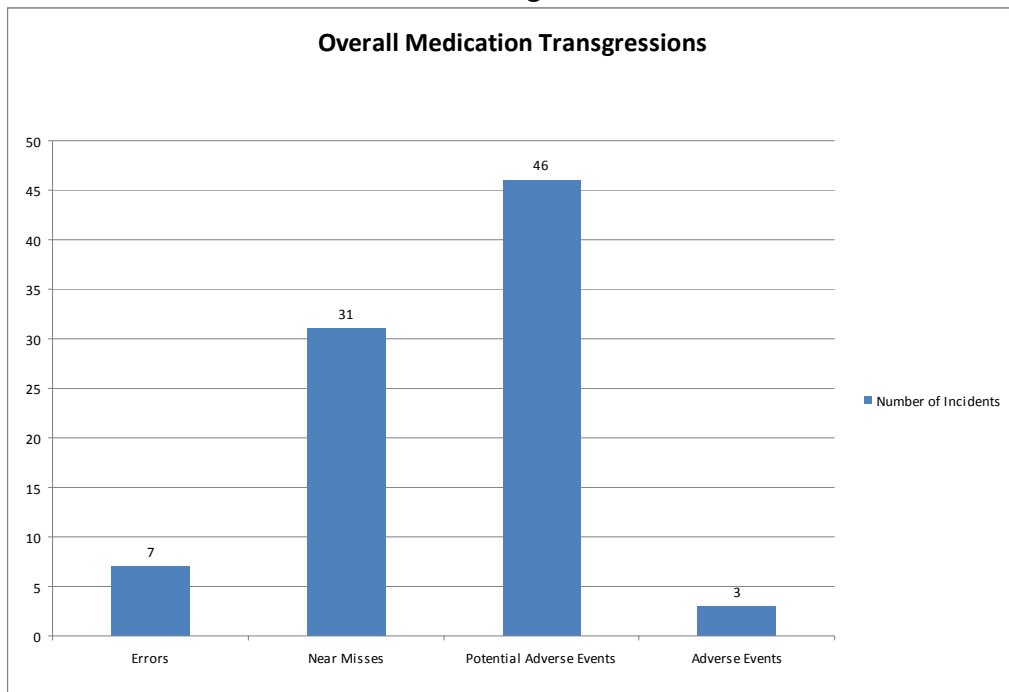


A. Medication Transgressions

i. Medication Concerns: Classifications

Medication concerns accounted for 56.49% (n=87) of the total clinical transgressions; the category with the greatest number of transgressions. Of the 87 medication-related transgressions, CIs, preceptors, and/or buddy RNs intercepted 35.64% (n=31) of them. However, a greater number of Potential Adverse Events were missed, i.e., 56.32% (n=49).

Chart 1.08: Overall Medication Transgressions



- *Although just over one-third of all medication transgressions were intercepted ("good catches") and thus prevented harm to patients, 56.32% of the transgressions (PAEs) went "unchecked" and placed patients at risk for harm.*

ii. Medication Transgressions: Gender and Student Status

- Males were disproportionately responsible for precipitating PAEs with respect to medication. Although they constituted 21.62% of the transgression sample, they were held responsible for 47.8% of all the medication PAEs.
- Males were also disproportionately represented with respect to the total number of medication transgressions, i.e., they contributed to 33.33% of the medication concerns.
- International females comprised 18.92% of the transgression sample; yet, they precipitated 38.71% of all the medication NMs.

Table 1.01: Gender and Student Status: Medication Errors, Near Misses, Potential Adverse Events, and Adverse Events

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=8)	2	5	22*	0	29	33.33%*
Women (n=29)	5	26	24	3	58	66.67%
Overall (n=37)	7	31	46	3	87	100%
Men (international) (n=4)	0	3	1	0	4	4.60%
Women (international) (n=7)	4	9	5	0	18	20.69%
International Overall (total) (n=11)	4	12*	6	0	22	25.25%

* Indicates areas of possible concern; Males (21.62% of the transgression sample) precipitated 47.8% of all the PAEs; Males were also responsible for 33.33% of the total number of medication transgressions. International females (18.92% of the transgression sample) were accountable for 38.71% of all the NMs.

Males were responsible for one-third (33.33%; n=29) and females for two-thirds (66.67%; n=58) of the total medication transgressions. Of note is that males made up 21.62% (n=8) of the transgression sample, and yet they were involved in 33.33% of the transgressions. Male nursing students were also disproportionately responsible for the majority of the PAEs (47.8%; n=22). Although the majority of

the transgressions sample consisted of females (78.38%; n=29), they precipitated relatively fewer medication transgressions (66.67%). Female international students (18.92% of the sample) were held responsible for 38.71% of all the Near Misses—and are thusly over-represented in this category of medication concerns.

iii. Medication Transgressions: Areas of Concern

- *The majority of the medication transgressions occurred in the category of Right Time (33.33%; n=29).*
- *Potential Adverse Events were the most prevalent in the category of Right Time (48.88%; 22/45).*
- *Near Misses (good catches or interceptions) occurred with 34.48% (30/87) of all the medication transgressions.*
- *Potential Adverse Events and Adverse Events occurred in 56.32% of all the medication transgressions (49/87). Thus, more than half of the transgressions (56.32%) occurring in the area of medication administration placed patients at direct risk for harm.*

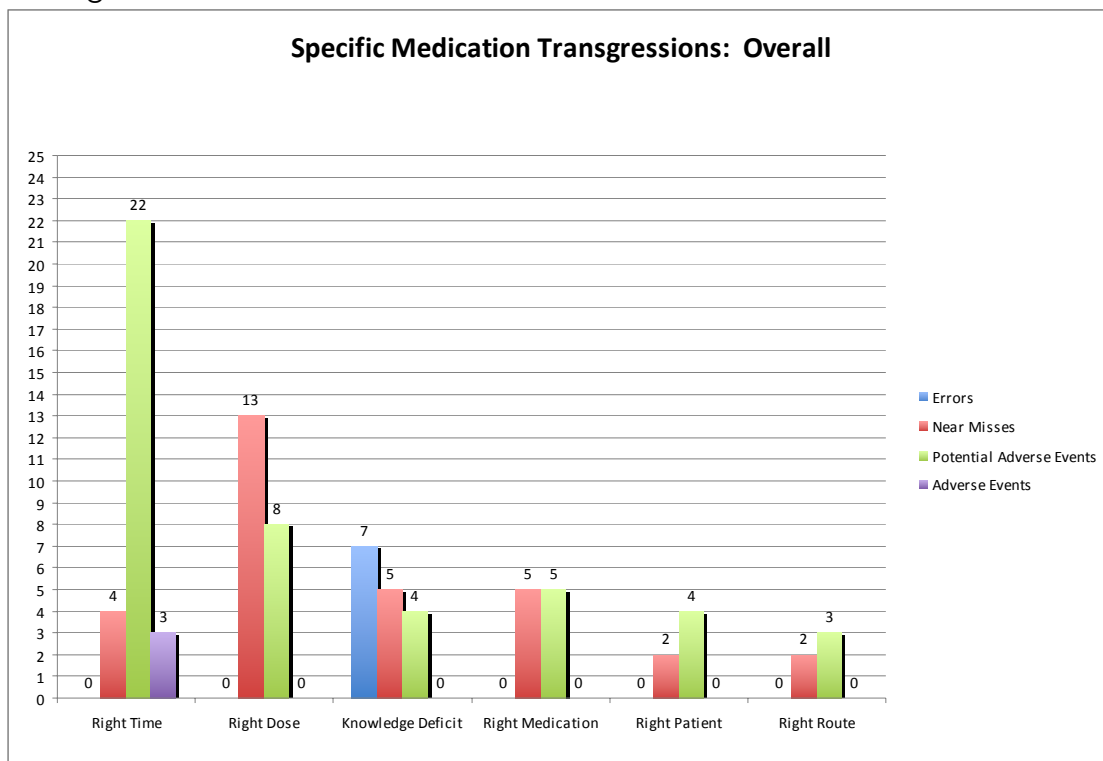
Supportive categories for the types of medication concerns are rank ordered (based on the number of events) and are organized around the *Five Rights of Medication Administration* (in addition to another category—*Knowledge Deficit*). There were no medication transgressions in Year Two and thus data reflect the combination of Years Three and Four.

- In terms of medication transgressions, the most to least problematic areas were as follows:
 - Right Time (Incorrect time of administration and inappropriate holding of medication);
 - Right Dose (Incorrect dose; underdose/overdose; incorrect calculations and/or concentrations);
 - Knowledge Deficit (Medication; treatment; narcotic disposal);

- o Right Medication(Incorrect medication; incorrect preparation (mix) and not confirming medications);
- o Right Patient (Not checking patient identity); and,
- o Right Route (Incorrect route).

The following Chart (1.09) reveals the specific distribution of transgressions among these six categories:

Chart 1.09: Specific Medication Transgressions of Year Three and Year Four Nursing Students*



*Note: There were no Year Two medication transgressions

The *Right Time* category constituted 33.33% (n=29) of all medication transgressions. The majority of Potential Adverse Events were found in this category, i.e., 48.88% (22/45). Only four Near Misses were observed in the category of *Right Time*; this is contrasted with the 22 existing PAEs. The only medication Adverse Events (n=3) were located in this category.

- *The majority of the medication transgressions concerned the “right time” of administration. This suggests that the nursing students likely experienced challenges related to the organization and prioritization of their nursing care. In addition, and given the acute-care practice settings (pediatrics, medicine/surgery), students may have also struggled with the knowledge and skills of more complex medication administration (eg., multiple/concurrent IV medications and their preparation).*

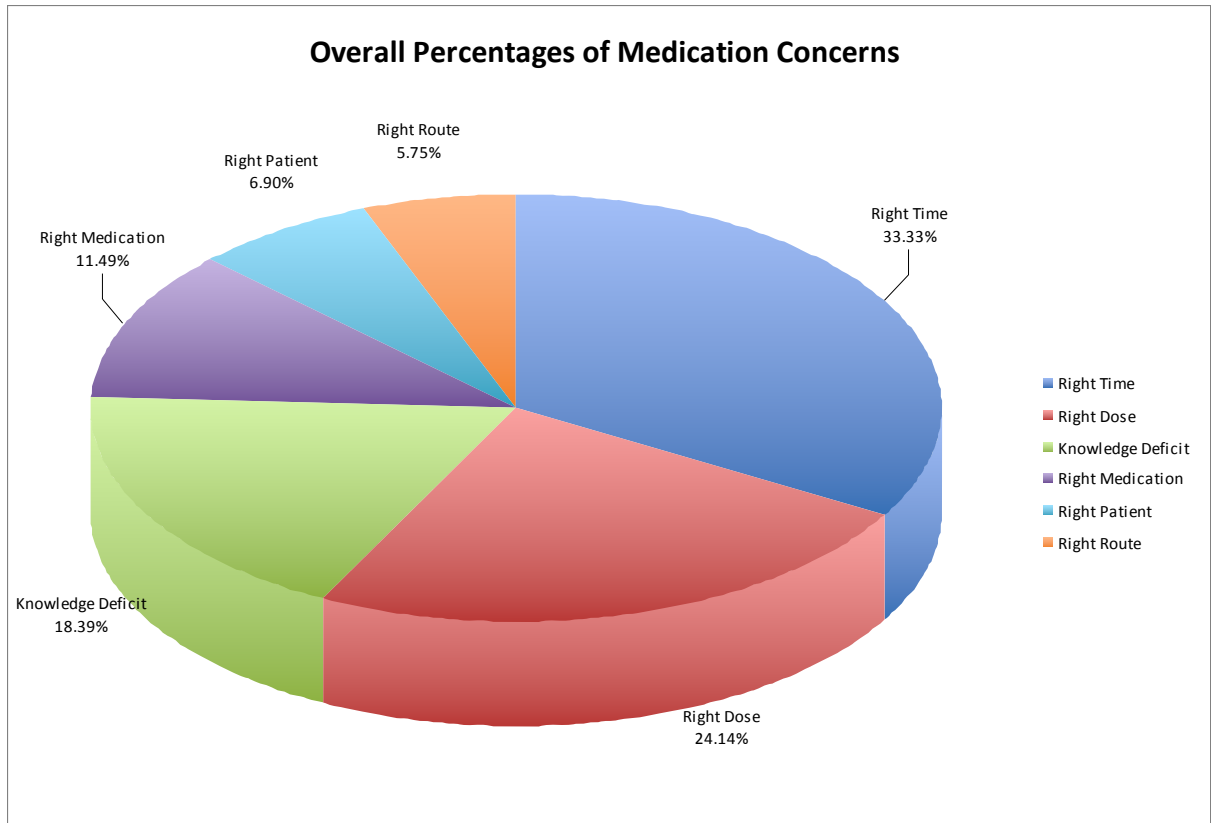
Textual excerpts illustrating the various categories are provided in each particular Year. (See Section One, Case Studies, Year Three Nursing Students, III. Thematic Analysis: Year Three Transgressions; and, Section One, Case Studies, Year Four Nursing Students, III. Thematic Analysis: Year Four Transgressions).

NMs were most often recorded in the category of *Right Dose*. Clinical instructors, buddy registered nurses, and/or staff nurses caught or prevented 61.90% (13/21) of medication transgressions related to the *Right Dose*.

- *38.10% (8/21) medication transgressions in the category of Right Dose, were not caught or intercepted by clinical instructors, buddy registered nurses, or staff nurses, and patients were consequently placed at direct risk for harm.*

This category, *Right Dose*, warrants further research to better understand why nursing students are administering (overdose/underdose) incorrect medication dosages to patients.

Chart 1.10: Overall Medication Concerns As Percentage of Total Medication Transgressions.



The third ranked category was *Knowledge Deficit* (18.39% of all medication transgressions). Of interest, this is the only category where medication errors occurred. There were five Near Misses and four Potential Adverse Events associated with this category.

The remaining three categories, *Right Medication*, *Right Patient*, and *Right Route* reflected 11.49%, 6.90% and 5.75% of the total medication transgressions respectively. There were also 12 PAEs distributed among these three categories.

Each of these six areas have significant implications for the safety and well-being of patients.

B. Inadequate and/or Inappropriate Skill Application

The second major theme arising from the learning contracts was *Inadequate and/or Inappropriate Skill Application*. Students' unsafe application of skills created patient safety concerns. Again, qualitative data (textual excerpts) illustrating these transgressions are located in the following sections of the Report: Section One, Case Studies, Year Three Nursing Students, III. Thematic Analysis: Year Three Transgressions; and, Section One, Case Studies, Year Four Nursing Students, III. Thematic Analysis: Year Four Transgressions.

i. Inadequate and/or Inappropriate Skill Application: Classification

- *PAEs were the most frequently occurring transgression (51.61%; n=16) regarding unsafe skill application.*
- *PAEs were related to the following inappropriate application skills: intravenous (n=7), asepsis (n=3), and other (n=6).*
- *Good catches (interceptions) were made in 41.94% (n=13) of the transgressions. However, more than half of the transgressions in this thematic area (51.61%) placed patients at direct risk for harm.*

There were a total of 31 transgressions as follows:

- Potential Adverse Events comprised 51.61% (n=16) of all the transgressions in this thematic area;
- Near Misses were the second most frequently occurring transgression at 41.94% (n=13) of all the transgressions in this thematic area;
- One Error (3.23%; n=1) and one Adverse Event (3.23%; n=1) were recorded in the learning contracts.

Chart 1.11: Unsafe Skill Application by Transgression Type: Errors, Near Misses, and Potential Adverse Events

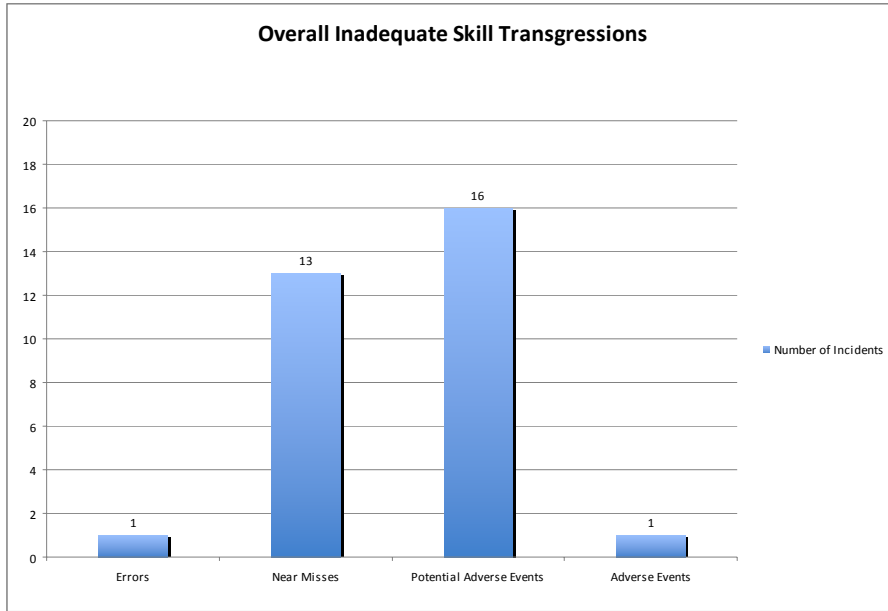
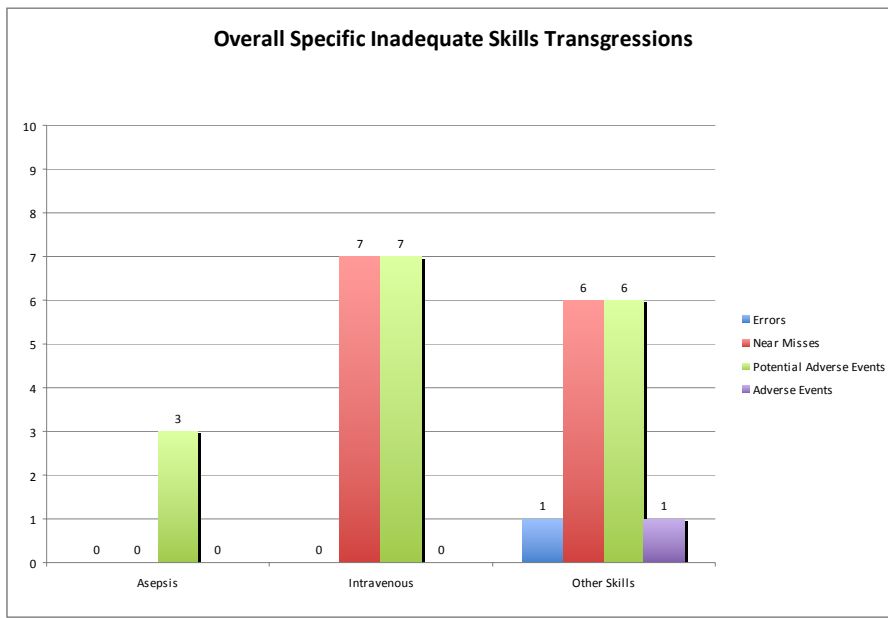


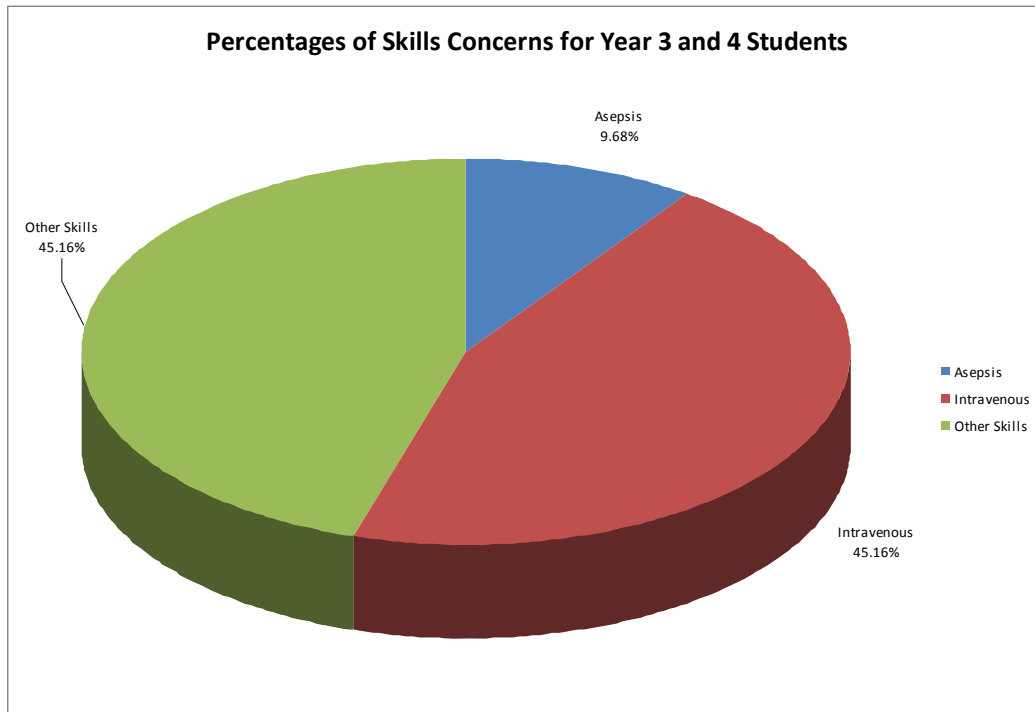
Chart 1.12: Transgression Classification by Skill Category



The three main areas of concern with respect to inappropriate or unsafe skill application were:

- Intravenous devices (peripheral lines [IVs], central lines, PCA [Patient Controlled Analgesia] pumps, and other kinds of pumps);
- Other skills (eg., patient transfer, traction, naso-gastric [NG] tubes, oxygen tubing, and ventilation/suctioning); and,
- Asepsis (dressing changes, wound care, piercing of a Jackson-Pratt [JP] drain).

Chart 1.13: Percentages of Transgressions by Skill Type



The majority of the transgressions regarding inadequate and/or inappropriate skill application (46.67%) centered around intravenous devices. Students lacked proficiency and knowledge with respect to these devices, for example, the need to flush the interlink when administering small doses of medications on a pediatric unit. *Other skills* (45.16% of the transgressions in this category) were next in terms of rank ordering. There were a range of skills in this sub-category and they included, for example, patient transfer, traction, NG [naso-gastric] tubes, oxygen tubing, and ventilation/suctioning. Finally, skills related to *asepsis*

comprised 9.68% of the transgressions in this category. For example, students contaminated their sterile fields when engaging in dressing changes.

ii. Inadequate Skill Transgressions: Gender and Student Status

- *Male nursing students were responsible for 41.94% of the overall transgressions in the data set; and yet males comprised 21.62% of the transgression sample.*
- *Male nursing students precipitated 50.00% of all the Potential Adverse Events.*
- *International male nursing students, who comprised 10.80% of the sample, contributed to 62.5% of the male-precipitated Potential Adverse Events and 75% of the male-precipitated Near Misses. International male nursing students were accountable for 69.23% of the total male-precipitated transgressions.*
- *International female nursing students, who comprised 18.90% of the sample, contributed to 29.03% of the total transgressions. However, they contributed 50.00% of the total female-precipitated transgressions.*
- *International female nursing students were accountable for 55.56% of the total female-precipitated transgressions in the category of Near Misses; they were also responsible for 50% of the total female-precipitated transgressions with respect to Potential Adverse Events.*
- *International nursing students were accountable for 61.54% of all the Near Misses and 56.25% of all the Potential Adverse Events.*

Table 1.02: Gender, Student Status, and Number of Inadequate and/or Inappropriate Skill Application: Errors, Near Misses, and Potential Adverse Events

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=8)	0	4	8*	1	13	41.94%*
Women (n=29)	1	9	8	0	18	58.06%
Overall (n=37)	1	13	16	1	31	100%
Men (international) (n=4)	0	3	5*	1	9*	29.03%
Women (international) (n=7)	0	5*	4*	0	9*	29.03%
International Overall (total) (n=11)	0	8*	9*	1	18	58.06%*

* Indicates areas of possible concern. Male nursing students precipitated 41.94% of all the transgressions in this thematic area. In addition, males contributed to 50% of all the PAEs. International male nursing students were accountable for 62.5% of all the male-responsible PAEs and 69.23% of the total male-responsible transgressions. Similarly, international female nursing students were accountable for 50% of the female-responsible PAEs; 55.56% of female-responsible Near Misses; and 50% of the total number of female-responsible transgressions. Overall, international nursing students precipitated 58.06% of all the transgressions in this thematic area.

Males precipitated 41.94% of the overall transgressions with respect to the inappropriate (unsafe) application of skills. However, closer scrutiny revealed that international male nursing students were responsible for 69.23% of all the male-precipitated transgressions (9/13). Although females were under-represented in terms of skill transgressions (78.38% of the sample precipitating 58.06% of the transgressions), international female nursing students were over-represented. For example, international female nursing students comprised 18.90% of the sample; collectively, they precipitated 29.03% of all the skill-related

transgressions. Moreover, they contributed to 50.00% of the total female-precipitated transgressions. International female nursing students were also accountable for 55.56% of the total female-precipitated transgressions in the category of Near Misses; and for 50% of the total female-precipitated transgressions with respect to Potential Adverse Events. Overall, international nursing students were responsible for the majority of unsafe skill application (58.06% of all the transgressions; 18/31).

C. Other Transgressions

In the previous two thematic areas, data were readily merged from Years Two, Three, and Four. There were transgressions related to medication and unsafe skill application across the three years. With respect to this final thematic area, data were clustered from Years Two and Three and constituted *Other Transgressions*. This theme was comprised of three elements: failure to collect data, inability to prioritize nursing care, and a lack of follow-through regarding nursing care. Data were also clustered from Years Two and Four and constituted *Assessment, Reporting, and Recording*. This theme was comprised of transgressions that entailed incomplete or erroneous assessments of patients, and not reporting and/or recording assessment findings. For example, one student assessed a patient as having chest pain, but did not record nor report this finding to the clinical instructor or any other registered nurse on the unit. Other transgressions included not recording vital signs and not documenting the whereabouts of a patient who was away from the unit on a day pass. Qualitative data illustrating

these thematic areas are detailed elsewhere in the Report (See Year Two, and Transgressions for Years Three and Four).

i. Classification of 'Other Transgressions'

Transgressions were coded as follows:

- Errors, 30.56% (n=11);
- Near Misses, 8.3% (n=3);
- Potential Adverse Events, 61.11% (n=22); and
- Adverse Events, 0.00% (n=0).

Of note are the two categories of Errors and Potential Adverse Events. In terms of relative percentages, these transgression types were the highest in this thematic area compared to medications and inappropriate skills.

ii. Gender and Student Status by Transgression Type: Errors, Near Misses, and Potential Adverse Events

- *Males, were 21.62% of the sample, and yet were responsible for 44.44% (n=16) of all the transgressions in this thematic area; Males contributed to 40.90% (9/22) of all the Potential Adverse Events (PAEs).*
- *International male nursing students precipitated 44.44% (4/9) of all the male-responsible PAEs. International males constituted 10.81% of the transgression sample.*
- *International female nursing students, 18.92% of the sample, contributed to 46.15% (6/13) of all the female-responsible PAEs.*
- *International nursing students contributed to 41.67% of all the transgressions in this thematic area, including 45.45% of all of the PAEs; international students comprised 29.73% of the transgression sample.*

Table 1.03: Other Transgressions. Gender, and Student Status by Type of Transgressions: Errors, Near Misses, Potential Adverse Events, and Adverse Events.

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=8)	6	1	9*	0	16	44.44%*
Women (n=29)	5	2	13	0	20	55.56%
Overall (n=37)	11	3	22	0	36	100%
Men (international) (n=4)	3	1	4*	0	8	22.22%
Women (international) (n=7)	0	1	6*	0	7	19.44%
International Overall (total) (n=11)	3	2	10*	0	15	41.67%*

* Indicates areas of potential concern. Males precipitated 44.44% of all the transgressions, but were 21.62% of the sample; males also contributed to 40.90% of the PAEs. Male international students were held accountable for 46.15% of the male-responsible PAEs. International female students precipitated 46.15% of all the female-responsible PAEs. Finally, international students were implicated in 41.67% of the transgressions.

Similar to the other thematic areas, males (including international males) were over-represented in relation to the reported transgressions. Male nursing students precipitated 44.44% of all the transgressions in this thematic area. Males also contributed to 40.90% of all the Potential Adverse Events. International male nursing students contributed to 44.44% of all the male-responsible PAEs—even though they comprised 10.81% of the transgression sample. Again, and in accounting for the findings, males and international male nursing students may be socialized to “take action” and more risks with respect to their nursing care. The men may also have hesitated to ask for help in general and with respect to

their clinical instructor (with few exceptions, female). CIs may also have accorded males (in international males) more autonomy. Likely the transgressions resulted from a combination of these factors.

International female nursing students were disproportionately represented among the female-responsible PAEs, i.e., they were 18.92% of the sample, but were implicated in 46.15% of these transgressions. International nursing students contributed to 41.67% of the total transgressions in this thematic area.

Further research is necessary to more fully understand the relationship between gender (and in particular, male nursing students) and student status (i.e., international students) regarding Errors, Near Misses, Potential Adverse Events, and Adverse Events.

Concerns About the Clinical Instructor Model

Data from the case studies and the interviews confirm concerns related to the clinical instructor model. This study revealed that there are numerous fault lines associated with the model. These fault lines are at real risk for fracturing; indeed such fracturing can quickly transpire. The clinical instructor model, in its current form, may not be “best practice” with respect to patient safety.

- Research is needed to examine the efficacy and effectiveness of the model from a patient safety perspective. How well is this model performing? What changes need to be made in the short- and longer-term to stabilize its fault lines? What system-based changes (program, curriculum) are necessary to ensure a more integrated model of clinical instruction for nursing students?

In the following table, the three thematic areas (medications, inappropriate skills, and other) were compared with respect to Errors, Near Misses, Potential Adverse Events, and Adverse Events. Note that PAEs were consistently higher, both in terms of relative percentages and actual occurrences, across the three thematic areas. Some caution is warranted with the interpretation of the data here as the number of NMs is likely under-reported, in the clinical learning contracts, within the clinical context, and in the day-to-day clinical experiences of nursing students.

Table 1.04. Percentage Comparison of Transgressions by Theme

Thematic Area	Errors (%)	Near Misses* (%)	Potential Adverse Events* (%)	Adverse Events (%)
Medications	8.04% (n=7)	35.63% (n=31)	52.87% (n=46)	3.45% (n=3)
Inappropriate Skills	3.23% (n=1)	41.94% (n=13)	51.61% (n=16)	3.23% (n=1)
Other	30.56% (n=11)	8.33% (n=3)	61.11% (n=22)	0.00%

*Of concern given that more patients were placed at risk for harm (PAE situations) compared to those who were protected by NMs. Although 47 transgressions were intercepted (NMs), 88 transgressions occurred whereby patients were directly placed at risk for potential harm or were harmed.

- *NMs were fewer than PAEs across all three thematic areas. PAEs, which were not intercepted and which thus placed patients in harms way, were the majority of transgressions in each of the thematic areas—both in terms of relative percentages and absolute numbers.*

Given that patients are potentially exposed to harm with an occurrence of a PAE, the data raise some questions concerning the current model of clinical supervision (i.e., one clinical instructor responsible for 6 to 8 or more nursing students). Of course, this standpoint is informed by a data set which focused on students who struggled with their clinical practice. However, the CI model does have some significant fault lines which can quickly fracture and place students

at risk for error and patient safety concerns. (See also ES Figure 2, page 40). The following scenario, based on the study findings, illustrates this systems-based phenomenon in action.

- The pool from which potential nursing students have been traditionally drawn is changing; there are now many more English as Second Language [ESL] students, immigrant Canadians, international students, and men enrolled in nursing programs. Some nursing programs in Canada, in order to meet enrolment targets, are accepting students who meet minimal admission standards. Students, who struggle clinically, whether from the traditional or non-traditional student pools, will necessarily draw heavily on the CI's time, energy and efforts and thus attenuate the CI's supervisory/supportive reach with the other students. The presence of two or more weaker students further attenuates this reach.

Concurrently, the casualization of the nursing workforce on the unit (which contributes to staffing instability), the inexperience of the clinical instructor as an educator, the increased acuity of patients on the unit, the presence of complex medication treatment regimes, and the lack of confidence and basic skill preparation among students combine and exert real pressures on the CI and, by default, the model. Under such pressures, these fault *lines* can *fracture*. Students are then placed at risk for precipitating patient safety events.

Data from the focus group interviews also support these observations. The majority of participants voiced concerns with the CI model. These concerns were echoed and validated across the individual and focus group interviews.

- CIs are the fulcrum point between theory and practice, and between the education and practice contexts; they are central to the education of nursing students. And yet, CIs share many of the following characteristics: they may be inexperienced as educators; they may be inexperienced (newly graduated) as clinicians; they are a transient staff population with a concomitant high turnover rate; the salaries associated with these positions are not necessarily competitive or attractive; CIs are often 'at a distance' from the nursing program proper, i.e., not considered as bona-fide faculty members; they are subject to an increasingly diverse and complex student population; they may be "parachuted" onto a unit and lack the collegial relationships that are absolutely integral to patient safety and the students' safe care of patients; and, they may be reluctant to initiate clinical improvement plans and/or fail students.

This model of clinical supervision, which has been in place within nursing education for many decades, warrants evaluation in light of the significant changes which have occurred in the education and practice settings.

IV. Comparison of Transgressions for Years Three and Four

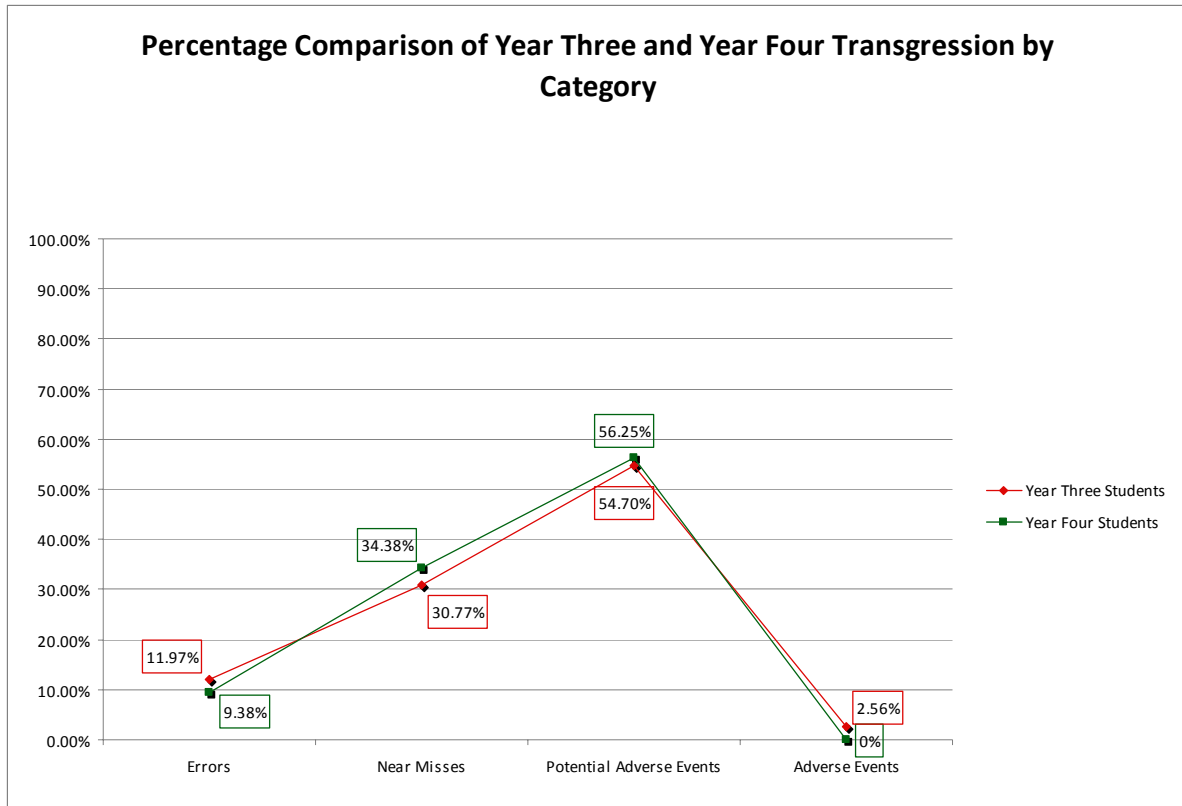
Transgressions arising from Year Three and Year Four were initially analyzed separately and these findings follow this section. However, in terms of overall transgressions, a comparison of these three years revealed similarities and differences. In examining transgression types, there was a remarkable parallel between these years.

Table 1.05. Type and transgression percentages: Year Three and Year Four students

Transgression Classification	Year 3 Transgressions	Year 4 Transgressions
Errors	11.97%	9.38%
Near Misses	30.77%	34.38%
Potential Adverse Events	54.70%	56.25%
Adverse Events	2.56%	0

Year Three and Year Four were virtual mirror images of each other with respect to the percentage classification of clinical transgressions. In Year Four, there were relatively more Errors, and no Adverse Events. These findings are illustrated in the following Chart (1.14).

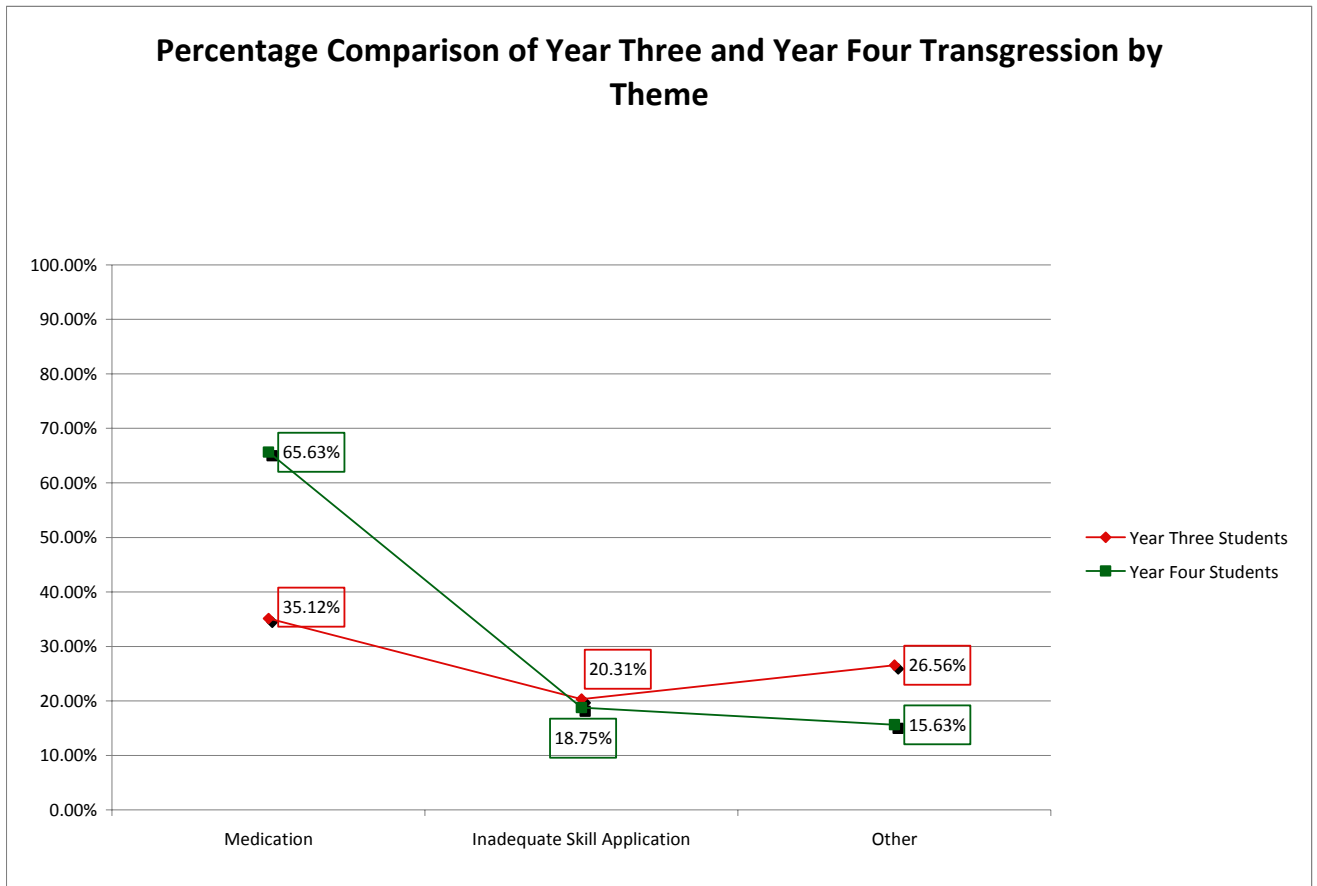
Chart 1.14: Percentage Comparison of Year Three and Four Transgressions by Category



Differences between these two years “played out” with respect to the thematic areas (*medications, inappropriate skill application, and “other”*). Year Four students had relatively more medication concerns compared to the Third Year students. This may be explained, in part, because Year Four students practiced with more autonomy and their patient load was typically higher. Also, the nature of Year Four practice (patient assignments) may have entailed more complex medication administrations.

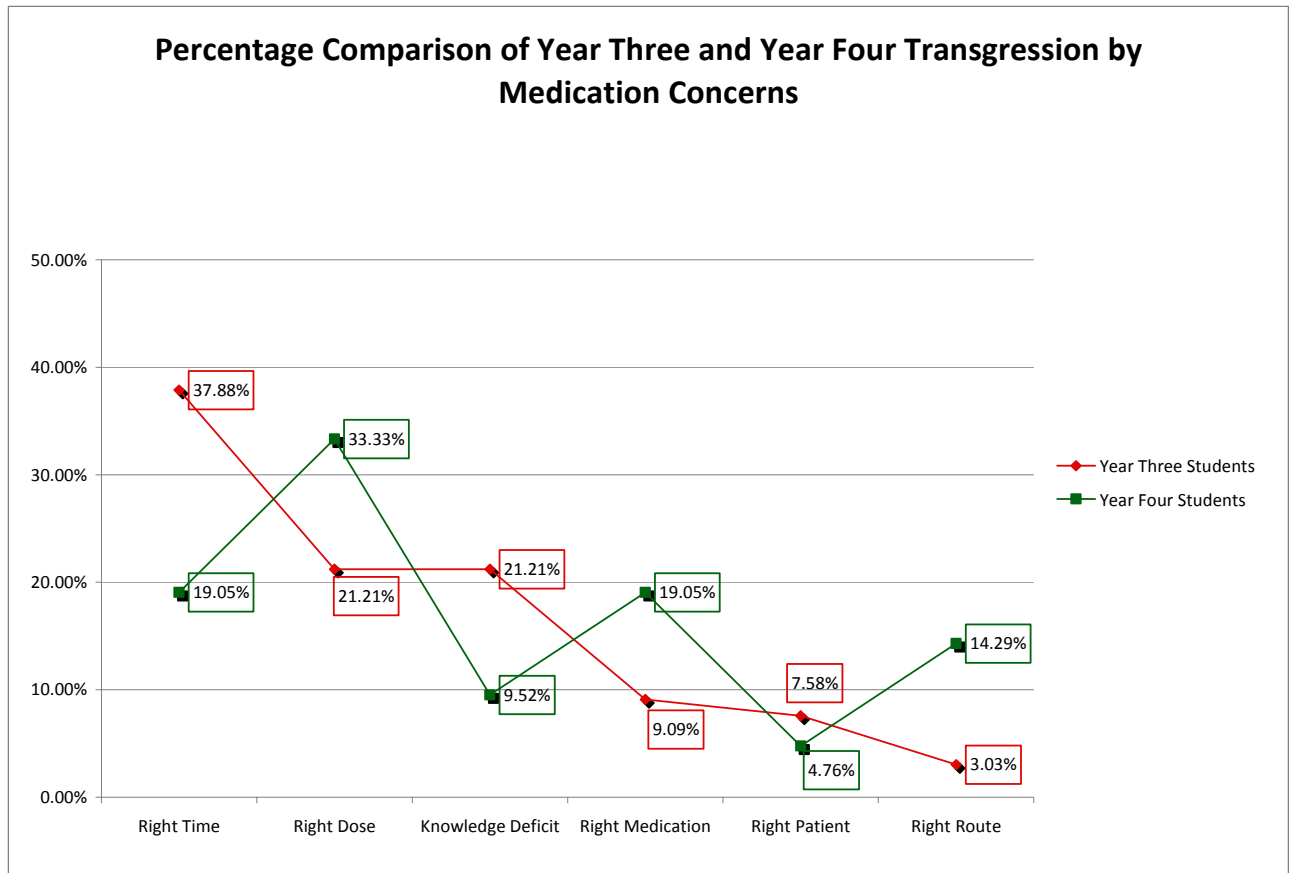
There was no overt difference between Years Three and Four with respect to inadequate skill application.

Chart 1.15: Percentage Comparison of Year Three and Year Four Transgressions by Theme



Year Three students experienced relatively more transgressions with respect to “Other” compared to their Year Four counterparts. Year Four students had the clinical advantage in that they completed Year Three clinical and thus may have been afforded opportunities to develop their skills, better organize their nursing care, engage in appropriate nursing care priorities, and display assessment and recording competence.

Chart 1.16: Percentage Comparison of Year Three and Year Four Transgressions by Medication Concerns



An interesting pattern of difference, between Years Three and Four, was discerned with respect to medication concerns. In contrast to the mirror image of transgressions by type (Errors, Near Misses, Potential Adverse Events, and Adverse Events), Year Three and Four students were polar opposites with respect to the *Five Rights of Medication Administration* and *Knowledge Deficit*. The following explanations may account for such differences:

- Year Four students may be better organized in the provision and prioritization of their nursing care, and they may have had a more developed “awareness” regarding the timing and/or administration of medications.
- It is not surprising that Year Four students had relatively more concerns regarding the *Right Dose* compared to their Year Three counterparts. The complexity of nursing care and the concomitant intricacies of medication

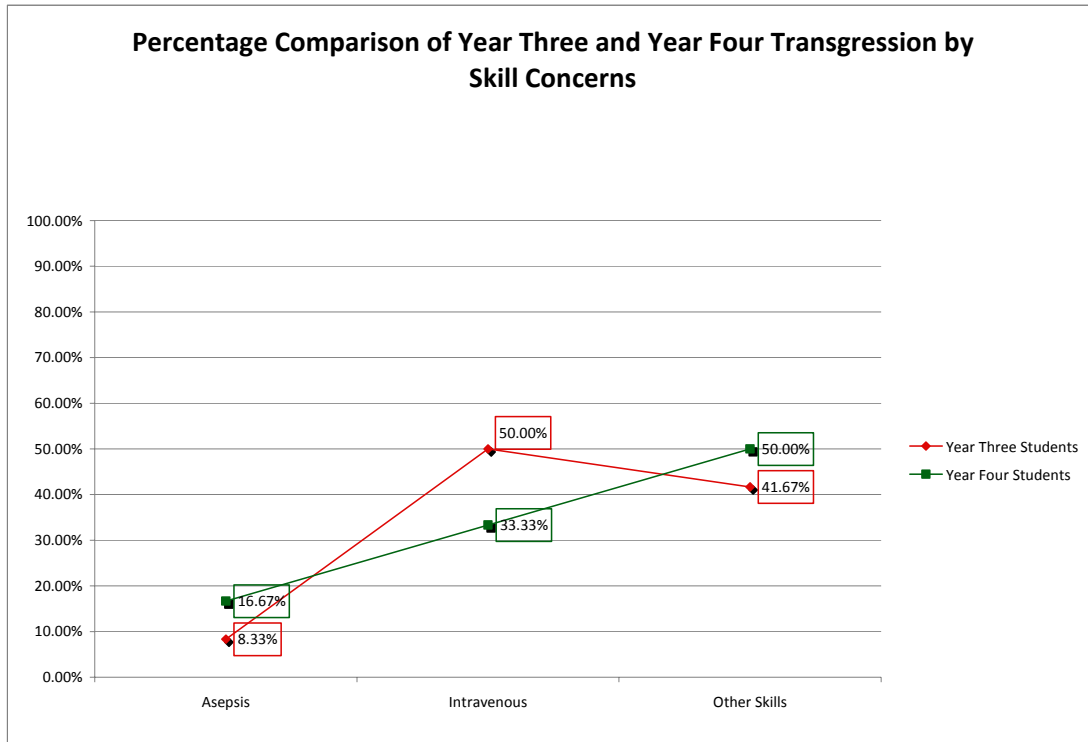
administration may account for the differences in Years Three and Four in terms of this category.

- It makes sense that Year Four students had fewer medication concerns regarding medication knowledge deficits. Again, their "clinical advantage" (completing Year Three clinicals) would expose them to a host of medications. They would also have completed additional medication cards and have become more familiar with commonly prescribed medications.
- That students check their patient's identification band is often considered an early-on skill (i.e., this skill is learned during initial or first clinical practice settings). Thus, by Fourth Year, students are more likely to ensure the identity of their patients compared to students in their Third Year.

In this following Chart (1.17), comparisons are made in relation to three areas of skill application: asepsis, intravenous, and other skills.

- *In this sample of learning contracts, the Year Four students demonstrated much greater limitations and skill incompetence regarding asepsis. Clearly they had failed to master this skill in Years Two and Three, or they were afforded limited opportunities for skill development within their nursing program.*
- *Year Three students revealed many more difficulties with respect to the management of intravenous devices, compared to the Year Four students.*
- *And finally, students in both years appeared to struggle equally with respect to other skills (assessment, reporting, recording, etc.).*

Chart 1.17: Percentage Comparison of Years Three and Four Transgressions by Skill Concerns



SECTION 1 CASE STUDIES

Year Two Nursing Students

A random selection of clinical learning contracts from archived student files (1999-2005) yielded a sample of eleven Year Two case studies. With respect to clinical practice, these students were placed in community agencies and in three areas of practice: agencies characterized by the care of the elderly (e.g., senior wellness centers); maternal-child health; and family visiting experiences. The demographic profiles of the students who entered into the clinical learning contracts are presented in Table 1.06.

Table 1.06: Age Percentages by Category and Gender

Age Range	Total Percentage	# male	Percentage male	# female	Percentage female
Overall	NA	5	45.45%	6	54.54%
18-25	63.63%	2	18.18%	5	45.45%
26-35	36.36%	3	27.27%	1	9.09%

Of interest, 54.5% (n=6) of the sample were female and 45.5% (n=5) were male students. Given the small number of students, some caution is warranted when interpreting the data. However, in this sample, males appeared to be over-represented as students required to enter into clinical learning contracts.

Although the number of male nursing students in Canada remains unknown, the number of males in the Canadian RN workforce is reported as 5.6% (CNA, 2006).

The number of male nursing students likely ranges from 5% to 10% within undergraduate nursing programs in Canada.

In this sample, and when compared with the females, males were older on average (24.6 versus 22.5). Males ranged in age from 19 to 31; females ranged in age from 20 to 26. The majority of students (63.6%; 7/11) were aged 18-25 and the average age of the Year Two students was 23.45. Just over one quarter of the eleven clinical learning contract cases (27.2%; 3/11) involved international students. Their countries of origin included Jamaica, Somalia, and Poland. Two of the three international students were male. Again men, and in this instance international male students, appeared to be over-represented among the Year Two students who were required to enter into a clinical learning contract. There was one Aboriginal (Canadian) student among the eleven cases.

In relation to clinical learning contract outcomes, two students voluntarily withdrew from their respective clinical courses immediately after the learning contract was implemented¹⁴, and two Canadian students failed their clinical courses despite being enrolled in a learning contract (i.e., they obtained a D or F as the final letter grade in their clinical courses). Both of the students who failed were male nursing students. In contrast, the clear majority of students (77.7%; 7/9) who were supported by the learning contract process successfully completed their clinical courses. This finding is of note since all students placed on the learning contract protocol were exhibiting performances which put them at-risk for failing their clinical courses. It is also interesting to note that the female students clearly outperformed the male nursing students with respect to positive learning contract outcomes (Summarized in Table 1.07).

¹⁴ The Nursing Program has since revised the voluntary withdrawal (VW) policy such that once a clinical learning contract is initiated, students are unable to VW.

Table 1.07: Year Two Learning Contract Outcomes by Gender and International Student Status

Grade	Males	Females	International
B+		2	1 (male)
B		2	
C+		1	1 (male)
D	1		
F	1		
Total	2	5	2

Total is based on n=9 as two students voluntarily withdrew from the course once a clinical learning contract was initiated, i.e., their course outcome was "VW" (voluntary withdrawal) and no letter grade was accorded. The shaded areas denote students who failed.

The following thematic areas are addressed among the Year Two case studies:

Figure 1.02

- | | |
|------|--|
| I. | Professional Socialization: Development of the Registered Nurse Identity |
| II. | Nursing Care Concerns |
| III. | Clinical Transgressions |
| IV. | Remediation and Rehabilitation |
| V. | Students Failing Clinical: Understanding Why |

I. Professional Socialization: Development of the Registered Nurse Identity

Within the theme of professional socialization, the major finding arising from the eleven Year Two case studies concerned accountability. Students did not meet expected accountability regarding nursing behaviours as defined through the clinical course objectives, the expectations of the clinical instructor, the unit staff, and/or the clinical evaluation tool. Lack of accountability occurred in four areas (See Figure 1.03). Students failed to demonstrate accountability with respect to communication; with their clinical instructor, their patients, and fellow classmates. Lack of accountability also undermined the students' efforts to demonstrate expectations of a professional nurse. However, the clinical instructors, through the application of the clinical learning contracts, clearly held students accountable and responsible for their nursing care (including communication) in the practice context.

Students in this sample also struggled with the development of their professional identity and attitude in their presentation of self in the practice context. For example, these students did not wear name tags, arrived late to the practice context, engaged in inappropriate dress and deportment, were absent from clinical without any explanation, and used "street" versus professional language in the practice context. Several students were unprepared for their clinical rotation and although few in number, two students engaged in unethical behaviour with respect to their clinical assignments.

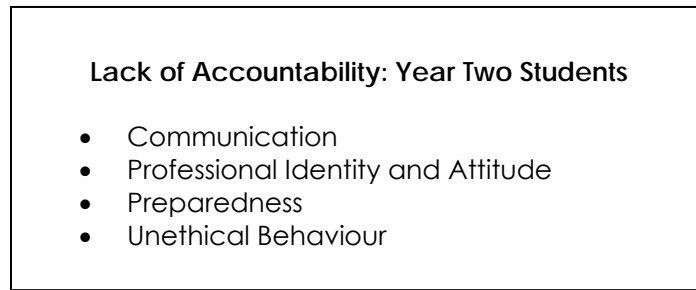


Figure 1.03

Communication. Several students did not inform their clinical instructors and/or the practice unit “buddy nurses” (registered nurses) that they would be late for clinical practice.

Not informing the clinical instructor when sick or when missing a public health nurse’s day [clinical placement]. Clinical instructor called and “discovered” that the student was ill. Absence from clinical without an explanation (P-11, A-21, F).¹⁵

Not apprising clinical instructor of missed time. Not informing the instructor about a late assignment (P-4, A-19, M, I).

Not actively participating or minimally engaging in clinical post-conferences was also an issue for some second year students.

Limited contributions or participation regarding conferences; limited or no spontaneous participation in guided discussion. Use of one word or one line responses. Limited eye contact (P-6, A-31, M).

Communication in group conference; occurs only when called upon by the CEF (P-10, A-26, M).

Not informing assignment partner of upcoming absence was clearly a professional communication issue as this textual excerpt highlights.

¹⁵ P=participant, A=age, M=male, F=female, I=international

Not informing [assignment] partner when leaving town. Leaving partner on own to work through project and leaving him without the benefit of consulting with you on the project (P-11, A-21, F).

Professional Identity and Attitude. Students used inappropriate language in the practice setting, i.e., casual and potentially offensive phrases.

Inappropriate language, "Oh crap" in the presence of clients, peers, and the clinical instructor (P-4, A19, M, I).

Some students were consistently late in submitting clinical assignments with no prior discussion with the clinical instructor, thus demonstrating an unacceptable attitude.

Missed deadline regarding nursing care plan (NCP). Evaluation of the client's NCP was not completed by the requested timeline (P-6, A-31 ,M).

Late for clinical practice with no explanation. (P-4, A-19, M, I).

In the following excerpts, the student's attitude, presentation of professional self, and posture undermined his professionalism.

Inappropriate attitude and behaviour. Inattentive and staring into space (P-4, A-19, M, I).

Inappropriate attitude. Appeared impatient with the clinical instructor. Bored; looking at wristwatch multiple times (P-4, A-19, M, I).

Lacks curiosity about the lived experience of older adults (P-4, A-19, M, I).

Lack of professional appearance. Not wearing official nametag or not wearing any nametag (P-4, A-19, M, I).

Inappropriate posture. Non-professional stance. Sitting in a reclined position with legs outstretched and back resting in a chair (P-4, A-19, M, I).

Preparedness. Initial clinical experiences served as a crucible for the formation of professional behaviours, identity, and the professional socialization process.

Students were expected to prepare for clinical and arrive on units "practice ready." This included cardio-pulmonary (CPR) certification, and having

resources such as textbooks and stethoscopes. In the following examples, students demonstrated a lack of accountability with respect to clinical preparedness.

Lack of accountability regarding preparation for practice. Not having a valid CPR certificate and therefore you [student] were barred from attending clinical [missed day] (P-11, A-21, F).

Not bringing text to clinical, as required. Not obtaining patient assignment prior to clinical (P-4, A-19, M, I).

No stethoscope. Presented to clinical without a stethoscope. Was apprised of the need to have a stethoscope the day before clinical (P-4, A-19, M, I).

Unethical Behaviour. Four students in this sample engaged in unethical behaviour in relation to their clinical assignments. In two of the case studies, students conducted a "family assessment" with a friend/family member rather than a client. The assignment guidelines clearly stipulated that the client must not be a friend or relative.

Unethical behaviour regarding an assignment. Visited a family/friend member for the family assessment assignment (P-8, A-22, F) & (P-9, A-20, M, I).

One student collaborated with other students on his/her individual nursing care plan, i.e., the care plans were to be developed without collaboration. And finally, a student had to attend a family-related crisis, but did not inform her assignment partner of her impending absence. Since the assignment was "due" during her absence, her partner had to carry the full weight of the assignment on his own.

II. Nursing Care Concerns

Substandard nursing care was of concern to the clinical instructors because it situated students on the edge of transgressions and placed them at risk for

precipitating a patient safety event. Unaddressed nursing care concerns could potentially place students “at risk” for errors, near misses, potential adverse events, and adverse events. Concerns about the nursing care provided by Year Two students centered on three areas; lack of knowledge and its application, inadequate organizational skills and the prioritization of nursing interventions, and lack of insight into their own practice and learning needs.

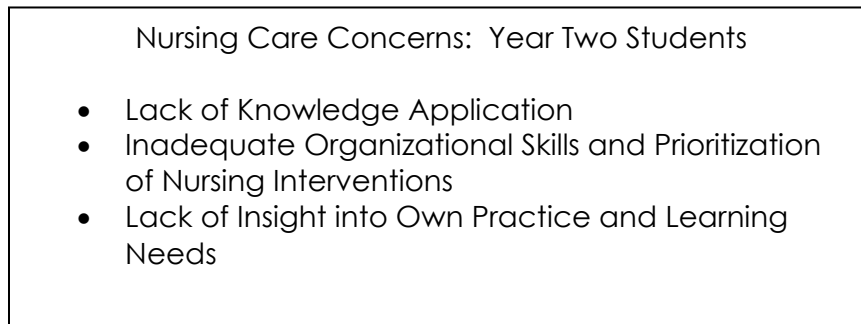


Figure 1.04

Lack of Knowledge Application. Students lacked knowledge (e.g., they had not prepared for their particular patient assignments), or they were unable to bring knowledge forward and/or apply it from previous learning experiences. In addition, students were challenged to engage in knowledge synthesis, i.e., they had to bring together seemingly disparate knowledge in the direct provision of nursing care to patients. Students were also expected to evidence growth in their clinical practice over time.

Application of knowledge. Knowledge of theoretical principles and application is lacking—such as how to do a bed bath or complete post-partum checks; lack of post-partum theory (P-7, A-22, F).

Reluctance to care and a lack of knowledge. Reluctance to care for client who had developed a skin rash—side effects due to antibiotic medication—because of a lack of knowledge (P-10, A-26, M).

Transfer (uptake) of knowledge or synthesis of knowledge. Decreased initiative to transfer assessment skills/knowledge from prior courses, e.g., health assessment (P-6 ,A-31, M).

Inadequate Organizational Skills and Prioritization of Nursing Interventions. One of the major developmental challenges for students was to plan their care. Students lacked the ability to organize their nursing care, and moreover, to identify patient priorities with respect to their nursing interventions.

Improve organizational skills. Develop and improve organizational skills and prioritization. Needed reminders to complete morning routine, i.e., Charting, post-partum checks disjointed. Need to prioritize client needs—such as assessing client's degree of assistance required (P-4, A-19, M, I).

Inability to complete care consistently in an organized fashion and anticipate needs with the same client by week IV. For example, open tray lids, assist with setting up trays, ensure dentures are in, comb hair, change soiled bed linen, explore client's psycho-social needs (P-10, A-26, M).

Lacking Insight into Own Practice and Learning Needs. Finally, and in relation to nursing care, students lacked insight into the nature of their nursing care, including their learning needs. Students were expected to evaluate the quality of their care, and identify where corrections or improvements were required. In addition, they were to identify opportunities for learning within the practice context and in relation to their assigned patients.

Lack of insight into nursing practice. Lacks insight. State that you do not understand, but you do not seek guidance from the clinical instructor (P-10,A-26,M).

Lack of insight into learning needs. Lack of documentation on Weekly Practice Review. Lack of verbalization in this regard (P-4,A-19,M,I).

III. Clinical Transgressions

Among the eleven clinical learning contracts, there was only one case study in which clinical transgressions placed patients directly at risk for their safety or well-being. In contrast to the other 10 students, this male international student demonstrated a constellation of disconcerting and unsafe behaviours which were multiple, concurrent, and which did not improve over time. His unsafe practices included ongoing errors and omissions. An analysis of the case study follows.

The student obtained patient data that required immediate nursing interventions. He did not appreciate or understand the significance of the data obtained and therefore did not initiate any actions, i.e., the patient could have been harmed as a consequence of not taking action regarding her/his blood sugar. Thus, the student precipitated the following potential adverse event (PAE).

Not alerting the clinical instructor of the client's low blood sugar—while the client was present in the clinic. Shared this information with the clinical instructor after the client had left the clinic (P-4, A-19, M, I).

During the course of clinical, the student also discovered a malfunctioning glucometer. He took no action to apprise anyone, including the clinical instructor, of the malfunctioning equipment. This resulted in an adverse event and patients were harmed (unnecessary repuncturing of their skin with a concomitant increase in risk of infection).

Left glucometer [malfunctioning] for peers to use. This created delays and the unnecessary repuncturing of other clients (P-4, A-19, M, I).

This same student was also deficient with respect to data collection, documentation, and follow through with patients. The following two textual excerpts illuminate errors the student made. The third event was coded as a potential adverse event (PAE), as it had the potential to harm the patient.

Inadequate data collection. Follows the structure of the form—to collect basic data. Lacks scope and depth of assessment (P-4, A-19 ,M, I).

Lack of documentation. Did not complete progress record for a home client with shortness of breath (P-4, A-19, M, I).

No follow-up with client. Agreed to conduct a second follow-up telephone call with a client—to assess progress further to a hospital referral the week prior. Left clinical without conducting the follow-through or advising the clinical instructor of alternate plans (P-4, A-19, M, I).

In this case, the student violated a number of practice expectations. The nursing care he provided did not meet expected practice standards. Consequently, patients were placed at-risk for harm or were harmed. The student demonstrated a lack of understanding about normal blood sugar. He did not actively communicate this finding with his clinical instructor (his peers or staff nurses), and demonstrated a lack of accountability as a nursing student (i.e., inadequate documentation and absence of follow through with a patient).

IV. Remediation and Rehabilitation

Remediation and rehabilitation of Year Two students revealed two themes that were then subsequently divided into categories. The first theme focused on remedial activities that were "Student-Centered", i.e., activities and assignments for which students were responsible for completing. This theme was made up of

three categories: respecting due dates and times; critical and reflective writing, and; follow through with suggested resources.

The second theme reflected activities that were "Clinical Instructor-Centered" and involved an overall commitment from CIs to provide extra time, supervision, guidance and support to students. This theme was then constituted by two categories: increased supervision and support which included increased access to the CI; and, strategies to evaluate oral/written comprehension.

Student-Centered: Remediation and Rehabilitation Activities

These student centered activities consisted of three categories. (Figure 1.05)

Remediation and Rehabilitation Activities: Year Two Students

- Respecting Due Dates and Times
- Critical and Reflective Writing
- Follow Through with Suggested Resources

Respecting Due Dates and Times. This was a concern for two students. Both students were women, aged 20 and 26 respectively. The assignments in question were patient teaching plans. These students generally did not respect due dates identified by the clinical instructor. Thus, the students had to submit their patient teaching plans on time for the remainder of their clinical rotation.

Critical and Reflective Writing. Another student-centered activity was to assist students to improve their critical and reflective writing skills. They were required to increase their journal writing, or to write an expository paper.

One student, a 27 year old male who eventually failed clinical, was obligated to write a 2-3 page reflective journal for each clinical week during the remainder of his community rotation. This reflective journal exercise encouraged the student to consider theory-practice linkages, engage in critical thinking, and develop insight into his nursing practice.

The reflective journal will focus on caring, professionalism and the use of nursing process in order to deepen your ability to observe, consider the total context of the situation, think critically, demonstrate insight, link with theory/literature, consider the meaning of what you observed, demonstrate creative thoughts in problem solving and offering alternatives to practice/or practice observed. The journal will reflect experiences of both clinical days each week i.e., Home visits, health screening clinics and health fair activities (P-5, A-27, M).

Two other students, a 20 year old male International student and a 22 year old female Canadian student, were asked to write an expository paper on *Truth, Dishonesty, and Ethical Standards in Nursing*. This remediation activity was assigned to the students because they engaged in behaviour that was both unprofessional and unethical regarding their community assignment. The students knowingly recruited and visited a family member when this was noted as unacceptable in the syllabus, and both students sought to conceal their relationship to such persons.

You will explore the issue of truth and the implications for nursing and society when members are dishonest. The paper will include the following elements: 1) a definition of truth 2) a definition of dishonesty 3) exploration of CNA Code of Ethics statements relating to truth and dishonesty 4) a minimum of 3 references from the

disciplines of philosophy and/or ethics exploring how society is affected when members are dishonest 5) a minimum of 3 references from the disciplines of philosophy and/or ethics exploring the issue of truth 6) a reflection of what the students have learned from this episode and what implications it may have for their future careers in the Faculty of Nursing and after graduation 7) there must be evidence that the students have reflected on their actions in light of what they have learned from their literature search 8) this paper to be submitted by (a certain date) (P-8, A-22, F) & (P-9, A-20, M, I).

This remediation exercise appears to be particularly thorough in its requirement of the seven elements (listed within the quote above) and encouraged the students to reflect critically on the nursing profession as a whole, its impact within society, and on each student's future place within nursing. It also highlighted the responsibility students have to meet professional expectations. This assignment engaged the idea that personal reflection on topics such as truth and dishonesty were crucial to the nursing profession and the integrity of its practitioners.

Follow Through with Suggested Resources. One 26 year old male student who failed his clinical learning contract was referred to an English Language/Communication Instructor during the term to “review approaches, evaluate the effectiveness of suggestions made, and revise strategies directed at improving his communication skills.” Another male student was directed to textbooks and required readings to expand his knowledge base with respect to nursing and the care of the older adult.

Clinical Instructor-Centered: Remediation and Rehabilitation Activities

The theme of clinical instructor-centered activities consists of four categories and these are described in detail below.

(Figure 1.06)

Clinical instructors were committed to

assisting students with their growth in the practice setting. One of the key conditions commonly set out in the Year Two learning contracts was increased student supervision. Because these students were “at risk”, the clinical instructors observed them much more closely.

Increased Supervision by the CI. Of the eleven Year Two students, four students were subject to increased clinical supervision and support from their respective CIs. Of note is that three of these four students were male, aged 19, 26, and 31 respectively. The 26 year old was one of two male nursing students who failed the clinical learning contract and thus his clinical course. Increased direct supervision was accorded to all three males. Two of the male nursing students received extra time from their CIs.

Faculty will 1) increase supervision during home visits, screening clinics and health fair presentations to offer you the opportunity to demonstrate competence in all areas of your practice until the last clinical day in the community rotation 2) increase the time designated for supervision and individual consultation with you during the facility rotation to monitor your progress and clinical practice (P-5, A-27, ,M) & (P-10, A-26, M).

Clinical Instructor-Centered: Remediation and Rehabilitation Activities

- Increased Supervision by the CI
- Performance Reviews/Feedback
- Increased Time and Access to the CI
- Strategies to Evaluate Oral/Written Comprehension

Of the four students who were offered increased supervision and support, three demonstrated sufficient improvement over the time allotted and passed their clinical courses.

Performance Reviews/Feedback. One CI made herself more available to a student and reviewed the student's performance throughout the remainder of the course. The CI also offered guidance and support as appropriate. The 26 year old female student was offered augmented supervision through performance reviews and feedback. The CI also committed to attending a home visit with this student. The following textual excerpt illustrates this example of a CI-based activity/intervention.

Clinical instructor identifies availability via telephone and how she/he will support the student i.e.: mark care plans once handed in and make arrangements to return them to student ASAP; Clinical instructor will attend home visit #3; Clinical instructor will meet as needed to go over performance throughout remainder of the course and offer guidance to facilitate completion of course requirements (P-2, A-26, F).

Strategies to Evaluate Oral/Written Comprehension. CIs created an activity permitting two students the chance to gain a better understanding of the nursing profession as a whole through oral and written communication. In both cases, the students were male students who ultimately failed their clinical learning contracts.

Faculty will be available for direction and support while you are completing the remaining clinical practice for the faculty rotation for oral and written work (P-5, A-27, M) & (P-10, A-26, M).

CIs made themselves available so that students might discuss their practice expectations and incorporate strategies that would assist them to evaluate their comprehension of oral and written instructions including those of journal writing.

Faculty request that you explain, describe, discuss, restate, paraphrase, summarize, or review instructions before providing care throughout the clinical day (P-10, A-26, M).

The rehabilitation and remedial activities developed by the CIs to foster improved nursing practice over time were thorough and interactive, and permitted further evaluation to take place in a transparent manner.

Students Who Failed the Clinical Course: Understanding “Why?”

Two male students demonstrated a constellation of issues that contributed to a failing course grade in the practice context; one student was 26, the other 27 years old. Neither were international students. These students displayed a distinct lack of communication with their CIs. Other issues that contributed to their failure were an unacceptable attitude, inability to demonstrate critical thinking, difficulty organizing and prioritizing their nursing care, a lack of professional self-awareness, and a knowledge deficit with respect to patient assessment/data collection. Figure (1.07) represents the systemic issues the two students displayed in the practice setting.

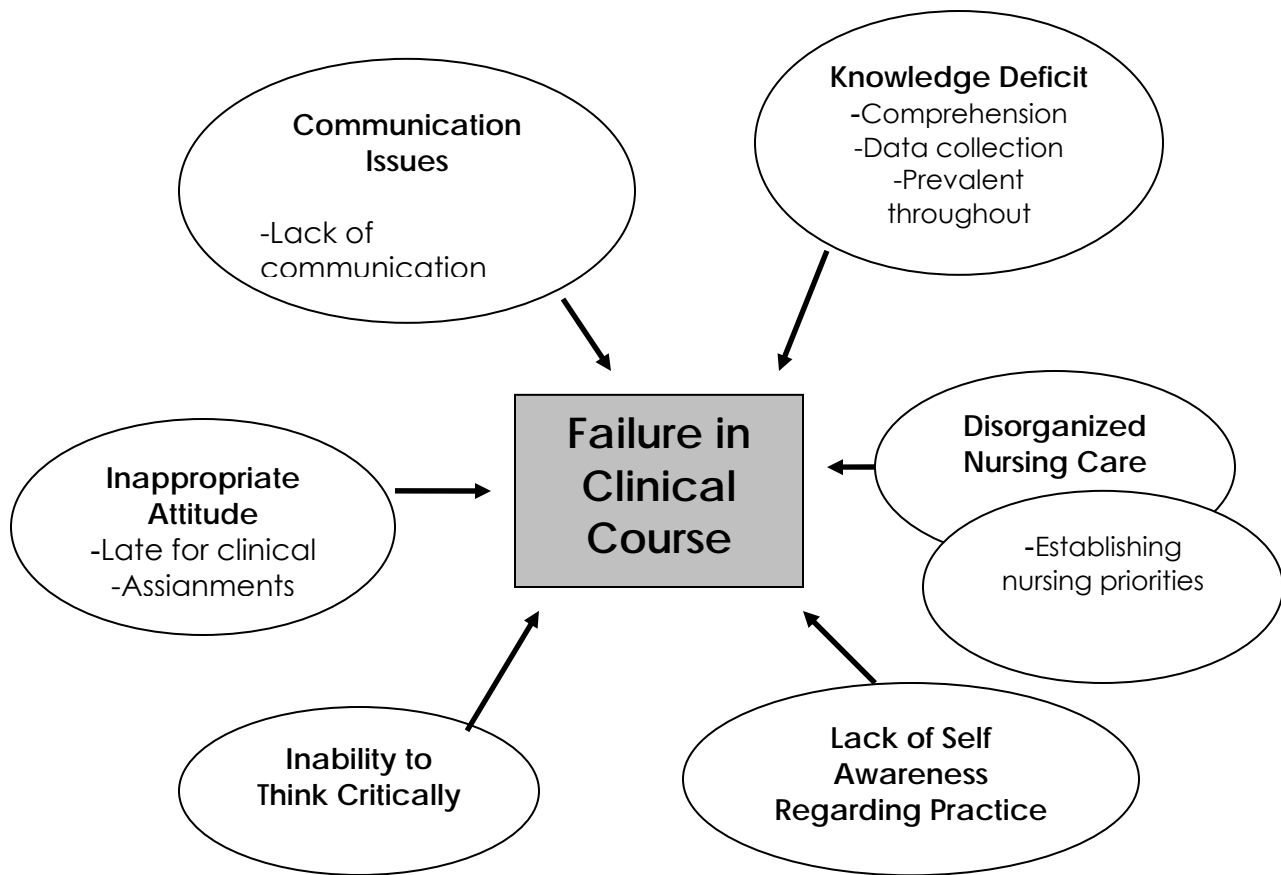


Figure 1.07 Key Factors Contributing to a Clinical Learning Contract Failure

Lack of Communication. Students are expected to establish ongoing communication with their respective CIs. In the following examples, students were reluctant to initiate communication with their CIs. The 26 year old male had to be reminded to report to his CI at the commencement, mid-point, and end of each clinical day to discuss his nursing care plan, nursing actions, learning needs and progress. This same student may also have had difficulty communicating in English because a referral was made on his behalf to a English/Communication resource. Of note, this was not an international student.

Inappropriate Attitude. An unprofessional attitude was a factor in the failure of the 27 year old male student. He did not respect assignment due dates and times.

Late assignment: You phoned after 9am on due date for teaching plan indicating it would be late. Syllabus states that 24 hour notice is required (P-5, A- 27, M).

This same student also missed the first half of his clinical tour and despite the CI's agreement to leave early to attend an appointment, he did not report to clinical, stating that he "could not find it" (clinical site). The 26 year old male student was also late for clinical on a regular basis and was told that any further illness would require a medical certificate.

Inability to Think Critically. The ability to think critically is foundational to nursing practice. Students are challenged to develop and improve in critical thinking as they move through their nursing education. This ability contributes to a more sophisticated demonstration of knowledge synthesis. Students are expected to bring to the clinical context knowledge gained through literature reviews, research, clinical preparation activities, and past and current learning activities. Critical and reflective thinking and writing were challenges for both the male students who failed.

Develop a reflective journal that will focus on caring, professionalism and the use of nursing process in order to deepen your ability to observe, consider the total context of the situation, think critically, demonstrate insight, link with theory/literature, consider the meaning of what you have observed, demonstrate creative thoughts in problem solving and offering alternatives to practice/or practice observed (P-5, A27, M).

Review the article by Callister listed in 219 of the syllabus to assist you with the development of reflective thought and writing (P-10, A-26 M).

Disorganized Nursing Care. Despite encouragement and support from their CIs, these two students were unable to demonstrate growth in their nursing care. They remained unable to organize their nursing care throughout the duration of their clinical rotation. Accompanying this deficit in organizing care was the inability to prioritize nursing care concerns. The 27 year old male could not perform nursing interventions effectively, lacked consistency in completing his care in an organized fashion, and could not anticipate the needs of the same client by week four. For example, the student needed assistance to set up trays and to complete basic care. Specifically, he did not ensure that his patient's dentures were in place during mealtimes, he did not comb the patient's hair, and he failed to change soiled linen.

Lack of Self-Awareness Regarding Practice. The 26 year old male student demonstrated a lack of insight into his nursing practice; he did not obtain help and support in relation to his nursing care.

Each clinical day you were encouraged by the clinical instructor to ask questions or verify your thinking/learning. You were advised to verbally acknowledge your clinical instructor when you experienced poor comprehension, were seeking knowledge, or required assistance to enable your facilitator to further clarify, guide and support (P-10, A-27, M).

Self-awareness was also lacking with the 27 year old student. This was reflected in the CI's instructions which encouraged him to engage in self-reflection and awareness exercises.

Include in your Weekly Practice Review reflections on your learning, thoughts about your learning, thoughts about your clinical experiences and areas for growth (P-10, A-27, M).

Unlike other students placed on clinical learning contracts, these two students were unable to demonstrate growth in their practice over time. They continued to evidence limitations in a host of areas: communication, organization of nursing care and setting priorities, ongoing knowledge deficits, lack of self-awareness regarding their practice concerns, inability to demonstrate critical thinking, and unprofessional behaviour. The students were greatly challenged to improve given the constellation and volume of their respective deficiencies.

SECTION ONE CASE STUDIES

Year Three Nursing Students

A random selection of clinical learning contracts from archived student files (1999-2005) yielded a sample of 36 Year Three case studies. With respect to clinical practice, these students were placed in medical/surgical settings which included pediatric, adult, and restorative surgery. Student demographic profiles are presented in Table 1.08.

Table 1.08: Age Percentages by Category and Gender

Age Category	Total Percentage	Males	Percentage Male	Females	Percentage Female
Overall	N/A	6	16.66%	30	83.33%
18-25	47.22%	2	5.55%	14	38.88%
26-35	33.33%	1	2.77%	11	30.55%
36+	19.44%	3	8.33%	5	13.88%

Of interest, 83.33% (n=30) of the sample were female, while 16.66% (n=6) were male students. In this sample of Third Year students, males appeared to be over-represented. As identified earlier, the number of male nursing students in Canada remains unknown. Males in the Canadian RN workforce are reported as 5.6% (CNA, 2006). The number of male nursing students is estimated to range from 5% to 10% within undergraduate nursing programs in Canada.

When compared with males, females were slightly younger on average (27.8 versus 28.1). Female nursing students ranged in age from 21 to 50; males ranged in age from 23 to 44. The average age of the Year Three students was 22.31. The

majority of students (47.2%; 16/36) were aged 18-25. Over one third of the 36 case studies (36.1%; 13/36) involved international students from the following countries or origin: Sierra Leone, Somalia, Ethiopia, Philippines, El Salvador, Laos, United Kingdom, USSR, and Peru. Nine of the thirteen international students were female; just over 30% of the international students were males.

With respect to clinical learning contract outcomes, ten students voluntarily withdrew from their respective clinical courses immediately after the learning contract was implemented.¹⁶ Three students did not meet the conditions of their learning contracts and consequently failed their clinical courses (i.e., they obtained a D or F as the final letter grade in their clinical courses). Of the 3 students who failed, two were males; one was Canadian while the other was an international student. The one female student who failed was also Canadian. The clear majority of students (88.46 %; 23/26) successfully completed their clinical learning contracts. This was a finding of note since these 26 students exhibited behaviours which placed them at-risk for failing their clinical courses. It is also interesting to note that the female nursing students clearly outperformed the male nursing students with respect to positive course outcomes. These outcomes are summarized in Table 1.09.

¹⁶ Each of the 36 case studies was included in the data set and was subject to data analysis. Students who voluntarily withdrew from their clinical courses (N=10) were accorded a "VW" grade on their transcripts. In considering pass/fail rates, these 10 students were eliminated. Otherwise, their data were included in the findings of this study.

Table 1.09: Year Tree Learning Contract Outcomes by Gender and International Student Status

Grade	Males	Females	International
A			1 (female)
B+		3	
B		4	1 (male) 3 (female)
C+		4	2 (female)
C		4	1 (female)
D			1 (male)
F	1	1	
Total	1	16	9

Total is based on n=26 as ten students voluntarily withdrew from the course once a clinical learning contract was initiated, i.e., their course outcome was “VW” and no letter grade was accorded. The shaded areas denote students who failed.

I. Professional Socialization: Development of the Registered Nursing Identity

Within the theme of professional socialization and identity development, four supportive categories were generated:

- Not Responsible, Nor Accountable for One's Actions;
- Inappropriate Attitude;
- Lack of Communication; and ,
- Fitness to practice.

Examples of each category are presented in Table 1.10.

Professional Socialization and Identify Development Issues	Examples
Neither Responsible, Nor Accountable for One's Actions	<ul style="list-style-type: none"> • Lack of self-awareness regarding actions and/or consequences • Late for clinical • Clinical Attendance • Late assignments
Inappropriate Attitude	<ul style="list-style-type: none"> • Defensive • Challenging the CI • Disinterested/unenthusiastic • Apathy/indifference • Body language suggestive of boredom
Lack of Communication	<ul style="list-style-type: none"> • Not apprising the CI of the need for assistance • Lack of visible presence on clinical unit
Fitness to Practice	<ul style="list-style-type: none"> • Fainting (stress related) • Anxiety • Uncontrolled shaking

Neither Responsible, Nor Accountable for One's Actions. Some students denied responsibility for their own behaviour. This presented itself in three ways; not being accountable for mistakes they made during their clinical rotation; not providing adequate rationale for their behaviour; and/or, blaming others for their own actions. One student "consistently made [dishonest] excuses for her mistakes in relation to nursing care." This student's lack of accountability for her own actions was of real concern to her clinical instructor and the staff nurses. For another student, illness was cited as the reason for her errors in judgments.

Did not look up policy for ACCU-check and made mistakes due to being ill the night before. Could not reiterate the use, and actions of meds because he has not been feeling well (P-39, A-21, M).

Students could not explicate why their performance was unsatisfactory; they were unable engage in an honest account of their actions. Some students lacked self-awareness (professional awareness) and/or they did not “own up” to their actions. Instead they accounted for their actions by blaming others or attributing their actions to life circumstances.

You have trouble formulating a strong rationale re: your unsatisfactory performance. There has not been a significant improvement over the term thus far (P-35, A-34, F).

Had difficulty with dexterity in doing tracheostomy care with buddy nurse. Stated it was because the nurse made him confused. Stated I [buddy RN] made him nervous (P-39, A-21, M).

A 39 year old male student demonstrated a weak knowledge base and he did not take responsibility for his learning experiences, nor did he take ownership of his practice shortcomings. He did not display progress or growth in his clinical practice over time and subsequently failed the clinical learning contract (his final course grade was a “D”). This student accounted for his behaviour by blaming others.

Not demonstrating adequate progress in the course. Does not accept responsibility for and is quick to blame others for this lack of progress (P-15, A-39, M, I).

Inappropriate Attitude. Five students, one male, and four female (two international) did not demonstrate an appropriate attitude during their clinical rotations. A 33 year old female international student was reported as “not taking direction well from the clinical instructor and becoming defensive.” In another situation, staff nurses perceived the attitude of a 21 year old male international student working on their unit as both challenging toward them, and displaying a defensive attitude when his practice was addressed by the unit nurses or the CI

A 23 year old female international student was reported as seemingly “disinterested and unenthusiastic” by her buddy (registered) nurse and CI. The CI apprised the student that nurses are patients’ advocates, and therefore, nurses must be interested in their patients’ welfare. An inappropriate attitude was also an issue with two other female nursing students. A 21 year old female student who at times exemplified a defensive attitude with her CI and other registered nurses ultimately failed the clinical learning contract and received an “F” in the course. Another 21 year old female exhibited apathy and inappropriate body language.

Consistently demonstrates apathy toward various learning opportunities in the clinical setting. She repeatedly minimizes patient assignments, stating that her patients are too simple and that she is bored. When given additional learning opportunities to take part in, she does not take advantage of them (P-45, A-21, F).

The above example is also supported by her obvious nonverbal communication such as eye rolling when challenged, minimal eye contact and shoulder shrugging when she is addressed (P-45, A-21, F).

Lack of Communication with the Clinical Instructor (CI). Not apprising the CI of missed clinical was evident in two of the case studies. One 30 year old female student contacted another student to inform the CI of her non-attendance at clinical instead of doing so herself. Another female student, 22 years old, was late attending clinical; when she arrived, she only worked half the time she was contracted to work as she went home early.

The unit called the clinical instructor when you did not show up to work. You informed the unit and CI you were going to work 12 hours that day instead of 6 each day. However, you went home after 6 hours. The CI discussed with you the inappropriateness of

modifying your hours without consultation/notification of the unit (P-40, A-22, F).

A 23 year old male international student did not apprise his CI that he had spent extra time in the skills lab practicing sterile technique procedures. He was given explicit instructions to confirm that he had attended this lab session. When questioned why he had not followed through with these instructions, the student stated that he “had not had time yet” and after nearly three weeks the CI had still not received notice that he had followed through on her recommendations.

Lack of Communication: Not Maintaining a Visible Presence. Two male students, one a 44 year old international and the other a 41 year old, did not make themselves visible to their CIs. They did not approach their respective CIs with questions and/or care concerns. These students were prone to “hiding out” on the unit and avoiding contact with their clinical instructors.

While discussing these issues with student, I stated that, “I need to see you at the bedside more often.” However, he does not make a concerted effort to seek out his clinical instructor when he needs help. CI pointed this out to him and impressed on him that he must make more of an effort to find CI if he has concerns (P-46, A-41, M).

Fitness to Practice. Fitness to Practice focuses on encouraging nurses to maintain their physical, mental, emotional, and spiritual well-being. One 23 year old female student coped with stressful practice situations by fainting.

Coping because of stress by fainting. Had to go lie down. Student became overwhelmed by the events (patient’s complex and angry outburst). (P-12, A-23, F).

Another student, a thirty year old female international student, experienced heightened anxiety so severe that she could not function. She precipitated

multiple “pokes” while trying to administer a single subcutaneous (SQ) injection, which required intervention by the clinical instructor. During an ACCU-Check her hands were trembling so much that the patient had to tell her to calm down. A 24 year old female student experienced uncontrolled shaking at times during her clinical rotation.

It has become very obvious that with the increasingly more difficult assignments, and higher expectations as we progressed through this experience, that the student is not able to control her shaking to an acceptable level. Patients and buddy nurses (weeks 9 & 10) have all reported that she is extremely shaky and unsure of herself (P-36, A-24 ,F).

II. Nursing Care Concerns: Year Three

Year Three nursing students were challenged to integrate and apply knowledge as novice practitioners (learners). This entailed moving from general knowledge and understanding (concepts learned in nursing and non-nursing courses) to particular patients with their unique disease conditions and trajectories. Failure to synthesize and critically apply knowledge undermined students' abilities to engage in data collection/assessment, charting, critical thinking, the prioritization of nursing care, and communicating with clinical instructors and unit staff. Furthermore, such knowledge deficits, in relation to their nursing care, placed students at risk for patient safety concerns.

Four themes were generated from the third year student data set with respect to nursing care concerns. The themes included; *knowledge deficit, ineffective communication, inability to organize and prioritize nursing care, and limited skill development*. These themes are presented in Table 1.11. These themes should not be viewed as mutually exclusive with respect to knowledge deficit. For

example, knowledge deficit factored into a lack of critical thinking, inadequate data collection and analysis, and ineffective communication.

Major Theme	Areas of Concern
Knowledge Deficit	<ul style="list-style-type: none"> • Limited understanding of concepts • Inability to apply knowledge • Lack of critical thinking • Inadequate data collection/assessment
Ineffective Communication	<ul style="list-style-type: none"> • Charting issues • Poor oral/verbal communication skills
Inability to Organize and Prioritize Nursing Care	<ul style="list-style-type: none"> • Organization • Patient load • Progress • Time management
Limited Skill Development	<ul style="list-style-type: none"> • Not mastering Year Two skills • Not checking policy/procedure manual

Table 1.11: Nursing Care Concerns: Themes and Categories

Knowledge Deficit. In providing quality nursing care, Year Three students were required to understand core concepts arising from nursing, anatomy, physiology, pathophysiology, pharmacokinetics, psychology, and other relevant knowledge domains. They had to apply this knowledge, moving it from the theoretical to the practice setting (i.e., in their direct care of patients). Moreover, students were required to *think critically* about nursing care situations and problem solve accordingly. Within the theme of *Knowledge Deficit*, there were four categories; limited understanding of concepts, inability to apply knowledge, lack of critical thinking, and inadequate data collection/assessment. A lack of knowledge contributed to nursing concerns in these areas.

Limited Understanding of Concepts. Three students struggled in their understanding of complex concepts. For example, one student had difficulty understanding the concept of fluid balance and its relevance to heart failure. A

39 year old male international student had difficulty with the complex concept of glucose levels.

Patient was nauseated and did not want to eat. Student was uncertain how this might affect the glucose levels. Student had difficulty describing symptoms of the hypoglycemic and hyperglycemic state (P-14, A-33, F ,I).

Another student lacked understanding of core concepts arising from pathophysiology. This knowledge deficit negatively impacted his ability to identify nursing priorities.

Without a concrete understanding of pathophysiology concerning your patients, you have difficulty identifying nursing priorities. This has been brought to your attention on a few occasions. It is vital that you are able to set nursing priorities for your patients in order to effectively and safely care for your patients. This has not been consistently evident. At this point in the course, you should be able to do this (P-23, A-44, M,I).

Inability to Apply Knowledge. Four students had difficulty applying the knowledge gleaned from their theory classes and skills lab to their clinical placement contexts. One 25 year old female student “confused the idea that chronic bronchitis might be related to cancer metastases.” When asked “What is angina?” another student responded by saying “Maybe a blockage.” A 31 year old female student could not adequately apply theory associated with intravenous therapy when communicating with her buddy (registered) nurse.

Buddy nurse said to her that the patient's IV was interstitial and would I come and check it with her. I asked her [student] to describe how the IV looked and she replied “cool and swollen.” I asked her the signs of an interstitial IV and she said she didn't know. Student is unable to apply theory to practice (P-26, A-31, F).

Lack of Critical Thinking. Students had difficulty thinking critically; important patient information relevant to nursing care was “missed” on these students. Critical thinking is, in part, a dynamic process whereby seemingly disparate knowledge is assembled into a cogent and insightful understanding. A 23 year old female student “answered questions vaguely and missed critical information with those answers.” For example, she was “unable to provide nursing care guidelines for a patient with epidural infusion.” When asked to respond verbally to a hypothetical scenario with his patient, a male student could not respond with evidence of critical thinking. In fact, this student’s response was disturbing. He could have precipitated a catastrophe had he followed through with his nursing intervention plan.

Near the end of your assessment time, after you had studied the care plan and chart thoroughly, I asked you, “What would you do if you walked into your patient’s room and she was not breathing?” You replied you would yell for help and start CPR. It was clearly marked in the chart in red and on your notes, “No 99.” When I asked about allergies, you said she had none. The patient was allergic to penicillin (P-37, A-23, M, I).

Inadequate Data Collection/Assessment. Many students demonstrated shortcomings with data collection and assessment. Three major areas emerged: data collection from patients’ charts and the Kardex; assessment and data collection directly from patients; and research/preparation on patient’s condition or procedure. For example, a 25 year old female was not thorough in reviewing a patient’s chart and Kardex. She relayed to her CI the wrong IV solution to run as the primary IV with a piggy-back setup. This same student was not aware that the IV tubing was to be changed on a specific date as was

documented on the Kardex. A 26 year old female student did not indicate a respiratory system assessment in her nursing care plan when she was caring for two patients with respiratory conditions.

In week one you cared for two patients with respiratory diagnosis. In neither case did you indicate a respiratory system assessment in your nursing care plan. I needed to reinforce with you that this was the reason the patients were in the hospital (P-19, A-26, F).

One CI noted that her/his student had a problem understanding the “bigger picture” and could not explain “assessment parameters and how to interpret those findings.” The CI determined that the student ultimately had difficulty in assessing her patient's plan of care (P-31, A-24, F ,I).

Students (n=3) failed to collect pertinent data with respect to their patient assignments. Their assessments were not complete. Consequently, these students faltered with respect to nursing care priorities and their care plans.

PAS [patient assessment schedule] missing vital information i.e., description of past surgeries/conditions, analyses of lab values and vital signs, head to toe assessment is incomplete and inaccurate, and nursing priorities did not appear to flow from the information collected. Physical assessment, as one would expect, (e.g. nausea was a priority) was not reflected in the head to toe assessment (P-25, A-27, F, I).

Portfolio handed in incomplete without adequate amount of data to safely care for patient; no research articles on patient's surgery. Also missing many articles of information your syllabus clearly points out (P-37, A-23, M, I).

An international student (24 year old female) also demonstrated difficulty with assessment. The CI reported that her “assessment summaries reflected gaps in her research, interpretation of her assessments are weak and sometimes absent reflecting a general lack of understanding of her patients and their plan of

care." The topic of inadequate assessment surfaced frequently among the Year Three clinical learning contracts. Students also had difficulty applying theoretical concepts and skills to patient assessments. When students conducted inadequate assessments (often based on knowledge deficits) their resultant nursing priorities were ill-informed. Consequently, the potential for placing patients in harms way increased. For example, a male international student was offered information about a patient's need for insulin at morning report. However, when the patient presented with low fasting blood sugar, the student could not assess and prioritize his nursing care. The following textual excerpt illustrates how the various elements associated with knowledge deficit—including inadequate data collection/assessment—collectively interacted to undermine nursing care and the safety of patients.

When asked you cannot provide the necessary answers to conclude you have a complete understanding of the care needed for your assigned patients. You struggle to explain the scientific theory re: your patient's medical problems, as a result, you have not demonstrated a firm understanding of what you are assessing and why. You struggle to demonstrate a basic understanding of anatomy and physiology. For example, you could not define what an ischemic stroke was; you had difficulty explaining how a diagnosis of endocarditis would impact your patient needing a valve replacement. You could not define what a transitory ischemic attack (TIA) stood for, nor properly identify where the adrenal glands are situated (P-35, A-34, F).

Ineffective Communication. Ineffective communication was manifested in two categories; charting issues, and oral/verbal communication issues. The challenge associated with charting revealed omission of necessary information, particularly with respect to patient assessments.

Charting Issues. Charting issues entailed the omission of data and the non use of appropriate language. Students were also remiss in providing accurate rationale for their nursing interventions. And finally, students charted without vetting their progress notes with their respective CI. A 28 year old female student had great difficulty with her charting. On several occasions the student failed to document correctly by omitting crucial data.

The CI reviewed charting at 14:30 and discovered the following omissions; vital signs: she charted, "pulse strong" however did not indicate which pulses were strong. Good charting of the dressing change, however, no documentation of pain or swelling at the wound site. (P-41, A-28, F).

Students experienced difficulty describing and documenting what their observed. Their lack of critical thinking (including knowledge deficit) became evident through their charting efforts. They also lacked the necessary clinical vocabulary.

Difficulty describing wound drainage from an incision. The wound was draining serious fluid from the mid-incision. There was old blood crusting the distal end of the incision. She is unable to document information and pertinent data clearly, and concisely (P-26, A-31, F).

Follow up on SOAP [subjective observations assessment plan] documentation revealed morphine administered for pain because of flatus. This was discussed with students as morphine is generally reserved for severe pain and the student stated the pain was equal to bladder spasms. Importance of documentation was reinforced again (P-25, A-27, F, I).

Another student charted in the progress note without reviewing her assessment with her CI. This excerpt is also an example of a lack of integrity as the student was clearly instructed not to chart without first consulting her CI.

After being instructed not to chart in the progress note until I had reviewed her assessment with her, she went ahead without review (P-22, A-48, F, I).

Poor Oral/Verbal Communication. Not initiating or sustaining adequate dialogue with the clinical care team was evident in the clinical learning contracts. Students could not identify the rationale behind some of their clinical assessments, care plans, and nursing care. Miscommunication frequently occurred between the student and buddy (registered) nurse. Sub-standard nursing care occurred when clarity of communication was not attained. A clear example occurred when a 24 year old female student did not effectively verbalize her patient's status the buddy nurse and CI, and she confused instructions given to her by the buddy nurse. Students were also expected to use the language of clinical assessment, i.e., terms arising from anatomy, physiology, pathophysiology, etc.

When verbally questioned by her buddy nurse as to the status of her patient's abdomen, she answered, "Its OK." At this point the expectation was that she would describe what she assessed, i.e., flat, soft, non-tender with active bowel sounds to all 4 quadrants. She was also asked about her patient's coccyx ulcer last week, which she felt was reddened but didn't look all that bad to her. The patient had 2 open sores, one on each buttock as well as a cracked area in the center with bruising to the right buttock. When asked what she planned to do for this, she told me her buddy nurse had told her "Just leave it and he would take care of it" (P-36, A-24, F).

The buddy nurse in this example challenged the student's account of what transpired. The registered nurse said he would attend to the patient's ulcers if the student did not have enough time to do so. The student was then informed that "the wound and skin nurse needed to be consulted and that the dressing outlined in the Kardex should have been applied." This situation illustrated how the lack of communication between students and other members of the clinical team contributed to nursing care and patient safety concerns.

Inability to Organize and Prioritize Nursing Care. Year Three nursing students were challenged to prioritize their nursing care. Three different, but interactive and synergistic, factors emerged from the case studies which accounted for this theme (See Figure 1.08). Students who were unable to organize or orchestrate their nursing care were concomitantly unable to prioritize their care; they were unable to discern what constituted a nursing priority. Demonstrating disorganized care was exacerbated when the student's patient load was increased over time. As a consequence of disorganized care, students struggled with time management issues, i.e., they required extensive time to complete basic nursing care. That Year Three students demonstrated progress over time regarding the organization of their care and the establishment of nursing priorities was a clear expectation held by the CIs.

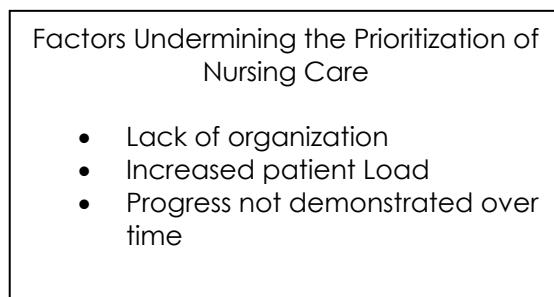


Figure 1.08

Lack of Organization. Students who were disorganized in their nursing care encountered difficulties in the practice setting. They were unable to put together the individual or discrete care pieces in a manner that resulted in a holistic caring effort. Disorganized nursing care contributed to difficulty in

establishing nursing care priorities. It also resulted in students being late with their patient care assignments; they did not complete their nursing care in a timely manner. Such lack of organization contributed to patient safety concerns—especially in the area of medication administration. Some students did not demonstrate improvement in their organizational abilities over time. This was of great concern to the CIs.

Difficulty getting all of your care delivered within the clinical practice time. Consistently you leave/finish your charting after you report off to your buddy nurse (P-13, A-50, F).

Despite making up daily care plan cards, and discussing these with the CI, she continues to have problems organizing herself with a two patient assignment. She has done such things as only drawing up some of her medications, but not all, and then realizes that she doesn't have them all when she gets to the bedside. Last week, she did not do her 10:00 am dressing changes to her patient's legs and passed this off to her buddy nurse at 12:00 stating that she didn't have time. Also, last week, her 11:00 am ACCU-checks were not done until 12:00 with a reminder from her buddy nurse (P-36, A-24, F).

A 33 year old female international student had difficulty with her medication preparation and needed extra time to care for her patients. She also required prompting on formulating a nursing diagnosis appropriate for her patient and lacked organization to both review and prepare her clinical assignment.

Difficulty mastering the Pyxis machine. Medication preparation needs extra time and to become organized to care for patient. Required prompting on formulating a nursing diagnosis appropriate for patient and review on preparation for clinical assignment (P-14, A-33, F, I).

Two other female students (22 and 46 years of age respectively) also struggled with inadequate organizational skills. These were manifested in their inability to complete nursing care in a timely manner.

Unable to complete am care within a reasonable amount of time; still trying to catch up by 1300. This is occurring almost every clinical day (P-27, A-46, F).

The following example of a 22 year old female student illustrates how patient safety can be compromised when several inadequacies intersect or interact, i.e., knowledge deficit (critical thinking), disorganized nursing care, and the inability to establish nursing care priorities. The student was unable to discern that a “stat” heparin bolus took priority over a dressing change.

Student had a patient on heparin infusion which was ordered to have a heparin bolus “NOW” as well as another patient to have a dressing change done. In the Med Kardex, it said, “Give analgesics at least 10 minutes before dressing change. Student wanted to go ahead with the dressing change because it had been approximately ½ hr since she gave the analgesic. CI explained that was OK, but the NOW order took priority. Student appeared to have difficulty setting her priorities for her patient assignment (P-47, A-22, F).

Increased Patient Load. Some students were challenged when it came to an increase in their patient load. One 50 year old female student was required to extend her lab and clinical time by six weeks because of her inability to manage “low level of acuity” care for two patients. A 33 year old female international student was apprised by her CI that to increase her patient load the student would “have to improve on the time management factor and focus on pertinent nursing issues such as disease process, risk factors, and basic nursing care.”

Progress Not Demonstrated Over Time. Students were expected to demonstrate progress over time with respect to setting nursing priorities. A lack of growth in this regard is illustrated in the following two textual excerpts.

Caring for one simple surgical patient she [the student] was unable to identify nursing priorities. Patient was complaining of nausea, had emesis and back pain. Student was unable to identify which one was the priority. Student is unable to demonstrate growth in the ability to effectively plan her patient care. She is unable to organize care and assigned work load with maximum [guidance] from the CI. Therefore unable to evaluate the effects of nursing care provided to patient and determine if expected outcome had been achieved (P-26, A-31, F).

Without a concrete understanding of the pathophysiology re: your patients, you have difficulty identifying key nursing priorities. This has been brought to your attention several times. It is vital that you are able to set nursing priorities for your patients to effectively and safely care for your patients. This has not been consistently evident. At this point in the course, you should be able to do this (P-35, A-34, F).

These two examples help to illuminate the complexity and interrelatedness of nursing care. When students demonstrated limitations in a particular area such as assessment, there appeared to be a greater likelihood of them having difficulty in other areas such as planning and prioritizing nursing care.

Limited Skill Development. Skill development within nursing care concerns was evident in two areas. Students did not demonstrate proficiency in mastering second year skills. They were also remiss in not reviewing policy and procedure manuals regarding skill application. With respect to mastering second year skills, one student did not show progress over time.

Required a lot of direction re: what type of care your patient required for morning care. Required step-by-step instructions on how to wash patients, change patient's gowns, and turn and position patient (P-16, A-28, M,I).

This student displayed a constellation of issues throughout his clinical learning contract--including an inability to "carry through" with respect to skill development.

I [CI] noticed you were having difficulty putting your patient's oxygen nasal prongs on correctly. You had put the oxygen tubing on around his head rather than putting it on around his ears which is a basic second year skill (P-16, A-28, M, I).

This particular student was eventually responsible for a host of errors, near misses, and potential adverse events.

Not checking or reviewing policy and procedure manuals was a concern among many of the Year Three students. This concern is illustrated in the following textual excerpts.

Student to give enema to patient but stated she did not know how. She did not know which side to lay her patient on (stated right side). Student did not refer to the policy and procedure manual, or directions on enema itself (P-20, A-30, F).

Did not review policy for blood draw off central line, when making mistakes states the last one he had was different, it was hooked up to an IV (P-39, A-21, M).

Clinical Transgressions: Year Three

Clinical transgressions refer to potential or actual acts of commission or omission that precipitated patient safety concerns. Given the nature of the data arising from the clinical learning contracts, the focus was on human and not systems, error, i.e., students were held solely accountable for their transgressions. This focus is reflected in the analysis of the data; however, where appropriate systems level implications are noted in this section, throughout the Report, and in the *Executive Summary*.

Figure 1.09: Clinical Transgressions: Year Three report breakdown

- I. Clinical Transgression Classification Scheme
 - Definitions of Errors, Near Misses, Potential Adverse Events, and Adverse Events
 - Total distribution of transgression classification
 - Observations drawn from transgression classification distribution

- II. Transgressions by Gender, Student Status, and Age
 - Men and International Men Data
 - Age Data
 - International Transgressions by Age
 - Total Transgressions by Age
 - Male/Female Transgressions by Age

- III. Thematic Analysis: Year Three Transgressions
 - A. Medication
 - i. By transgression classification
 - ii. By gender/ student status
 - iii. By concern: right time, right dose, knowledge deficit, right medication, right patient, right route
 - B. Inadequate and/or Inappropriate Skill Application
 - i. By transgression classification
 - ii. By gender/student status
 - iii. By concern: asepsis, intravenous, other skills (e.g. patient transfer, traction, NG tube, oxygen tubing, ventilation)
 - C. Other Transgressions
 - i. By transgression classification
 - ii. By gender/student status
 - iii. By concern: data collection, prioritizing patient care, follow-through care

I. Clinical Transgression Classification Scheme: Year Three

Total distribution of Transgressions

The following pie Chart illustrates the relative percentages of errors, near misses, potential adverse events, and adverse events for the total Year Three transgressions. The number and kind of total transgressions precipitated by Year Three students are presented in Chart 1.17.

Chart 1.17: Percentages of Year Three student transgressions by Classification

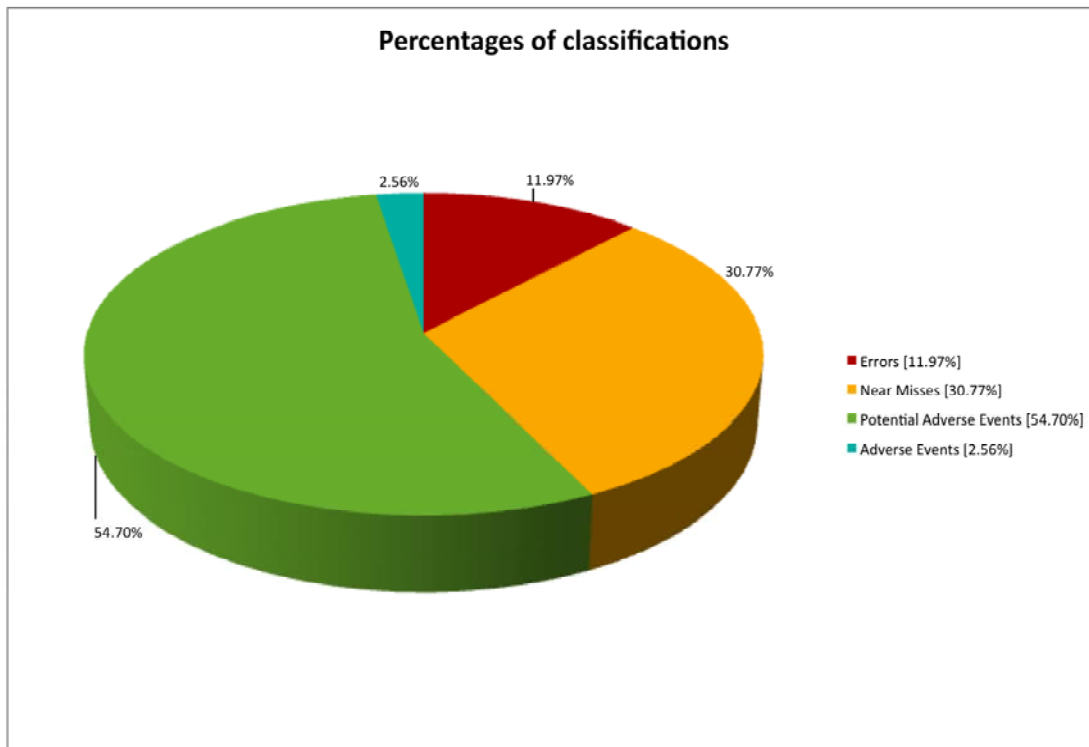
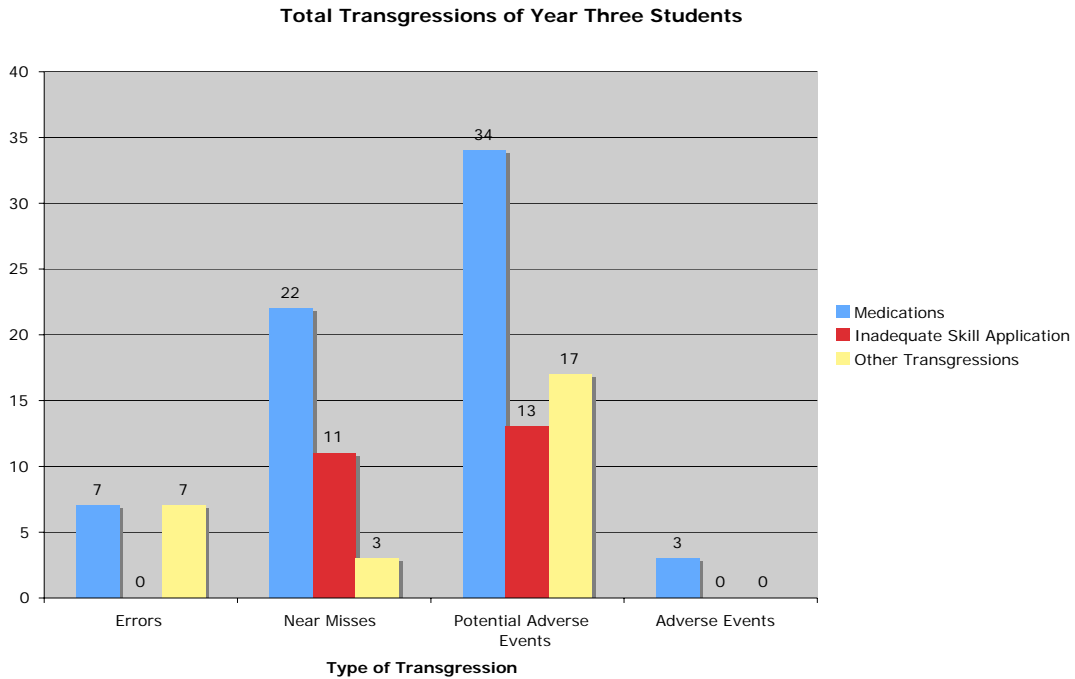


Chart 1.18: Classification of Year Three student transgressions by Theme



Overall, Year Three students precipitated one hundred seventeen (n=117) transgressions as culled from the clinical learning contracts.

- *Errors comprised 11.97% (n=14) of the events;*
- *Near Misses accounted for 30.77% (n=36) of the total transgressions; and,*
- *Potential Adverse Events and Adverse Events constituted more than one half of the total transgressions (57.26%; n=67). Of concern is that PAEs/AEs greatly outnumbered NMs. This means that patients were placed at risk for harm in the majority of the transgressions precipitated by Year Three students. Less than 1/3 of the total transgressions were caught or intercepted by clinical instructors and/or buddy "registered nurses."*
- *Adverse Events made up 2.56% (n=3) of these transgressions.*

Observations drawn from Transgression Classification Data

- PAEs made up 54.7% of all Year Three transgressions.
- PAEs occurred most often in the area of medication concerns (53.12%; n=34).

Table 1.12: Year Three Potential Adverse Events presented by theme

Transgression Theme	Number of PAEs	Percentage (%)
Medications	34	53.12%
Inadequate skill application	13	20.31%
Other transgressions	17	26.56%
Total Potential Adverse Events	64 (of total n=117 transgressions)	100%

In terms of overall incidents, PAEs dominated the transgression landscape by constituting over one half of total transgressions. PAEs occurred most often with respect to medications (53.12% of total PAEs, n=34). Inadequate skill application (20.05% of total PAEs, n=13), and other activities (26.56% of total PAEs, n=17) also had a high number of PAEs.

- *Near Misses occurred most often (18.8%, n=22, of all transgression events) in the area of medication administration.*

NMs transpired most often in the area of medication administration (18.8% of total transgressions, n=22). Despite these interceptions, 37 PAE/AE events (31.62% of total transgressions) were recorded in relation to medications.

With respect to Other (e.g. asepsis, patient transfers, etc.), clinical instructors (or buddy registered nurses) did not intercept the majority of PAEs, i.e., 3 good catches (NM) versus 17 PAE occurrences.

II. Transgressions by Gender, Student Status, and Age

There were 36 students who entered into the Year Three clinical learning contracts. Of this number, only 26 precipitated transgressions. Thus, and in relation to transgression analysis, the denominator was reduced by n=10. This resulted in a total of n=26 students. Males were responsible for 36.75%, (n=43) of these transgressions. This finding may be of concern given that men made up only 19.23% (n=5) of the total number of students who precipitated transgressions. Females were responsible for 63.25%, (n=74) of the total number of transgressions. Demographic profiles (gender, student status) of the Year Three students are presented in Table 1.13. The age profiles of male and female nursing students are presented in Charts 1.19 and 1.20.

Table 1.13: Demographic Profile (Gender/International Student Status) and Type of Overall Transgression.

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=5)	6	10	27	0	43	36.75%*
Women (n=21)	8	26	37	3	74	63.25%
Overall (n=26)	14	36	64	3	117	100%
Men (international) (n=3)	1	7*	8*	0	16*	13.67%
Women (international) (n=6)	4	13	14	0	31	26.49%
International Overall (total) (n=9)	5	20	22	0	47	40.17%

*Areas of concern given the total number of male Year Three students who precipitated transgressions (n=5, 19.23 %). Also, international male nursing students may be at higher risk for transgressions.

Observations Regarding Men and International Men Data

- *In light of the findings, male nursing students and international male nursing students were at higher risk for clinical transgressions in this sample of clinical learning contracts. Male nursing students (19.23% of the sample) precipitated 36.75% of all Year Three transgressions; International male students (11.54% of the sample) contributed to: 70% of all the male-precipitated Near Misses; 29.63% of all male-precipitated Potential Adverse Events; and 37.21% of all the male-precipitated transgressions.*

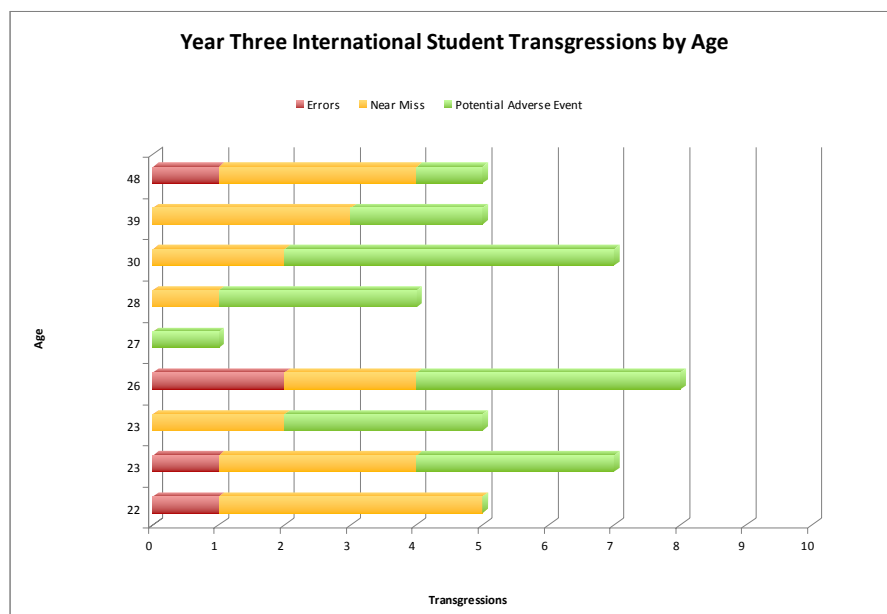
International students were accountable for 40.17%, (n=47) of the total transgressions. Male international students precipitated 13.67%, (n=16) of these transgressions, while female international students precipitated 26.50% (n=31). Male international students contributed to 35.00% (7/20) of the NMs precipitated by all international students, and 36.36% (8/22) of all the PAEs within this cohort of students. Furthermore, male international nursing students were responsible for 37.20% (16/43) of all the transgressions precipitated by Year Three men. Given their absolute small numbers (n=3), international males also appeared to contribute to a disproportionate number of NMs and PAEs.

It may be that Canadian and international men were socialized to be more independent and autonomous—and such qualities were carried forward in their roles as nursing students, i.e., they may not have sought assistance as appropriate. It may also be that some male nursing students had difficulty with female authority figures and thus, they were reluctant to consult their clinical instructors for help and assistance as needed. Finally, clinical instructors (almost exclusively female) may make assumptions about their male students, i.e., that they may require less supervision than the female students. Alternatively, male nursing students may be more closely supervised compared to their female

colleagues. The PAE data, however, lends less support to this interpretation. Male nursing students precipitated a disproportionate number of PAEs and they were discovered “after the fact” (i.e., the transgression had already occurred). Additional research is required to better understand these areas of concern.

Observations Regarding Year Three Transgressions by International Student Status

Chart 1.19: Age Profile of International Students who Precipitated Transgressions



In this Chart (1.19), Errors, Near Misses, and Potential Adverse Events are cross-indexed with the age of each international student. In this sample, the age distribution appeared to divide naturally into two cohorts; younger (≤ 26) and older (≥ 27) nursing students. Younger international students (≤ 26) appeared to precipitate more Errors and NMs than the older students. Older students (≥ 27) precipitated more PAEs. Suffice to note that in this transgression sample, only one international student (aged 22) did not contribute to a PAE event. However,

this same student had one Error and four NMs. In examining these profiles, one international student failed his clinical learning contract. Of note, this student (aged 39) precipitated three NMs and two PAEs. Other students, with a greater number of transgressions, had the following contract outcomes:

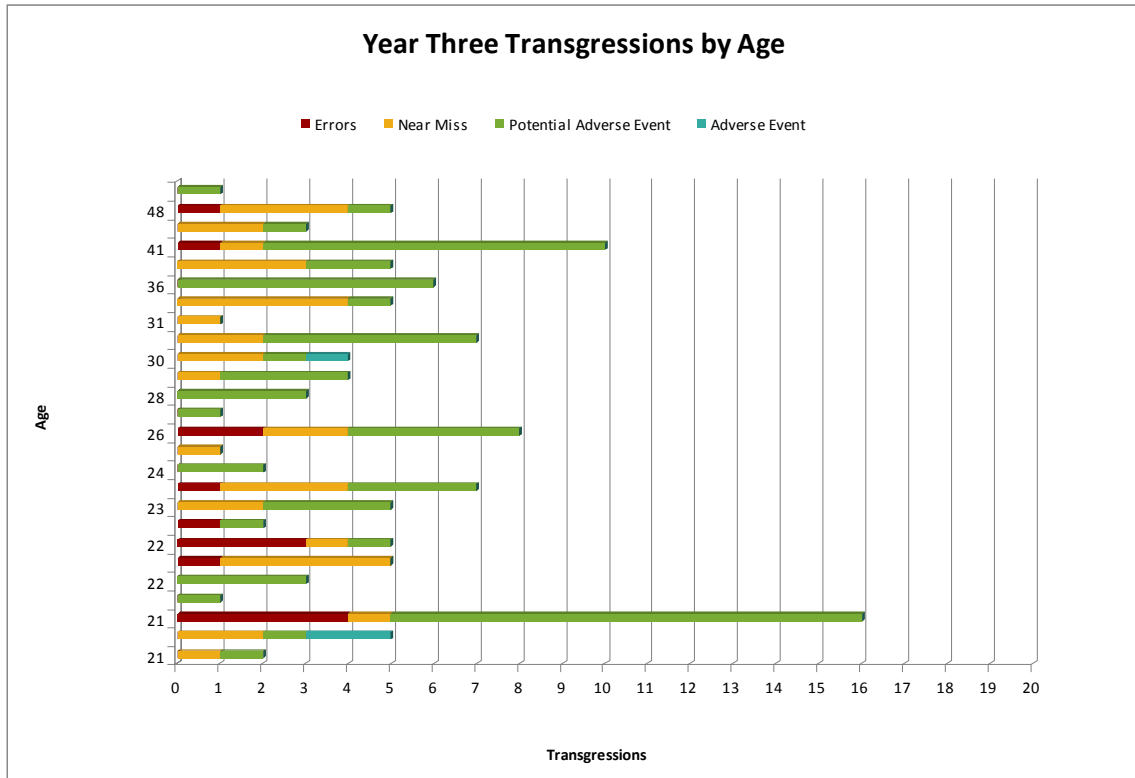
- Age 30 = VW (voluntary withdrawal from the course prior to grade assignment)
- Age 26 = C+
- Age 23 = B

Thus, the sheer number of transgressions did not correspond to a learning contract failure. Factored into failure are other dimensions of student performance, i.e., quality of nursing care, professionalism, socialization, quality of supervision offered by the clinical instructor, and progress made in relation to rehabilitation efforts.

Observations Regarding Total Year Three Student Transgressions by Age

- *Older nursing students (> 26) appeared to precipitate more NMs and PAEs compared to younger students.*
- *Younger nursing students (≤ 26) appeared to precipitate more Errors compared to older nursing students.*

Chart 1.20: Age Profiles of all Students who Precipitated Transgressions



In this profile of age by transgressions, older students (≥ 27) appeared to precipitate more NMs; younger students (≤ 26) had more Errors. Even when including an outlier, the student aged 21 with $n=11$ PAEs, the trend suggests that older students were also responsible for more PAEs.

In examining these age and transgression profiles, the following Year Three students failed their clinical learning contracts:

- Age 41 (male)
- Age 39 (See previous section on international students)

It is interesting to note that 12 other nursing students had an equal or a greater number of transgressions compared to the 39 year old student who failed. Of this number ($n=12$), one failed (age 41), two students voluntarily withdrew from

their clinical courses prior to their completion [a male aged 21 with 16 transgressions; and a female international student aged 30 with 6 transgressions], and the remaining students passed their clinical courses (n=9).

Observations Regarding Gender and Age Data

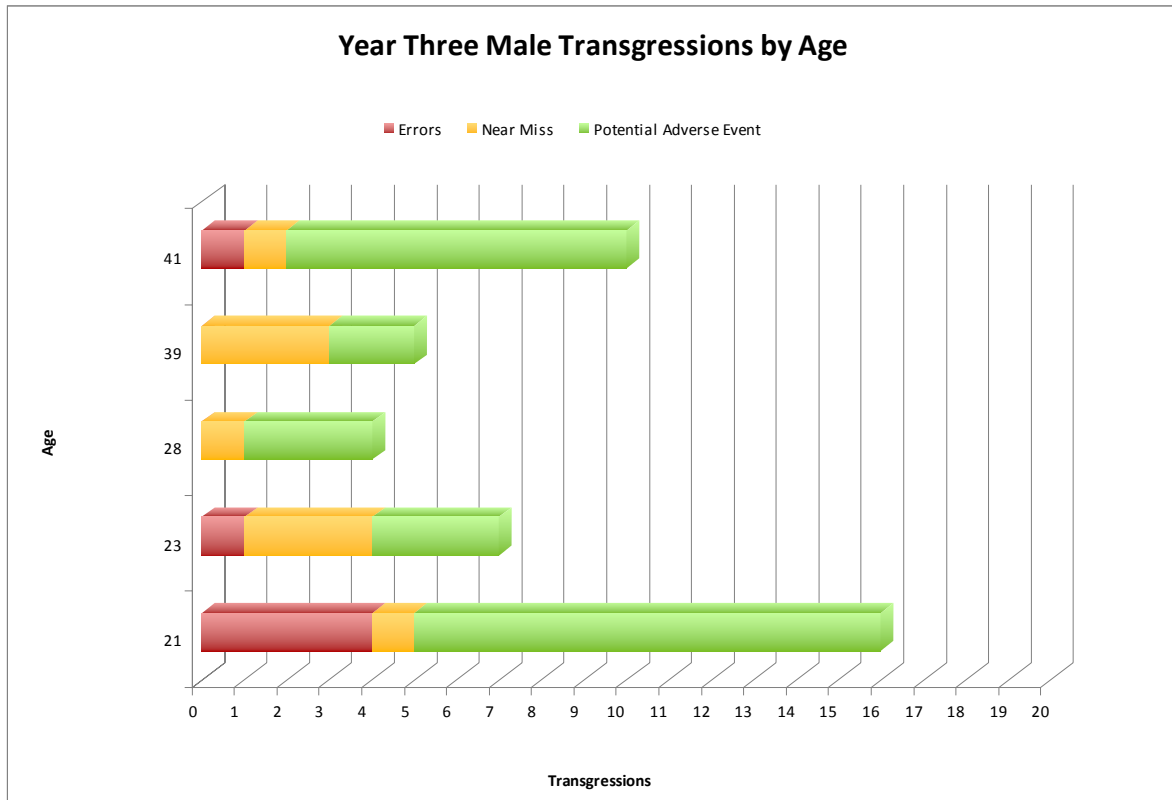
- *In this sample, older female nursing students precipitated more PAEs compared to their younger (≤ 26) colleagues.*
- *In this sample, younger female nursing students precipitated more errors compared to their older (≥ 27) colleagues.*

Chart 1.21: Transgressions By Female Gender and Age



Older female nursing students (≥ 27) demonstrated more PAEs than their younger counterparts. Younger nursing students were responsible for more Errors. There was no discernable trend regarding the Near Misses.

Chart 1.22: Transgressions: Year Three Male Students



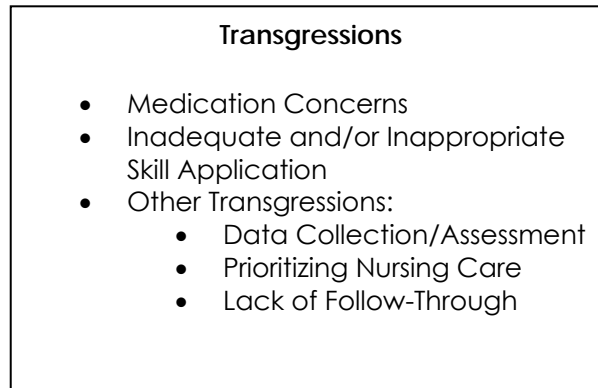
Given the small sample, it is not possible to discern any data trends. Suffice to note that all of the male students in the transgressions sample precipitated NMs and PAEs.

III. Thematic Analysis: Year Three Transgressions

Three major themes were generated from the transgression data set: *medication concerns; inadequate and/or inappropriate skill application, and; other*

transgressions including inadequate data collection/assessment, inability to prioritize nursing care, and lack of follow-through (as shown in Figure 1.10).

Figure (1.10)



A. Medication Transgressions

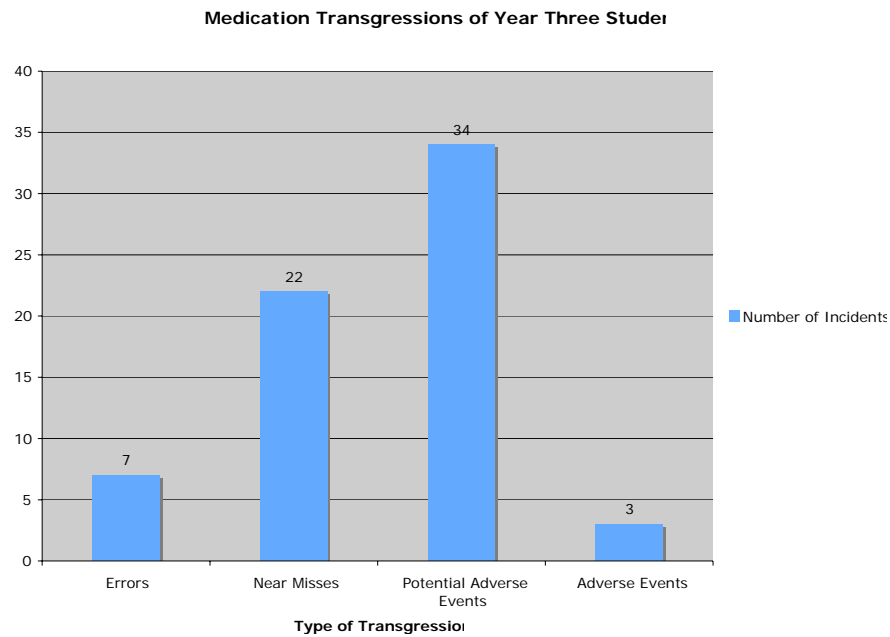
i. Medication Transgressions: Classification

Medication concerns accounted for 56.41% (n=66) of the total transgressions; the category with the greatest number of transgressions in Year Three. Of these sixty-six medication related transgressions, clinical instructors and/or buddy (registered) nurses intercepted 33.33% (n=22) of them. However, a greater number of Potential Adverse Events were missed, i.e., 51.52% (n=34).

- *Although one-third of all medication transgressions were intercepted ("good catches" which prevented harm to patients), 51.52% of the transgressions (PAEs) went "unchecked" and placed patients at risk for harm. This finding is likely the combined result of student, CI, and system-based factors.*

Three of the transgressions were classified as Adverse Events, i.e., patient harm was noted in the clinical learning contracts.

Chart 1.23: Classification of Medication Transgressions



ii. Medication Transgressions: Gender and Student Status

- *In this sample, males appeared to be disproportionately represented with respect to medication transgressions; i.e., 19.23% of the sample (n=5) precipitated 33.33% (n=22) of the transgressions.*
- *International female nursing students comprised 23.08% (n=6) of the transgression sample, but precipitated 25.76% (n=17) of all medication concerns.*

Male nursing students were responsible for one third (33.33%, n=22) and female students precipitated two-thirds (66.66%, n=44) of the total medication transgressions. Of note is that males made up only 19.23% (n=5) of the transgression sample and yet they were involved in one-third of all the medication transgressions. Although the majority of the transgressions sample consisted of females (80.77%, n=21), they precipitated relatively fewer medication transgressions.

International students contributed just under a third (31.82%, n=21) of total medication transgressions. Male international students were responsible for 6.06%, (n=4) and female international students for 25.76%, (n=17) of the total medication transgressions respectively. The gender and student status profiles for Errors, Near Misses, Potential Adverse Events and/or Adverse Events are presented in Table 1.14.

Table 1.14. Gender and Student Status: Medication Errors, Near Misses, Potential Adverse Events, and Adverse Events among Year Three Students

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=5)	2	5	15	0	22	33.33%*
Women (n=21)	5	17	19	3	44	66.66%
Overall (n=26)	7	22	34	3	66	100%
Men (international) (n=3)	0	3	1	0	4	6.06%
Women (international) (n=6)	4	8	5	0	17	25.76%
International Overall (total) (n=9)	4	11	6	0	21	31.82%

*Areas of concern given the total number of male Year Three students (19.23%, n=5) who precipitated transgressions; similarly, 23.08% (n=6) female International students were responsible for more than ¼ of all medication transgressions.

iii. Medication Transgressions: Areas of Concern

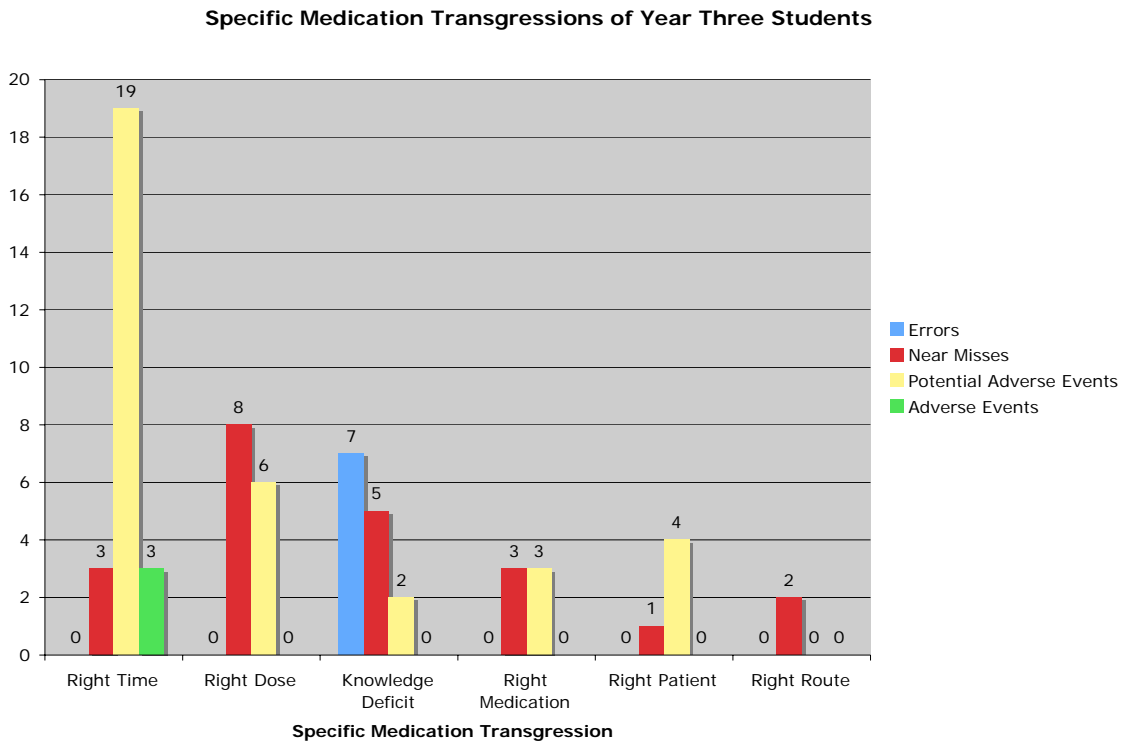
Supportive categories for the types of medication concerns are ranked ordered (based on number of events) and organized around the *Five Rights of Medication Administration* (plus one additional category: *Knowledge Deficit*)

and illustrate a range of challenges (Table 1.15). Following this Table is a Chart (1.24), which outlines the respective categories of E, NM, PAE, and AE.

Table 1.15: Medication Concerns

Medication Concerns	
•	Right Time: Incorrect time of administration and inappropriate holding of medication
•	Right Dose: Incorrect dose; under dose/overdose, and concentrations/calculations
•	Knowledge Deficit: Medication/treatment/narcotic disposal
•	Right Medication: Incorrect medication, incorrect preparation (mix) and not confirming medication
•	Right Patient: Not checking identity
•	Right Route: Incorrect route

Chart 1.24: Medication Transgressions by Area of Concern



Of note, the highest area of medication Errors occurred in the category Knowledge Deficit (n=7). The greatest number of Near Misses occurred with respect to Right Dose (n=8). Potential Adverse Events occurred most often with respect to Right Time (n=19), which was also the only category with Adverse Events (n=3) out of all the total transgressions for Year Three students. Right Route was the least "active" category, i.e., there were two Near Misses.

The large number of PAEs with respect to Right Time may indicate that students had difficulty:

- a) Organizing their nursing care;
- b) Prioritizing their nursing care; and/or,
- c) With the knowledge and skills of more complex medication administration (e.g. multiple/concurrent IV medication preparation).

The findings also suggest that the number of students who required supervision and direct observation, i.e., first time administration of medications, may have attenuated the "supervisory/support reach" of clinical instructors. A student with practice concerns would require additional and closer attention by the CI to the detriment and risk of the other students as well as patients. There were two areas where the number of PAEs was greater than the NMs (i.e., more transgressions occurred than were intercepted); Right Time and Right Patient.

Right Time. There was a total of twenty-five (n=25) incidents that were precipitated with respect to not administering medication at the correct time. These included; Near Misses (n=3), Potential Adverse Events (n=19) and Adverse Events (n=3). *The Five Rights of Medication Administration* indicates that medication must be given at the correct time (within half an hour of the

prescribed time). One example of a Near Miss was when a student had Ativan poured and ready at 0:930 when it was not due until 13:30. The clinical instructor intercepted the student and had the student safely dispose of the medication.

The untimely administration of medication compromised patient safety resulting in nineteen (n=19) Potential Adverse Events. Students demonstrated inadequacies in organizing their nursing care and in the preparation of medications—particularly with respect to IV medications. These shortcomings contributed to lateness in the administration of medications. In the first textual excerpt, the student did not prioritize her nursing care appropriately. She focused on the stable patient rather than on her other patient who was one-day post-operative. In the second example, the student demonstrated a pattern of late medication administration (i.e., one hour late with IV medications). It may be that this student had difficulty organizing his nursing care and/or executing medication preparation in a timely manner.

When preparing to administer her [the student's] medications, she administered her 0830 p.o. [by mouth] med on her stable patient (who was being discharged). When I asked her if there were any meds to administer to her post-op (post-operative day one mastectomy with skin flap), she stated she would do it after p.o. meds. The med for the post-op was IV Ancef: q8h and due at 0800 (P-24, A-26, F, I).

Approximately 30 minutes late in administering oral medications to his patient. CI discussed the importance of giving meds on time, and the following day noted that he was preparing meds earlier and he did administer them on time. On (certain date) was one hour late giving an IV med. CI discussed again. On (certain date) he was again late with an IV med, but gave it on time the next day. This pattern of late meds on one day and on time the next is a patient safety issue and shows inconsistency in administering medication (P-46, A-41, M).

The inappropriate withholding of a medication by a 30-year-old female student resulted in a Potential Adverse Event for the patient. This student confused the concepts of systolic and diastolic blood pressures and withheld medication based on systolic, instead of diastolic, data. This particular student also demonstrated a host of medication concerns documented throughout this report, i.e., knowledge deficit, lack of critical thinking, and lack of communication with her clinical instructor.

Student withheld medication from a very ill patient in the step-down unit, confused with systolic and diastolic blood pressure orders, buddy nurse corrected Error, incident report was completed (P-20, A-30, F).

Most seriously, three Adverse Events occurred within this category. One Adverse Event was precipitated when a student (P-20 as noted above) gave Lorazepam as an AM medication instead of in the evening and subsequently an occurrence report was filed. A second student was responsible for the other two Adverse Events, as follows:

She [student] failed to provide a patient with Osteomyelitis with an analgesic medication following [the patient's] verbal complaints of pain (P-45, A-21, F).

She [student] failed to administer an infant a scheduled NG (nasogastric) feed and when asked about it, stated that her buddy nurse had already done so when she went to initiate it. When discussed with the buddy nurse, the buddy nurse finally gave the feed 40 minutes late after the student had shown no initiative to do so (P-45, A-21, F).

Right Dose: Incorrect dose; under dose/overdose, concentrations/calculations.

There was a total of fourteen (n=14) events whereby students potentially or actually under medicated (under-dose) or over medicated (over-dose) patients.

These included; Near Misses (n=8), and Potential Adverse Events (n=6). A Near Miss was recorded when a student was caring for a patient with diabetes.

Her patient was a diabetic and on sliding scale insulin, she came to me with a syringe filled to the .5 cc mark. I then went back to the scale and asked what the patient's blood sugar was. She initially stated she could not remember and then stated it was either 18.3 or 17.3. She went back and forth between the numbers unable to remember. I left to get the ACCU check machine and when I came back she stated it was 18.3. I asked if she was sure and she stated, "Yes." I put a strip into the machine and the last ACCU check came up at 17.3, the level of BS (blood sugar) made a difference to the quantity of insulin to be administered. I had her discard the drawn up syringe and watched her both prepare and administer the med. She in this situation did not accurately report relevant information to the CI, she offered at one point to do another ACCU check on the patient, but when asked at the end if was sure re: the 18.3 had stated yes, which speaks to professional accountability (P-38, A-22, F, I).

Another example of a Near Miss was when a student used a 3 cc syringe and an 18-gauge needle to draw up 60 units instead of a 6 units of insulin for a patient with diabetes. The student used an inappropriate syringe to draw up the medication in terms of administering insulin and drew up ten times the amount of insulin creating the potential for an overdose situation.

Medication near miss: 3cc syringe to an 18-gauge needle with .6 ml or 60 units, instead of 6 units, instead of 6 units/insulin syringe (P-20, A-30, F).

Other Near Misses were generated because of the student's lack of proficiency in correctly calculating medication doses or concentrations of medication.

Difficulties arose in the following areas: misinterpreting medication labels, not knowing how to dilute certain medications, incorrectly infusing medication, not understanding medication compatibility, and being unable to calculate basic ratios. Students did not appear to grasp concepts related to concentration.

Consequently, they had great difficulty determining relative doses of

medications. The following textual excerpts illustrate these concerns as Near Misses.

Misinterpreted the vial label for Ranitidine IV, after repeatedly asking her [the student] to check the label and read it, finally pointed out it was 25 mg/ml and not 25 mg per vial (P-22, A-48, F, I).

She [the student] was to administer a patient's medication through a PEG tube. She was unsure of how to dilute meds, did not know which meds needed to be diluted, dissolved (Lose) or crushed, and could not tell me how much of a flush was required between meds (P-24, A-26, F, I).

Difficulty figuring out the Heparin rate on your patient. Heparin comes in a bag; 50 units/ml. The rate was to be 1,600 units/hr. Student was unaware that she could look up the compatibility of Heparin and Potassium in the parental IV drug manual. Inability to calculate a medication is a patient safety issue (P-26, A31, F).

An example of a Potential Adverse Event was related to a medication over dose as follows.

On (certain date) drew up and administered Morphine 10 mg IV. The order on the MARS [Medication Assessment Summary] sheet clearly read, "Morphine 2.5 to 5 mg IV" (P-46, A-41, M).

Another example of a Potential Adverse Event occurred when a student did not confirm the correct dose of medication (insulin) for her patient.

Not confirming insulin dose (week five of clinical). You [student] gave 50 units of NPH insulin without getting it checked by another nurse. Potential serious consequences if the dose was wrong, or if wrong type of insulin given (P-21, A-30, F, I).

Knowledge Deficit. There was a total of fourteen (n=14) transgressions related to knowledge deficits. These included; Errors (n=7), Near Misses (n=5), and Potential Adverse Events (n=2). Errors occurred when students were ill prepared for clinical as follows; not reviewing policy and procedures, a lack of understanding

with respect to medications and incomplete medication (drug) cards, and not knowing the difference between generic and trade names for medications.

Two students were each responsible for an Error with respect to improperly disposing (wastage) of narcotics. In the following example, the student left a medication on the "med counter" to administer it later after she discovered that her patient had left the clinical unit temporarily.

I was tidying the counter in the med room after all students had completed their meds, and noticed a plastic cup with what appeared to be a crushed Tylenol #3. I asked the student regarding same, and she stated that she had not given the med because the patient had left the unit, and once they returned the buddy nurse gave the Tylenol. The patient in the meantime had been discharged and was no longer in the computer. I wasted the med with another RN and notified the pharmacy of the Error. I discussed with the student the importance of prompt wastage of narcotics (P-38, A-22, F, I).

A Near Miss occurred when a clinical instructor questioned a student in regards to a medication that he was about to administer. The student was unable to inform the CI what the medication was used for even though the student had administered it to his patient the day before. This same student was responsible for a Potential Adverse Event when he gave analgesia to a patient without knowing the severity, position, or type of pain the patient was experiencing. The student was also inconsistent in using the *Five Rights of Medication Administration*. The lack of knowledge with respect to medication in these examples highlight the crucial importance of clinical instructor and staff-nurse interventions which are well documented within this Report.

Right Medication. There was a total of six (n=6) events whereby students attempted to or administered the wrong medication. These included; Near Misses (n=3), and Potential Adverse Events (n=3). One instance of a Near Miss involved a 39-year-old male international student who drew up the wrong medication.

In week 8 of clinical you were preparing to give patient IV Morphine at 0820 under supervision of the unit nurse. You had taken IV Demerol out of the narcotic drawer instead of Morphine. The unit nurse corrected you and then you continued your preparation of the medication. Incorrect med from the narcotic drawer= Unsafe Nursing Care (P-15, A-39, M, I).

Students were also challenged with respect to medication preparation. The safe mixing of medications was a basic skill the student (in the example below) failed to demonstrate. Note that this occurred in the eighth week of his clinical rotation. This incident is an example of a Near Miss and a lack of growth with respect to his practice.

In week 8 your patient was complaining of pain again at 0900 hrs. At this time, there was a new analgesic order left by the physician. It was for Morphine 5-10 mg IV q4-6h prn [as needed]. This situation was discussed with the unit nurse and your direction from the unit nurse was to give her another 5 mg of Morphine at this time since you had given her only 5 mg of Morphine at 0840, therefore by giving her another 5 mg at 0900 you were still within the ordered dosage range of 10 mgs. This medication was prepared under my supervision. In preparing this medication, you wanted to draw up 10 cc of normal saline first into the syringe and then add the .5cc's to the diluent. Mixing the medication in this manner does not follow correct medication preparation. The medication is always drawn up first in order to ensure a correct and accurate dosage of the medication. The diluent is added last. This indicates to me that you were having difficulty performing this skill correctly and safely (P-15.A-39, M, I).

A Potential Adverse Event involving medication preparation, and in particular a NG tube, is presented below.

Administered a medication via NG tube without properly dissolving first and much of it lost against the side of the syringe (P-39, A-21, M).

Another PAE occurred when a student administered a discontinued medication to a patient. This student did not review medications prior to administration and, on another occasion, drew up an incorrect dose of a medication confirming the observation that students who exhibit ongoing medication concerns do so in a variety of areas.

Right Patient. There was a total of five (n=5) events whereby students did not check the patient's identity—a foundational skill learned when first learning how to administer medications. There was one Near Misses (n=1), and four Potential Adverse Events (n=4) in this category. The Near Miss example occurred when a student was to administer IV antibiotics and Heparin to her patient. When the clinical instructor approached the bedside for observation she noticed the patient was missing his armband.

I [CI] walked to both sides of the bed looking for an armband on the patient and could not find one. She [student] was proceeding to administer the IV medication and had inserted the syringe into the buretrol when I said, "Mr. X you seem to have lost your armband." She [student] then stopped. The patient then stated, "But I am Mr. X" and I verified the patient's birth date with the patient. Student then proceeded to give the medication. This was once again an unsafe administration of medication; the patient was put at risk because she [student] did not check patient identification (P-38, A-22, F, I).

One student did not check patient identification twice and she was responsible for two Potential Adverse Events.

Inconsistent with the 5 Rights re: medication administration. Did not do required checks, namely the patient's armband before administering medications on two occasions (P-22, A-48, F, I).

Right Route. There was a total of two (n=2) events (Near Misses) whereby students did not correctly identify the proper route for medication administration. One student precipitated both the Near Misses in this category. In the following excerpt, the student was poised to administer Heparin close to a surgical site. In addition, when she was instructed to administer the injection in the patient's arm, the student was prepared to give it as an intramuscular (IM) injection and not a subcutaneous injection.

You almost gave heparin in your patient's abdomen when it had a large incision and 2 drainage tubes. When I suggested giving it in the arms you were going to give it intramuscularly. This was unsafe (P-48, A33, F).

B. Inadequate and/or Inappropriate Skill Application

Another complex theme emerging from the Year Three data set was *Inadequate and/or Inappropriate Skill Application*. This theme accounts for three different kinds of events in which students demonstrated a lack of proficiency.

i. Inadequate Skill Transgressions: Classification

Students' inappropriate application of skills created patient safety concerns for patients. The three different types of incidents are listed and ranked ordered in Figure 1.11 and the number of Near Misses and Potential Adverse Events are presented in Chart 1.25.

Chart 1.25: Classification of Inadequate Skill Transgressions for Year Three Students

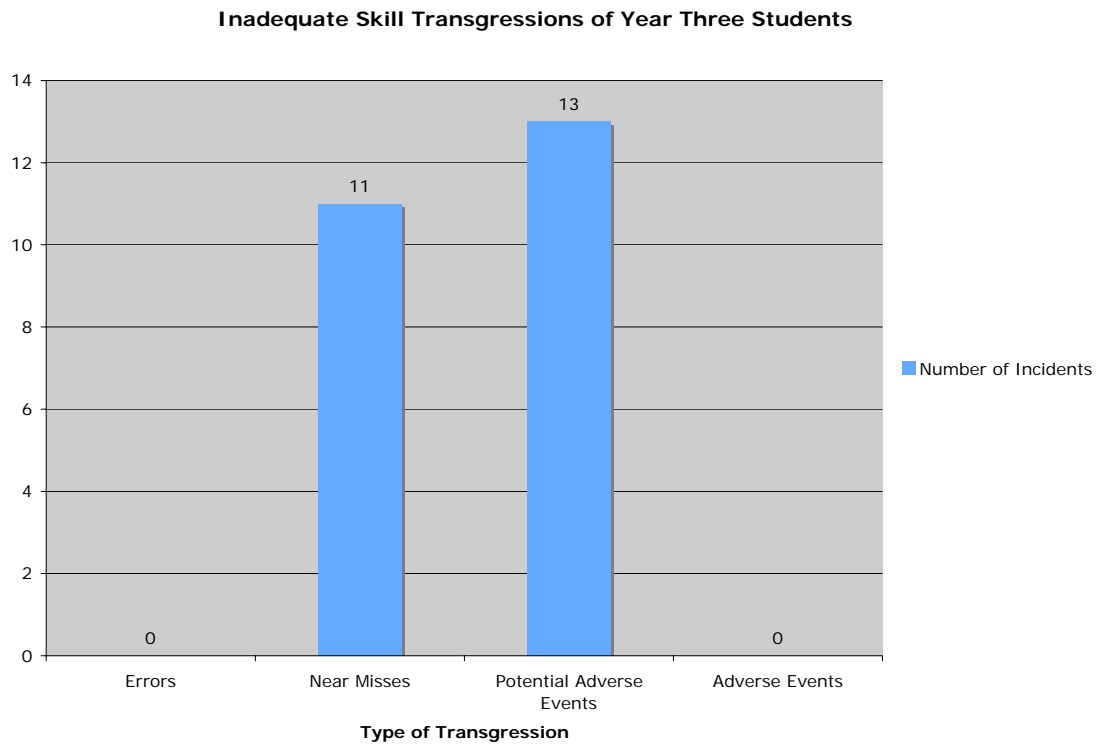
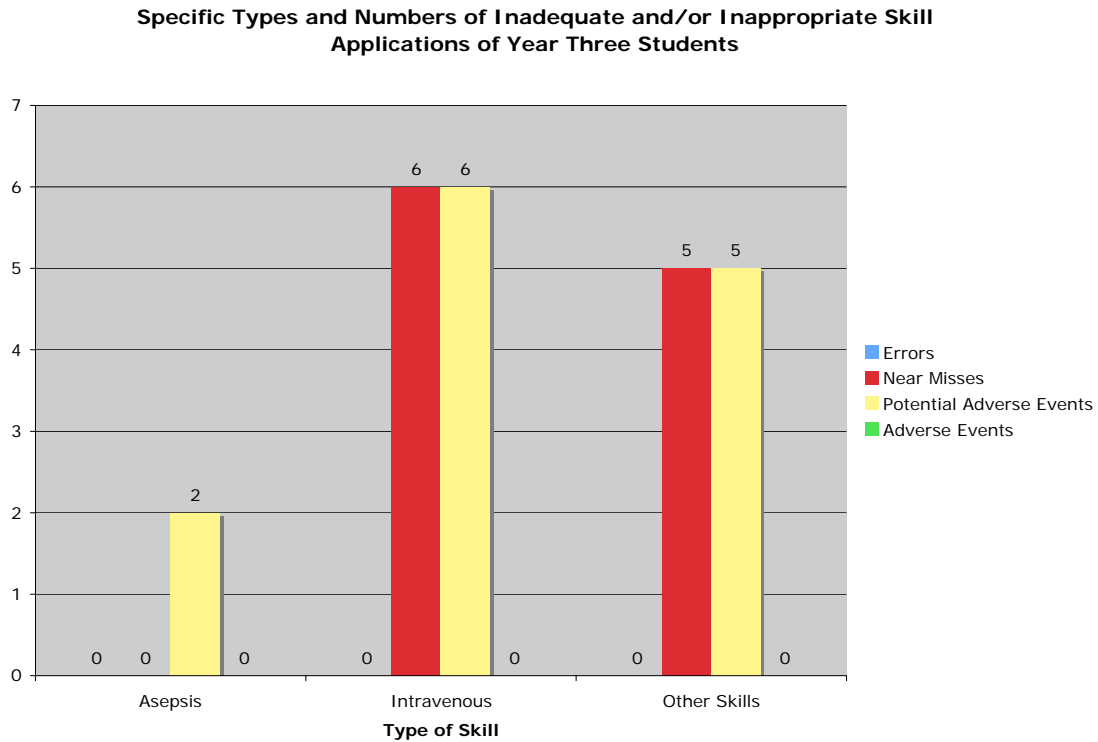


Figure 1.11

- Types of Inadequate and/or Inappropriate Skill Application**
- Intravenous
 - Asepsis (dressing change, wound care, piercing of JP drain)
 - Other types of inadequate skill application: patient transfer, traction, NG tube, Oxygen tubing, ventilation

Chart 1.26: Inadequate Skills Transgressions by Area of Concern



There were only Near Misses [45.83%; n=11] and Potential Adverse Events [54.17%; n=13] noted in this thematic area. NMs and PAEs contributed to a total of n=24 inadequate and/or inappropriate skill transgressions. Half of the transgressions (n=12) occurred in the area of intravenous skill application. Ten “Other Skills” transgressions entailed such things as unsafe patient transfer, oxygen tubing inappropriately placed around a patient’s neck, and attempting to carry out first time tracheostomy care on a ventilated patient without supervision. Two PAEs occurred in the area of asepsis, i.e., potential contamination of wound sites.

ii. Inadequate Skill Transgressions: Gender and Student Status

- *In this sample, international nursing students appeared to be at risk for precipitating inadequate or inappropriate skill application concerns. For example, international students were responsible for 62.5% of all the*

transgressions related to inadequate and/or inappropriate skill application.

- *International male nursing students contributed to 8/11 male-precipitated transgressions (72.73%) and thus, were responsible for the majority of these transgressions.*

Males were accountable for 45.83% (n=11) and females 54.17% (n=13) of the total incidents. International students were responsible for 62.5% (n=15) of these total incidents. International male nursing students were responsible for 33.33% (n=8) of the total number of skill transgressions; international females precipitated 29.17% (n=7). Demographic profiles (gender, student status) and number of transgressions are presented in Table 1.16. Once again attention can be drawn to the number of transgressions precipitated by male students given that only n=5 (19.23%) male students were responsible for 45.83% (n=11) of all the transgressions (see shaded cell in Table 1.16). Further scrutiny revealed that international males were responsible for 72.73% of all male-precipitated transgressions.

Table 1.16: Demographic and Number of Inadequate and/or Inappropriate Skill Application Errors, Near Misses, Potential Adverse Events, and Adverse Events.

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=5)	0	4	7	0	11	45.83%*
Women (n=21)	0	7	6	0	13	54.17%
Overall (n=26)	0	11	13	0	24	100%
Men (international) (n=3)	0	3	5*	0	8	33.33%
Women (international) (n=6)	0	4	3	0	7	29.17%
International Overall (total) (n=9)	0	7	8	0	15	62.5%*

*Areas of concern given the total number of male Year Three students (n=5, 19.23%) who precipitated transgressions; International students were responsible for 62.5% of all the transgressions in this category.

iii. Inadequate Skill Transgressions: Areas of Concern

Intravenous. There was a total of twelve (n=12) events in which students had difficulty managing intravenous equipment. These included; Near Misses (n=6) and Potential Adverse Events (n=6). The concern here was not the medication proper, but rather the students' skill in managing intravenous devices. Three of the Near Misses involved situations in which clinical instructors queried the student and discovered that she/he; "did not know there was a CIVA [pump] manual and did not ask how to prepare a medication for infusion prior to drawing up the medication"; "did not review the policy and procedure manual before changing central line caps to discontinue a continuous infusion"; or was "unsure how to program a Baxter pump with the appropriate rate over time based on volume." In each of these three cases, clinical instructors were instrumental in preventing Near Misses from escalating into PAEs.

Two of the PAEs occurred with intravenous infusion and one of the clinical instructors questioned whether her student “fully understood the potential seriousness of the incident.”

In week 5 of clinical you had a central line with N/S [normal saline] infusing, IV ran dry and bag of N/S was replaced by a staff nurse. Staff nurse had to prime the line. This incident had the potential for serious consequences to which the CI spoke at length. When questioning you about this incident you stated, “I knew the bag was almost empty and would get to it later on” (P-47, A-22, F).

IV bag on her patient had infused by 08:00 but was not changed until 09:15 which has implications re: hydration, electrolyte balance and may have resulted in the loss of IV site (P-25, A-27, F, I).

A third PAE was precipitated by a student not knowing how to care for a PCA (patient controlled analgesia) Pump according to hospital policy and therefore did not properly monitor the patient, i.e., the patient's use of the PCA pump was not recorded for several hours. Another PAE occurred when a student drew blood from a central line that was helplocked off without reviewing the policy and procedure.

He [student] attempted to draw blood [from the central line] a second time and did not have the proper equipment ready. He could not define TPN (total parental nutrition), only stated it “was a mixture of electrolytes an minerals” (P-39, 21,M).

Asepsis. Potential Adverse Events (n=2) were found in this category. They resulted from a lack of skill regarding asepsis. Two international students (one male) were responsible for the PAEs. The male international student's “technique during the dressing change was unacceptable and increased the patient's risk of developing infection.” The CI determined this to be “unsafe practice and

would not be tolerated.” One female international student lacked understanding of asepsis, as noted below.

Unaware of contaminating dressing site: Buddy nurse reported that during a dressing change you were very shaky and did not maintain sterile technique. You had not realized that your techniques were poor, you thought it went well (P-21, A30, F, I

Other Inadequate and/or Inappropriate Skill Applications. Near Misses (n=5) and Potential Adverse Events (n=5) were found in this category. This resulted in a total of ten (n=10) events; the related skills are listed in Table 1.17 below.

Table 1.17: Types of Other Inadequate and/or Inappropriate Skill Applications

Type of Skill
Urinary Catheterization
Promotion of Skin Integrity
Buck's Traction
Patient Transfer
NG (Naso-Gastric) Tube
Oxygen Tubing Application
Tracheostomy Care for a Ventilated Patient
Bed-Rail Protocol

Near Misses, in which the clinical instructor intervened, occurred in five events. A NM occurred when a student attempted to catheterize a patient after informing her clinical instructor that she knew the steps involved with this skill. The student could not articulate the requisite steps and, even after looking up this information (policy and procedure manual), the student could not repeat the steps back to the CI. The patient reported that he “felt nervous” because the CI had to direct the student throughout the catheterization process. Another Near Miss was precipitated by a student who was unsafe regarding skin integrity. He did not know which side to turn the patient, nor how often. He informed his CI “every

eight hours" when asked how often patients needed to be repositioned. The CI then reviewed preservation of skin integrity with the student—including how often patients should be repositioned.

A NM occurred when a student was unable to explain Buck's traction to his clinical instructor, how to care for a patient with it, or how to manage the traction itself. The CI intervened when the student was about to remove a Velcro fastener without removing the weight first. Another NM occurred when a student failed to ask for assistance when she encountered difficulties in flushing a NG tube.

She ran into difficulties in flushing the NG tube because she had chosen the incorrect equipment. When asked what she was doing, she stated, "Oh I just screwed up" and provided no other additional information than that. She needed to be asked by her CI what specifically went wrong to identify the problem (P-45, A-21, F).

PAEs involved five events in which the student's lack of proficiency in performing a clinical skill put patients directly in harm's way. One example of an event (PAE) involved a student placing oxygen tubing (nasal cannula) on around the patient's head and neck rather than putting it on around the patient's ears. This was an unsafe practice because the patient was a C6 quadriplegic with no arm movement and experienced coughing spells causing him to "bed-walk." Placing the oxygen tubing around the patient's neck had the potential to seriously harm the patient and this was amplified because of the patient's inability to rectify the situation. Another PAE occurred when a student provided tracheostomy care for a ventilated patient.

He [student] proceeded to carry out trach care on a ventilated patient without supervision even though he had never cared for a ventilated patient prior to this day. He then came to me to question whether the response [of the patient] was expected (P-39, A-21, M).

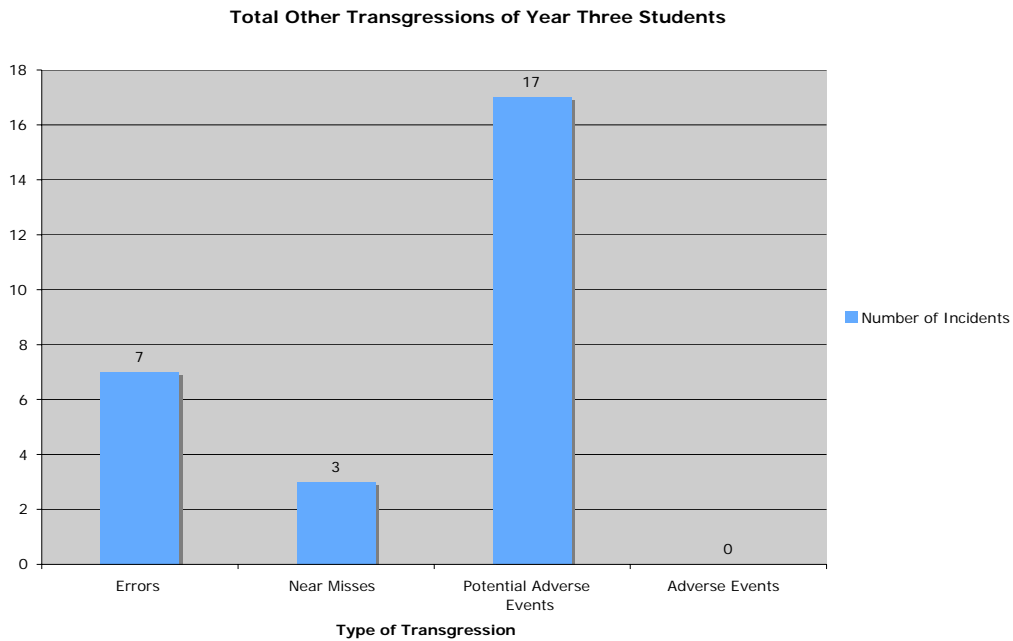
And finally, the inappropriate application of a skill precipitated a PAE when students transferred a patient with BKA (below the knee amputation) from her chair to a commode without looking up or asking how to transfer the patient safely. It was just by luck that the patient was not harmed.

C. Other Transgressions

i. Other Transgressions: Classification

The following Chart (1.27) illustrates the number of Es, NMs, PAEs, and AEs within each of the three categories: inadequate data collection/assessment; inability to prioritize nursing care; and lack of follow through care. See also ranked ordered categories in Figure 1.12.

Chart 1.27: Other Transgressions by Classification



Other Transgressions includes the categories of inadequate data collection/assessment; inability to prioritize nursing care; and lack of follow-through care (Figure 1.12). Students precipitated a total of twenty-seven (n=27) transgressions.

Figure 1.12

- Other Transgressions**

 - Inadequate Data Collection/Assessment
 - Inability to Prioritize Nursing Care
 - Lack of Follow-Through Care

ii. Other Transgressions: Gender and Student Status

These are accounted for as follows: Errors (n=7); Near Misses (n=3); and Potential Adverse Events (n=17), for a total of twenty-seven transgressions. Male nursing students accounted for 37.04% (n=10) and females 62.96% (n=17) of the total

transgressions respectively. International students contributed 40.74% (n=11); male international 18.52% (n=5); and international females 22.22% (n=6).

Demographics (gender, student status) and the number of *Other Transgressions* are presented in Table 1.18.

- *In this sample, male nursing students appear to be over-represented with respect to these transgressions (37.03%; n=10). International students at 40.74% (n=11) were also at higher risk for precipitating transgressions.*

Table 1.18: Demographic and Number of Errors, Near Misses, Potential Adverse Events, and Adverse Events of Other Transgressions: Inadequate Data Collection/Assessment; Inability to Prioritize Nursing Care; and Lack of Follow-Through Care.

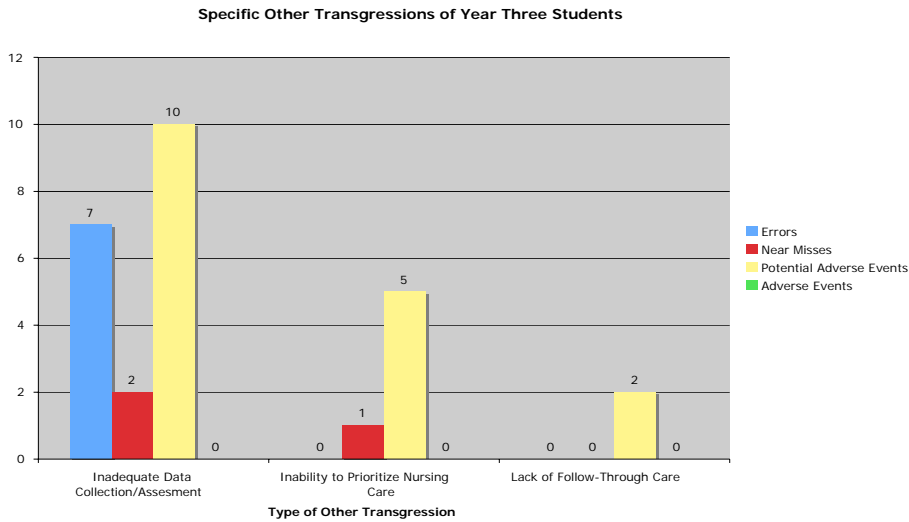
Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=5)	4	1	5	0	10	37.04%*
Women (n=21)	3	2	12	0	17	62.96%
Overall (n=26)	7	3	17	0	27	100%
Men (international) (n=3)	1	1	2	0	4	14.81%
Women (international) (n=6)	0	1	6	0	7	25.93%
International Overall (total) (n=9)	1	2	8	0	11	40.74%*

* Areas of concern

iii. Other Transgressions: Areas of Concern

The type and number of transgressions in this category are presented in Chart (1.28) below.

Chart 1.28: Other Transgressions by Areas of Concern



Inadequate Data Collection/Assessment. This category proved to be the greatest challenge for students within *Other Transgressions*, i.e., Errors (n=7), Near Misses (n=2) and Potential Adverse Events (n=10). This resulted in a total of nineteen (n=19) events as identified in Table 1.19. As previously noted in this Report, textual excerpts do not correspond to the actual number of events; they are illustrative of these transgressions. More students had difficulty with vital signs (n=4) than any other area.

Table 1.19: Examples of Inadequate Data Collection/Assessment Issues.

Examples of Data Collection/Assessment Issues
Vital Signs
Blood Pressure
Urine Input/Output
Charting
Respiratory Monitoring
ACCU checks

Knowledge deficits contributed to the inadequate collection of data and/or inappropriate patient assessments. A Near Miss occurred when a student was unable to provide the rationale for documenting urine outputs. The CI noted that the student became “flustered and had difficulty understanding what I [CI] was asking” when she was questioned about the implications of urine input/output on a post-operative patient. A second student precipitated a Near Miss because she lacked the underlying theory to safely care for a post-operative patient.

She [student] was to monitor the PODI [post-operative Day1] urine output. When asked “Why?”, she stated: “So she [patient] doesn't get puffy.” She [student] was unaware what amounts of urine would be of concern, when to notify staff, or what it could indicate (P-24, A-26, F, I).

A student precipitated a PAE when she failed to take a patient's vital signs and had not conducted her post-operative morning assessment by 11:00 am. The student felt the patient was “sleeping and comfortable” and did not wake him to obtain vital signs. The student then became busy and did not return back to the patient's room until later. This particular patient had a laparoscopic cholecystectomy completed just the previous evening.

The following PAE transpired when a student failed to accurately assess and document respirations on a patient receiving morphine. Furthermore, the student did not have a watch or timing device; she indicated she estimated the patient's respirations without the necessary timing equipment.

Came to clinical without a watch. Your patient had received epi-morphine post-op. We had discussed this prior to you starting your

morning care. The respirations were not charted. The respirations were to be checked every hour. I noticed that your watch was missing. I asked how you could check respirations without a watch. You replied that you could figure out 30 seconds and multiply by 2. Estimating respirations is a patient safety issue (P-30, A-23, F, I).

Another example of a PAE demonstrated a student's lack of professional accountability with respect to data collection.

CI asked if he [student] had done his ACCU-check. He replied, "I forgot." This is unsafe, inconsistent practice (P-46, A41, M,).

Inability to Prioritize Nursing Care. There was a total of six (n=6) events in the following interrelated areas; organization of care, prioritization of care, patient load, and lack of preparation. These included; Near Misses (n=1) and Potential Adverse Events (n=5).

Several PAEs occurred when a student was unable to organize her nursing care when her patient load was more than one. The following example highlights a constellation of challenges experienced by this student in light of increasing her patient load from one to two patients.

Caring for 2 patients, unable to organize or prioritize care. Focusing on one patient and not completing care with second. Hung wrong IV solution and meds given late. Patient on oxygen, short of breath, wheezing, O2 sat not done at this time, i.e., incomplete assessment. One patient not able to take a.m. meds because of nausea. She [student] did withhold meds at his [patient's] request, but did not reassess on an ongoing basis to see if patient was able to take after anti-emetic. Meds important to this client, as he is HIV positive, and meds are for his condition. Patient received meds a number of hours later, after questioned by CI (P-33, A-36, F).

The combination of knowledge deficit, inadequate assessment, along with the inability to prioritize nursing care resulted in the following PAE:

When asked about the patient (lost consciousness, patient also had a broken mandible) she [student] stated she could not wake up the patient so she went on to the next patient. She could not identify the risk that a loss of consciousness could indicate (P-24, A-26, F, I).

Lack of Follow-Through Care. Two PAEs (n=2) were found in this category. These two incidents resulted from not following Doctor's orders. One male student was responsible for a PAE when he did not communicate to his buddy (registered) nurse, or write in the progress notes, a physician's message that the student's patient would remain in *Buck's Traction* for one more week. The patient was later to have physiotherapy to mobilize him/her and be sent back to a care facility. The student heard (received) the physician's verbal order, but did not follow-through with the appropriate actions. The following textual excerpt reveals the PAE precipitated by the second student.

Doctor's orders that were written in the chart were not acted upon until you were notified that there were orders written that had to be acted on (low blood pressure, fluid bolus given 2.5 hours after the order was written). The behaviour is deemed unsafe. You did inform your buddy nurse of your patient's low BP and your plan to recheck it in 30 minutes (P-29, A-21, F).

IV. Year Three: Remediation and Rehabilitation

Remediation and rehabilitation of Year Three students revealed two themes that were then subsequently divided into categories. The first theme focused on remedial activities that were *Student-Centered*, i.e. activities and assignments for which students were responsible for completing. This theme was made up of three categories: seeking resources; increasing communication and contact with clinical instructor; and, engaging in reflective and organizational exercises.

The second theme consisted of activities that were *Clinical Instructor-Centered* and involved a commitment from the clinical instructors (CIs) as they offered additional supervision, guidance, and support to the students. This theme was constituted by two categories: increasing supervision and feedback for nursing students; and guiding students' review of concepts and skills.

Student-Centered: Remediation and Rehabilitation Activities

Student-centered activities consists of three categories as listed in Figure 1.13.

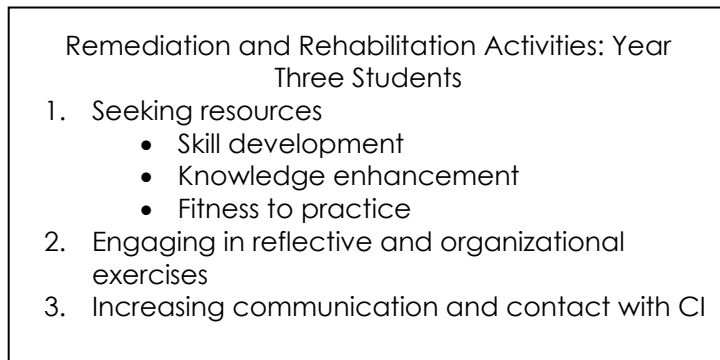


Figure 1.13: Student-centered remediation responsibilities

i. Seeking Resources. This rehabilitative action was established in the event that a student displayed a knowledge deficit. The student was consequently directed to support in the area of his/her deficiency. Resources included; clinical skill development, knowledge enhancement, and support for fitness to practice.

(a) Clinical Skill Development

Many students were directed to the skills lab to improve or relearn certain competencies. Out of the eight students who were given instruction to seek more skills lab time, 62.5% (n=5) were related to medication administration.

In order to increase the speed of preparing IV meds, it is suggested that you continue to practice your psychomotor skills in the skills lab (P13, A50, F).

Use the skills lab at the university to review medication administration, dosages, and how to calculate proper dosages per guidelines (P20, A30, F).

The remaining 37.5% (n=3) were related to practicing basic skills such as patient positioning or patient transfers.

Make an appointment with skills lab to practice a.m. care, turning, positioning, and transferring a patient (P16, A28, M, I).

Go to the skills lab and repeat bed making and dressing change. Have CI made aware of results by instructor. Let CI know the date you plan to go and when you have completed the skills (P37, A23, M, I).

This remediation activity was assigned to students because they demonstrated lack of proficiency in certain clinical skills. The extra skills lab time encouraged students to practice in a safe (low-stress) environment to give them the confidence and abilities required in the clinical setting.

(b) Knowledge Enhancement

Four students were offered textual or knowledge-based resources to review. The knowledge deficits observed varied from lack of familiarity with certain procedures to not knowing pertinent information regarding medications. The students were generally expected to utilize these resources prior to encountering or re-encountering the situation in the clinical setting.

In anticipation of skills required, you will research the skill and be knowledgeable about the principles of the procedure, and be able to identify it in the policy and procedure manual (P16, A28, M, I).

Use Davis's Drug Guide for Nurses, 3rd ed., for researching your medications, as well as Pharmacology Reference Manual for IV medications (P43, A31, M, I).

These supplemental knowledge resources served to build a foundation for safe practice, and helped students become familiar with events they might not have previously encountered or experienced.

(c) Fitness to Practice

Three students struggled with personal issues that were induced, or exacerbated by the challenges of nursing care. Sometimes, the stressful environment of the practice setting caused anxieties in the nursing students. When the CIs recognized these problems as interfering with the students' practice on the unit, they recommended support.

It is strongly suggested that you continue to seek medical advice for the management of your anxiety disorder (P21, A30, F, I).

Counseling services and health service (university health services) were suggested for you to receive assistance in dealing with the high level of stress that you are currently experiencing (P42, A21, F).

Contact support services for help in dealing with heightened anxiety and shaking hands (P36, A24, F).

This extra emotional support was offered to create stability for the students, and help in assuaging emotional difficulties arising during or from their clinical practice.

ii. Engaging in reflective and organizational exercises. With certain students, CIs wanted to encourage critical thinking in terms of reflective practice and organization of their nursing care. Exercises were offered to foster these thinking processes. Five nursing students engaged in these activities. Of the five nursing

students, 60% (n=3) worked on exercises to improve the organization of their nursing care. These included heuristic devices, e.g. organization sheets to structure their plan of care and nursing priorities.

You will prepare an organization sheet for yourself outlining the specific tasks required for your patient assignment including time frames (P21, A30, F, I).

Develop a plan of care for each patient and identify appropriate nursing priorities (P41, A28, F).

Exercises to foster reflective thought and maintain quality assurance were implemented for the remaining two students.

Discuss treatments and procedures prior to implementing them, and analyze afterwards what was done well and what could have been improved.... Define personal goals consistently each week, and analyze afterwards if these goals were met, and assess why or why not (P20, A30, F).

Review medication one final time for discrepancies prior to leaving the unit at the end of the day (P34, A22, F).

These activities assisted students to improve their critical thinking, reflect on their practice, and organization of nursing care, while simultaneously maintaining quality patient care.

iii. Increasing Communication and Contact with CI. Another responsibility given to the students was to increase communication and contact with their CI. While this also created more responsibility and work for the CIs, it was important that the students took an active role in initiating contact. The intent behind the increased communication varied for each student. There were five different reasons justifying this activity among the eight students who were directed to augment CI contact. Some students had multiple concerns that were potentially

addressed by increased contact with their CIs. Each of these concerns is presented in Table 1.20 along with supportive data.

Table 1.20: Concerns leading to increased student communication with clinical instructors

Concern	Participant(s)	Supportive Data
Organization/ Prioritizing care	P16, P20, P21, P23, P35, P41 (n=6)	Meet with me each morning after receiving your report to discuss your plan for your day in order to 1. Demonstrate to me your concrete understanding of core concepts... 2. Discuss your nursing priorities for your patients and an ability to revise them as changes occur. Demonstrate to me you are prepared to safely care for your patients (P23, A44, M, I) & (P35, A34, F).
Basic Care	P21, P23, P35 (n=3)	All procedures, including dressing changes, must be discussed with and/or observed by the CI until further notice (P21, A30, F, I).
Documentation /Charting	P22, P41 (n=2)	You will not document in the cart without reviewing with the clinical instructor first (P22, A48, F, I).
Fitness to practice	P12 (n=1)	I would ask that you be vigilant and more self aware in terms of how terms of how it affects you on the ward and to not let it jeopardize patient care. If you are feeling overwhelmed, you will come and speak to me (P12, A23, F).
Medication	P20 (n=1)	Have a buddy nurse or CI present at all times when administering any medication (P20, A30, F).

Increasing communication and contact on the part of the students was viewed as rehabilitative for a range of practice concerns. This rehabilitative strategy also strengthened the relationship between the student and CI and prevented patient safety events on the unit. Moreover, the strategy augmented overall support for students who were not demonstrating growth with respect to their practice.

Clinical Instructor-Centered: Remediation and Rehabilitation Activities

Clinical instructor-centered activities consisted of two categories as listed in Figure 1.14. CIs were committed to assisting students with their clinical development and growth.

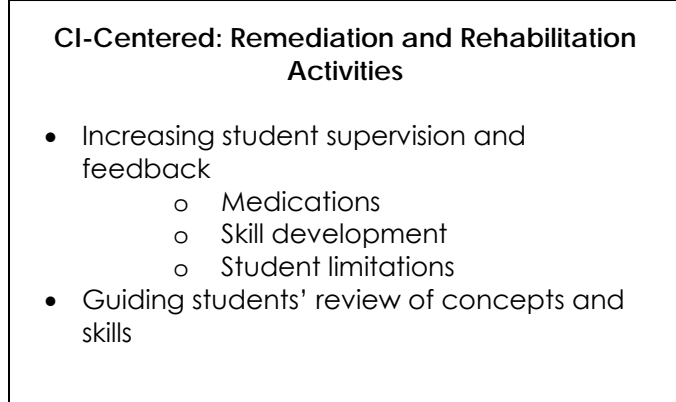


Figure 1.14: CI-centered Remediation

Activities

Increasing student supervision and feedback. The CIs increased their supervision of students who demonstrated the need for growth in their practice. The instructors also offered additional and ongoing feedback. Most often, this additional support was focused around one area of concern. Of the seven students who required more supervision and feedback, there were three different reasons. Among these areas of concern, medications were paramount. The concerns requiring more supervision are presented in Table 1.21 along with supportive data.

Table 1.21: Concerns leading to increased CI supervision and feedback

Concern	Participant(s)	Supportive Data
Medications	P13, P15, P34, P38 (n=4)	All medications, whether they are oral, subcutaneous, intramuscular, intravenous, or suppository can only be administered under the supervision of CI. (P15, A39, M, I) I [CI] will observe your medication administration for the length of the contract. (P38, A22, F, I)
Student practice limitations	P37, P42 (n=2)	I [CI] will continue to highlight any area of weakness in your portfolio, you will respond to these areas prior to the end of the clinical day on the Wednesday after receiving it back on the Monday. (P37, A23, M, I) CI will provide daily feedback about preparation for clinical. This feedback will provide guidance for identification of areas that the student is well prepared for/in and areas that require further development. (P42, A21, F)
Skill development	P25 (n=1)	CI will observe implementation of required skills and provide appropriate guidance until student ins competent/independent in performing each skill. (P25, A27, F, I)

Increasing CI supervision and feedback were supportive actions for students. In these cases, the CIs assumed responsibility to augment their availability for students and support them.

Guiding students' review of concepts and skills. Finally, CIs aided students in reviewing certain concepts and skills. In these cases, the CI personally supported a student by teaching him/her how to perform a certain skill or how to access a resource.

CI will review IV rates and drug calculation sheet with student. CI will redemonstrate the use of the internal policy and procedure manual. (P25, A27, F, I)

This guidance allowed the CI to directly develop the student's knowledge of concepts, and to independently demonstrate specific skills to the student.

Rehabilitation and remedial activities and assignments developed by the CIs to foster improved nursing practice over time were thorough, thoughtful, comprehensive, interactive, and allowed for the demonstration of mutual accountability. In addition, students were apprised of their areas of practice concern in a transparent manner.

SECTION ONE: CASE STUDIES Year Four Nursing Students

I. Professional Socialization: Development of the Registered Nurse Identity

There was a marked decrease in the number of professional socialization concerns among the Year Four nursing students. Such identify development concerns were addressed in Years Two and Three. Professional socialization and identity development concerns were related to awareness of professional limitations, unacceptable attitude, and a lack of initiative:

- Knowing Professional Limitations: *Difficulty identifying clinical limitations and the need for supervision and advice as appropriate (P51,F).*
- Inappropriate Attitude: *You don't appear committed to your senior practicum. This has been exemplified through a perceived lack of interest in your learning (P51,F).*
- Lack of Self-Direction: *You are not self-directed; you must look for learning opportunities to meet your [clinical] objectives and your course objectives (P60, F, I).*

II. Transgressions: Year Four

The data sets for Year Three and Year Four were analyzed separately. This was to determine whether there were unique patterns among Errors, Near Misses, Potential Adverse Events, and Adverse Events—arising from each respective Year. Comparisons regarding Years Three and Four are made in the Executive Summary. See pages 61-63 for definitions of Errors, Near Misses, Potential Adverse Events, and Adverse Events.

Clinical transgressions refer to potential or actual acts of commission or omission that precipitated patient safety concerns. Given the nature of the data in the clinical learning contracts, the focus was on human (student), and not systems, error. This orientation was reflected in the analysis of the data; however, where appropriate, systems implications were noted in this section, throughout the Report, and in the *Executive Summary*.

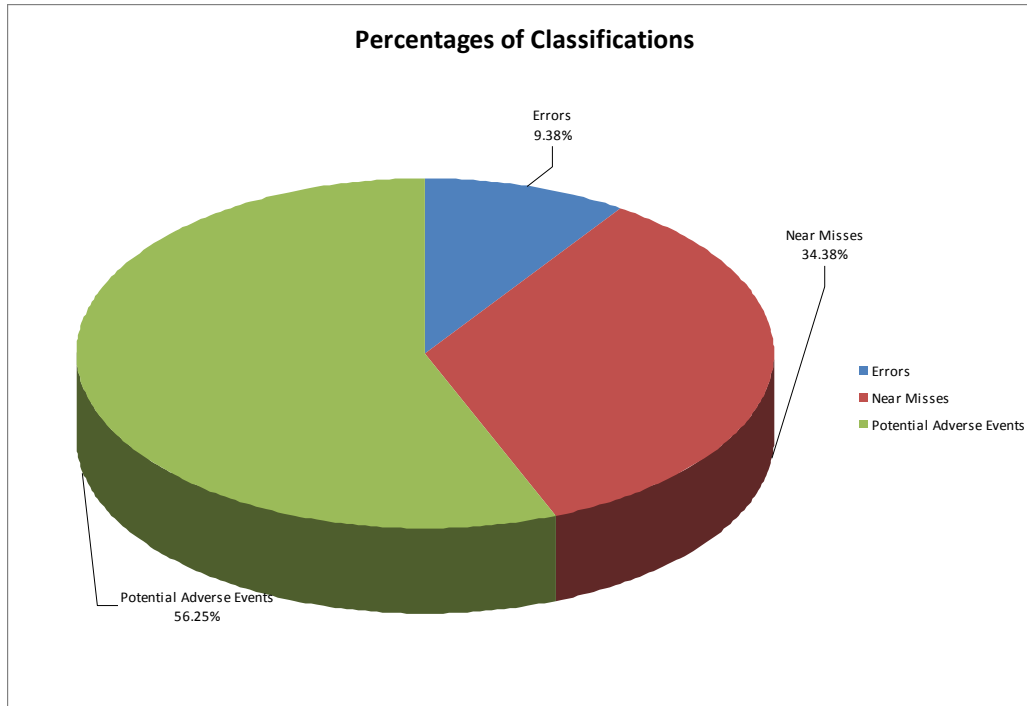
Figure 1.15: Clinical Transgressions: Year Four Overview

<p>I. Clinical Transgressions: Classification</p> <ul style="list-style-type: none">• Distribution of transgressions by classification• Observations drawn from transgression classification distribution <p>II. Transgressions by Gender, Student Status, and Age</p> <ul style="list-style-type: none">• Gender, age, and student status<ul style="list-style-type: none">○ Observations regarding gender○ Observations regarding age○ Observations regarding gender and age <p>III. Thematic Analysis: Year Four Transgressions</p> <p>A. Medication Concerns</p> <ul style="list-style-type: none">i. Medication transgression classificationii. Gender and student statusiii. Areas of concern: Right dose, right time, right medication, right route, knowledge deficit, and right patient <p>B. Inadequate and/or Inappropriate Skill Application</p> <ul style="list-style-type: none">i. Transgression classificationii. Gender and student statusiii. Areas of concern: Intravenous, urinary catheterization, and asepsis <p>C. Assessment, Reporting, and Recording Transgressions</p> <ul style="list-style-type: none">i. Transgression classificationii. Gender and student status
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Year Four students precipitated a total of thirty-two (n=32) transgressions. The pie Chart below illustrates the relative percentages of Errors, Near Misses, and

Potential Adverse Events. There were no Adverse Events recorded in the clinical learning contracts among the Year Four nursing students.

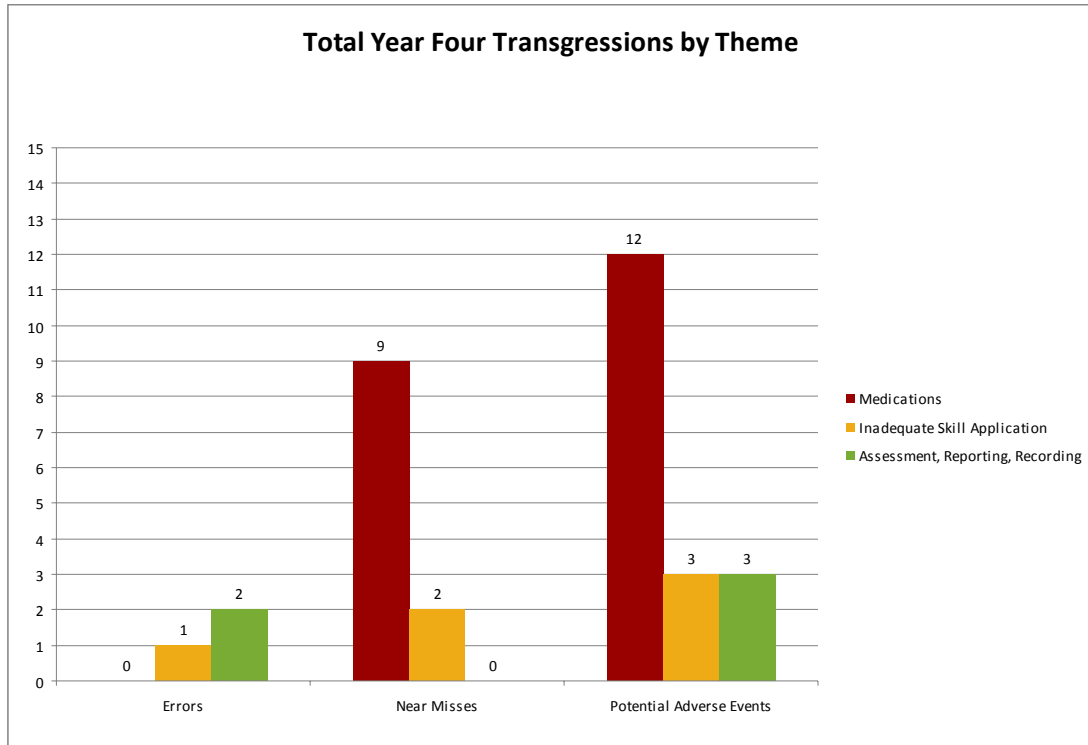
Chart 1.29: Percentages of Year Four Student Transgressions by Classification



Observations Drawn from Transgression Classification Data

- PAEs made up 56.25% of all Year Four transgressions.
- Near Misses ("good catches") comprised 34.38% of the total transgressions.
- PAEs and AEs constituted more than one half of the total transgressions. Of concern is that PAE greatly outnumbered NMs. This means that patients were placed at risk for harm in the majority of the transgressions precipitated by Year Four students. Just over 1/3 of the total transgressions were caught or intercepted by clinical instructors and/or buddy RNs.

Chart 1.30



- *Potential Adverse Events occurred most often with respect to medication concerns 37.5% (n=12).*
- *Medication PAEs represented 65.63% (n=12) of all the Year Four medication concerns.*
- *Near Misses occurred most frequently in the area of medication concerns; NMs comprised 28.13% (n=9) of the total transgressions among this sample of Year Four students. NMs also accounted for 42.86% of all the medication-related transgressions.*

Overall, Year Four students were responsible for thirty-two (n=32) transgressions as noted in the clinical learning contracts. Errors were the least populated category (9.38%; n=3). The next highest transgression type was Near Misses at 34.38% (n=11). Potential Adverse Events (56.25%, n=18) accounted for the majority of the total transgressions. As previously noted, no Adverse Events (n=0) were precipitated by the Year Four students.

PAEs dominated the Year Four transgression landscape. PAEs occurred most often with respect to medications; 37.5%; (n=12) of the total PAEs (n=32). Of note, medication PAES represented 65.63% of all the Year Four medication concerns. Near Misses also transpired most often in the area of medication; 28.13%; (n=9) of the total transgressions, (n=32). With respect to inadequate or inappropriate skill application, there was one Error, two Near Misses, and three Potential Adverse Events. Finally, and regarding inappropriate reporting/recording, there were five transgressions; two Errors and three PAEs.

II. Transgressions by Gender, Student Status and Age

Gender, Age, and Student Status. There were 13 Year Four clinical learning contracts. Of this number, only 10 students precipitated transgressions. Thus, the transgressions denominator was reduced by n=3, for a total of n=10 students. Male nursing students were responsible for 31.25%, (n=10) of all the Year Four transgressions; females were responsible for 68.75%, (n=22) of the total number of transgressions. The demographic profiles of these Year Four students are presented in Table 1.22.

Table 1.22: Demographic Profile and Type of Overall Transgression: Year Four Students.

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Adverse Event (AE)	Total #	Total %
Men (n=2)	0	0	10*	0	10	31.25%*
Women (n=8)	3	11	8	0	22	68.75%
Overall	3	11	18	0	32	N/A
Men (n=0) (international)	0	0	0	0	0	0.0%
Women (n=1) (international)	0	2	1	0	3	9.38%
International Overall (total)	0	2	1	0	3	9.38%

* Represent areas of concern; men (n=2) precipitated 55.5% of all the PAEs and 100% of their transgressions occurred in this category. Males appear over represented in the transgression sample, i.e., 31.25% of the total number of transgressions were attributed to 20% of the sample.

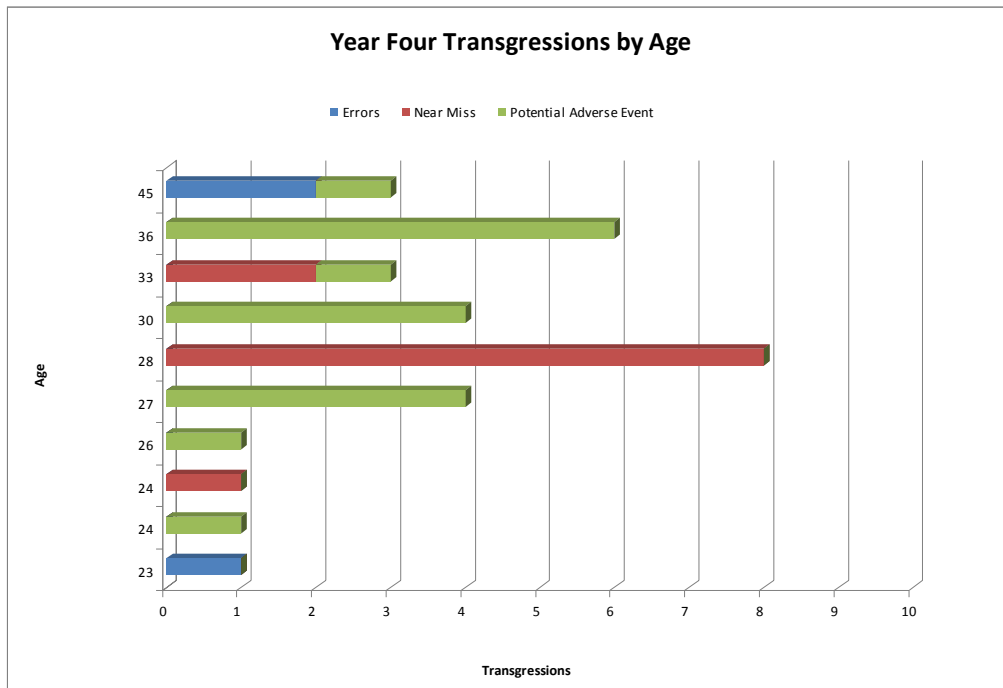
- *Males were 20% (n=2) of the Year Four transgression sample; however, they contributed to 31.25% (n=10) of the total transgressions. Given the small sample size, caution is warranted regarding the interpretation of this data.*
- *Male nursing students were accountable for 55.5% of all the PAEs in Year Four.*
- *Although the Year Four males in this sample precipitated 31.25% of all the transgressions, 100% of their transgressions (n=10) was in the Potential Adverse Event category.*
- *There were no international male nursing students in the transgression data set; there was one international female student in the same data set.*

Observations Regarding Gender

Although males constituted only 20% of the sample (n=2), they precipitated 31.25% of all the Year Four transgressions. However, males were also responsible for 55.5% of all the Potential Adverse Events. Of note is that all of their

transgressions were in this one category, i.e., Potential Adverse Events. Age profiles of all students who precipitated transgressions are presented in the following three Charts (1.31, 1.32 and 1.33): Year Four Transgressions by Age; Year Four Male Transgressions by Age; and Year Four Female Transgressions by Age (see below).

Chart 1.31



Observations Regarding Age

- *Older students (≥ 27) precipitated the clear majority of transgressions (Errors, Near Misses, and Potential Adverse Events) in Year Four.*

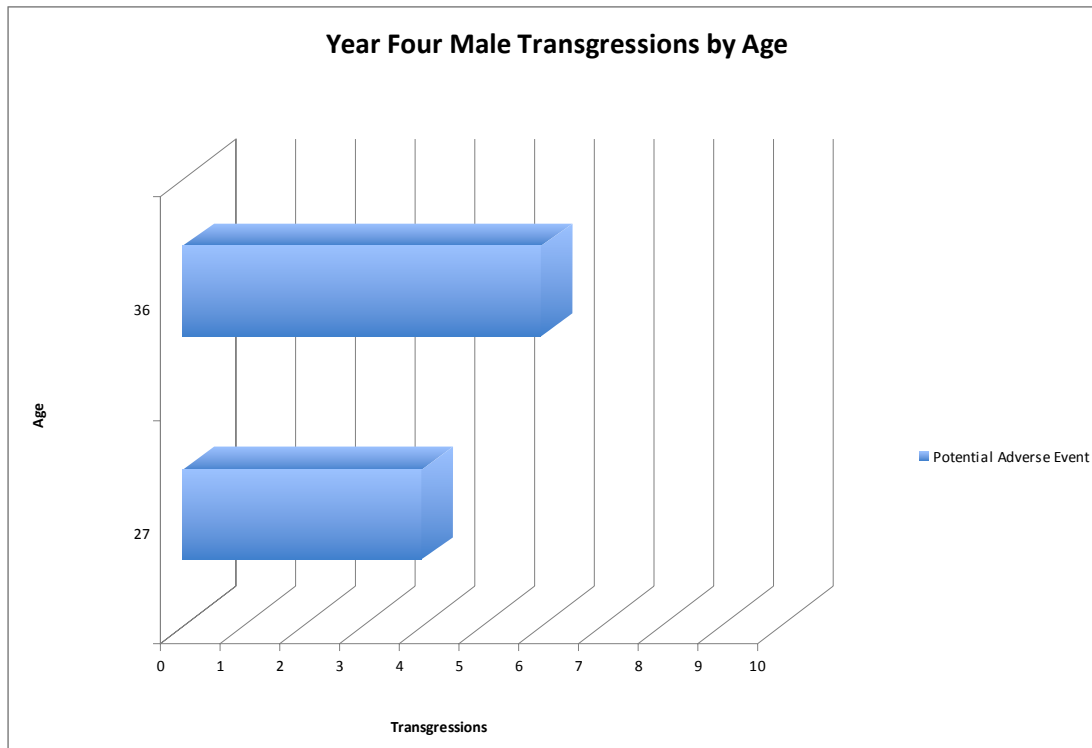
In this Chart (1.31), Errors, Near Misses, and Potential Adverse Events were cross-indexed with the age of each student. Younger nursing students (≤ 26) precipitated fewer transgressions when compared to the older students, i.e., 4 transgressions versus 28. The majority of Errors, Near Misses, and Potential Adverse Events occurred among the older students.

Three Year Four students failed their clinical learning contracts and consequently their clinical rotations. Their profiles were as follows:

- Age 26, Female, n=1 PAE;
- Age 45; Female; n=2 Errors; n=1 PAE;
- Age 27; Male; n=4 PAEs

Two other students, with a greater number of transgressions, passed their clinical learning contracts. Thus, the sheer number of transgressions did not correspond to a learning contract failure. Factored into failure were other dimensions of student performance, i.e., quality of nursing care, professionalism, socialization, quality of supervision offered by the clinical instructor, and progress made in relation to rehabilitation efforts. Note also that it was the older students (≥ 27) who were not successful with respect to their clinical learning contracts.

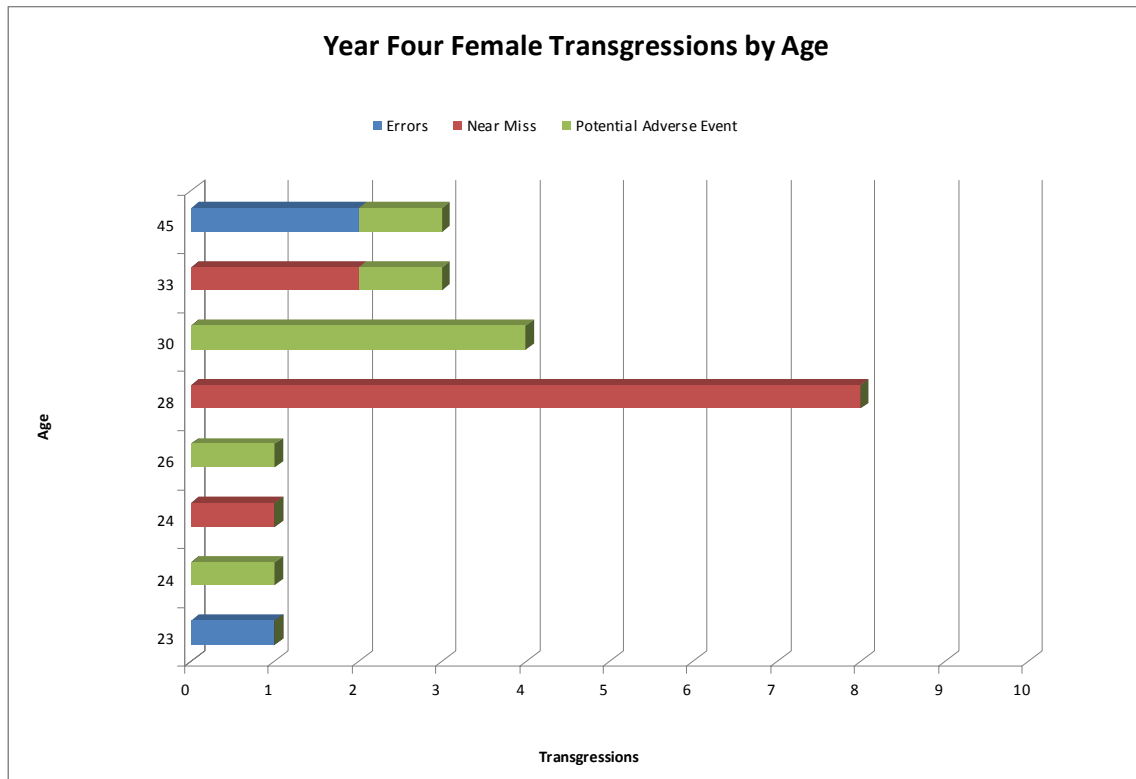
Chart 1.32



Observations Regarding Gender and Age

There were two male nursing students (aged 27 and 36) in the transgression sample. Given the small sample size, it is not possible to discern any gender/age trends. However, these two men precipitated ten (n=10) Potential Adverse Events (and no other transgression events). Their PAEs (n=10) represented 55.5% of all the PAEs in Year Four. Males were thusly over represented in this category. PAE events were not intercepted, but were discovered “after the fact.” That is, the transgression was a fait d’ complet; the student or students engaged in the activity without supervision and placed the patient at risk for harm. It may be that males are socialized to be more independent and autonomous—and such qualities were carried forward in their roles as nursing students, i.e., they may not have sought help or assistance. These men were in the “older category” of student and this may have also contributed to their reluctance to admit the need for additional clinical supervision. Some male nursing students may have had difficulty with female authority figures, and thus, they were reluctant to consult their female clinical instructors for assistance. Finally, clinical instructors (almost exclusively female) may make assumptions about their male students, i.e., that they are competent and require less supervision than the female students. Alternatively, male nursing students may be more closely supervised compared to their women colleagues. The PAE data, however, do not readily support this interpretation. PAEs were discovered “after the fact.” Thus, the male students engaged in nursing interventions unbeknownst to the clinical instructors, buddy RNs, and/or their preceptors. Additional research is required to better understand the relationship between gender and patient safety concerns.

Chart 1.33



- *In this sample, older female nursing students (≥ 27) precipitated more Errors, Near Misses and Potential Adverse Events compared to younger female nursing students.*

III. Thematic Analysis: Year Four Transgressions

Three major themes were generated from the transgression data set:

Medication concerns; inadequate and/or inappropriate skill application; and reporting/recording (e.g., charting, not reporting vital signs, etc.). These themes are shown in Figure 1.16.

Thematic Analysis: Year Four Transgressions

- Medication Concerns
- Inadequate and/or Inappropriate Skill Application
- Assessment, Reporting, Recording
 - Inadequate patient assessment
 - Multi-system failure patient
 - Failure to report chest pain
 - Not Documenting Patient's Pain or Whereabouts
 - Failure to report and record data
 - Not Recording Vital Signs
 - Failure to record data

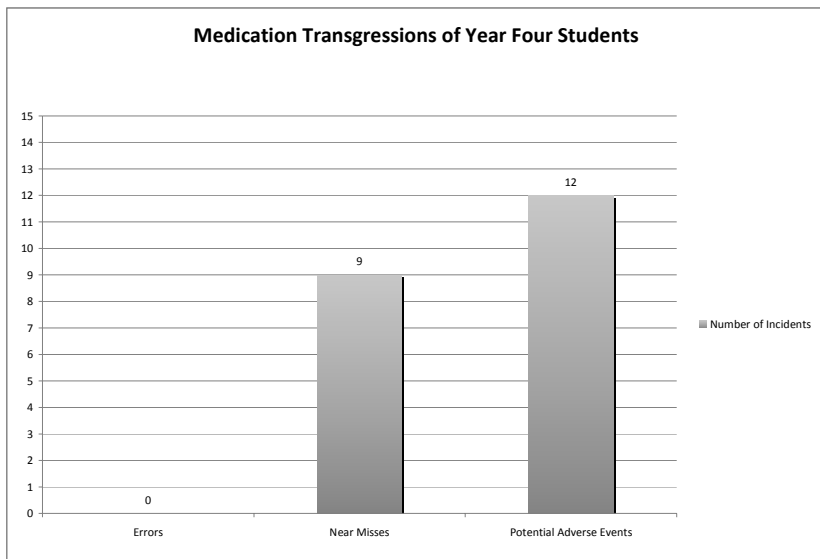
Figure 1.16

A. Medication Transgressions: Year Four Students

i. Medication Transgressions: Classification

Medication concerns accounted for the majority (65.63%, n=21) of the total Year Four transgressions. There were no Errors identified in the transgression sample.

Chart 1.34



In terms of NMs and PAEs, these accounted for 28.13% (n=9) and 37.5% (n=12) of the total Year Four transgressions respectively. NMs constituted 42.86% of the medication transgressions proper; PAEs comprised 57.14% of the medication transgressions.

- *Note that the majority of PAE events transpired without being “caught” or intercepted. The data suggest further scrutiny of the CI model and how nursing students are supervised in the clinical setting. The model, in its current form, may not be best practice with respect to patient safety. Focus group data also challenge the adequacy of this clinical instructor model.*

ii. Medication Transgressions: Gender and Student Status

- *In this sample of Year Four medication transgressions, male nursing students (20%; n=2) were accountable for 33.33% of the total number of medication transgressions and were thusly over represented in this category.*
- *In terms of transgressions, male nursing students precipitated 58.33% of all the PAEs; furthermore, PAEs constituted 100% of all their medication transgressions.*

Table 1.23: Gender and Student Status: Medication Errors, Near Misses, and Potential Adverse Events

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Total #	Total %
Men (n=2)	0	0	7*	7	33.33%*
Women (n=8)	0	9	5	14	66.66%
Overall (n=10)	0	9	12	21	100%
Women (international) (n=1) &	0	1	0	0	4.76%

*Areas of concern given the total number of male Year Four students (20%, n=2) who precipitated medication transgressions.

There were no male international students in the Year Four transgressions sample

Males were responsible for one third (33.33%; n=7) and females precipitated two-thirds (66.66%; n=14) of the total medication transgressions. Of note is that males

made up only 20% (n=2) of the transgression sample and yet they were involved in one-third of all the medication transgressions. Although the majority of the transgressions sample consisted of females (80%; n=8), they precipitated relatively fewer medication transgressions. The male nursing students were accountable for 58.33% of all the PAEs; furthermore 100% of their transgressions were PAEs. One female international student precipitated one Near Miss. There were no male international nursing students involved in any medication transgressions.

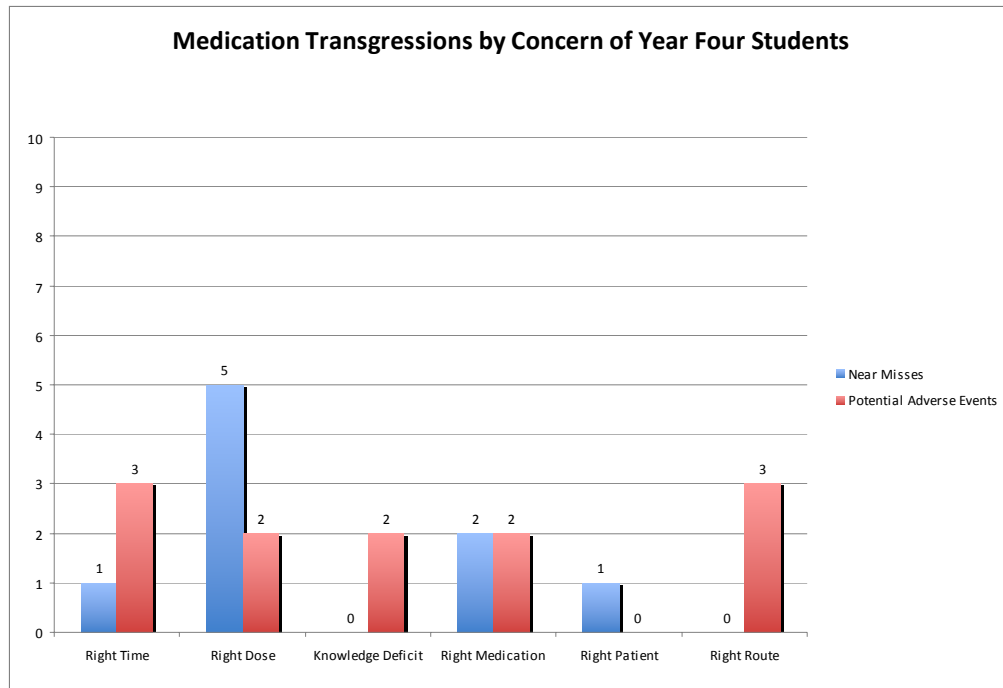
iii. Medication Transgressions: Areas of Concern

Supportive categories for the types of medication concerns are ranked ordered (based on number of incidents) and organized around the *Five Rights of Medication Administration* (plus an additional category: *Knowledge Deficit*). See Table 1.24.

Table 1.24: Medication Concerns: Rank Ordered

<ul style="list-style-type: none"> ▪ Right Dose: Incorrect dose; underdose, and concentrations/calculations
<ul style="list-style-type: none"> ▪ Right Time: Incorrect time of administration and inappropriate holding of medications
<ul style="list-style-type: none"> ▪ Right Medication: Incorrect medication, incorrect preparation (mix) and not confirming medication
<ul style="list-style-type: none"> ▪ Right Route: Incorrect route
<ul style="list-style-type: none"> ▪ Knowledge Deficit: Medication/treatment/narcotic disposal
<ul style="list-style-type: none"> ▪ Right Patient: Not checking identity

Chart 1.35



- *The majority of medication transgressions (33%) occurred in the area of Right Dose. Clinical instructors and/or buddy registered nurses intercepted 71.43% (n=5/7) of the Right Dose concerns; 2 incorrect dosages (28.57%) were not “caught” and were administered to patients.*

There were n=21 medication transgressions; no Errors or Adverse Events were found in the Year Four medication transgression data set. Most of the medication transgressions occurred in the area of Right Dose (33%; 7/21 transgressions). The greatest number of NMs occurred with respect to Right Dose (n=5). Clinical instructors and/or buddy (registered) nurses intercepted and made good catches in 71.43% (n=5/7) of the Right Dose situations, and ensured that patients received correctly prescribed medication dosages. Unfortunately, patients were placed in harms way when incorrect medication doses were administered by the nursing students (28.57%; n=2). PAEs took place most often in two areas of concern; Right Time (n=3) and Right Route (n=3).

What follows is a presentation of specific examples of incidents within each category of *Medication Concerns*. The examples are for illustrative purposes and thus the number of examples does not correspond to the actual number of reported transgressions.

Right Dose: Incorrect dose; underdose/overdose, concentrations/calculations.

A total of 5 Near Misses and 2 Potential Adverse Events occurred in this category.

Two examples of Near Misses follow.

The student was given Ranitidine to administer. The order indicated the patient was to receive 50 mg SQ. The label on the Ranitidine ampule indicated Ranitidine 25 mg/ml. The label also indicated the drug contained 50 mg/2ml. She [student] did not recognize that the label clearly indicated the number of ml to be administered without the need to calculate. She began to calculate the dose. She was able to state the correct formula (dose desired, over dose on hand "x" the quantity in ml). However, she had difficulty applying the information on the vial to the formula. She calculated, in error, that the patient should receive 1 ml. When she was told she was incorrect, she recalculated and stated that the patient should receive 4 ml. The CI reviewed the use of the formula with the student and also pointed out to her the correct dosage was on the label. The student drew up the dose again and gave it with guidance (P-49,A-28,F).

The student calculated the correct dosage at 6.25 ml. She drew up 6 ml. The Preceptor caught this error right away. The patient received the correct dosage. The student stated "I thought my Preceptor was rounding down dosages, so I did the same" (P-57,A-24,F).

Two examples of PAEs are presented in the following textual excerpts.

Medication errors; [student] gave incorrect gravol dosage, two times the ordered dose (P-50,A-26,F).

Trazodone 25 mg order given instead of 50 mg dose order (P-56,A-30,F).

Right Time. Students precipitated five (n=5) events whereby medications were not administered at the correct time. As identified earlier, *The Five Rights of*

Medication Administration, indicate that medication must be given at the correct time (within half an hour of the prescribed time). Included in this category are missed medications (i.e., not administered or administered late). Two NMs, and three PAEs were recorded in this category.

An example of a NM follows in which a student forgot to include a prescribed medication and was reminded of this omission by the clinical instructor.

It was noted that the student had failed to pour the Nystatin (a stock drug which was not dispensed by the computer). The CI discussed the seriousness of the situation with her [student] and asked her if she had checked the MAR [Medication Assessment Record] (P-49,A-28,F).

The following is an example of a PAE.

At the end of the day, I [Clinical Instructor] asked all students if they had signed off all their meds. He [student] replied that he had. The med for 13:00 had not been signed off. His [student] reply was that he had "just given it" [late medication administration].

One student precipitated two PAEs; he omitted administering a methadone dose to one patient, and failed to administer Ativan sublingual to another patient.

Right Medication. Two NMs and two PAEs occurred within this category. A Near Miss occurred when a student did not review the medication assessment record (MAR) before attempting to administer a medication.

After completing the SQ injections, the student was about to administer the Tablet (Losec). At this point the patient's wife stated, "He doesn't take that anymore." Because the patient was quite drowsy, the CI assumed that the wife had said that because her husband was having difficulty swallowing. When the CI asked the wife if the patient was no longer able to swallow the pill, she [wife] stated that the doctor had discontinued the Losec and placed her husband on Ranitidine. At this point the CI reviewed all meds on the MAR and addressed the wife's concerns. The student and the CI left the room and the MAR was reviewed. It was noted

that the Losec was discontinued as the wife had indicated and the patient was now on SQ Ranitidine (P-49,A-28,F).

Another NM occurred when a student could not find the correct anti-emetic (Phenergan) in the medication drawer and picked up another medication and asked "Could I not just give this?" A PAE occurred when a student administered Vancomycin (an antibiotic) IV without preparing it with the proper dilutions as ordered. This same student precipitated the second PAE when she improperly mixed IV medications and then administered them. The student infused Flagyl IV with 20 meq KCl without ensuring their compatibility.

Knowledge Deficit. Two PAEs were recorded in this category. A PAE occurred with respect to the safety of narcotics.

The patient requires IM [Intra-muscular] meds q3h. On day 6 of your clinical, staff observed that you did not put the narcotic medication in the locked cupboard and left the Narcotic Keys in the lock. This should not be an issue after the number of times you have given Narcotic medications and this is of concern because of the nature of the clients on this unit (P-62,A-27,M).

Right Route. Three PAEs were noted in this category. One student precipitated two PAEs when he administered Diluadid subcutaneously and not orally; the second PAE occurred when the same student gave a pump bolus instead of oral medication for breakthrough pain.

Right Patient. One transgression (NM) occurred in this category.

During administration of the medications she [student] had to be reminded to check the ID bracelet before administering the medications. This is not an uncommon mistake for students to make, the first time they do this new skill (P-49,A-28,F).

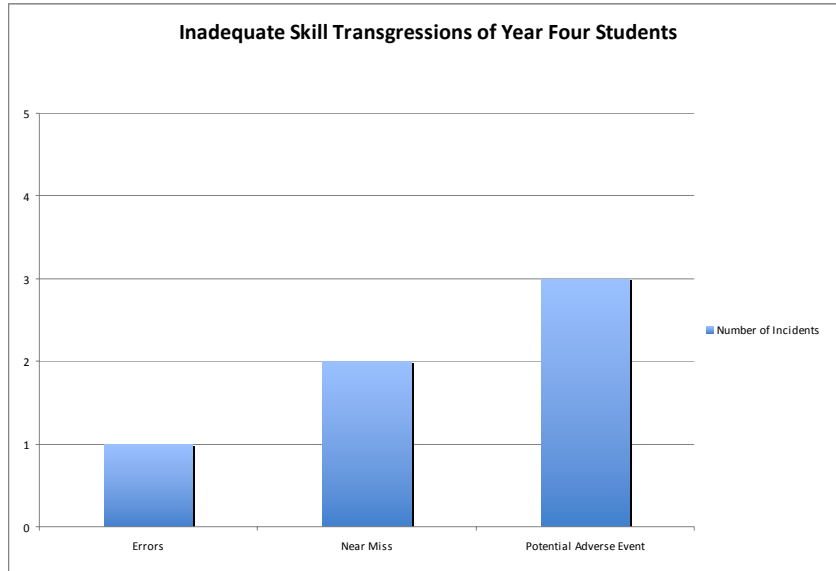
B. Inadequate and/or Inappropriate Skill Application

Another theme emerging from the Year Four data set was *Inadequate and/or Inappropriate Skill Application*.

i. Inadequate/Inappropriate Skill Transgressions: Classification

There were a total of six transgressions in this area as shown in Chart 1.36; Errors (n=1), Near Misses (n=2), and Potential Adverse Events (n=3). PAEs were the most frequently occurring transgression (50%; n=3). Clinical instructors and/or buddy registered nurses intercepted (“good catches”) one-third (33%; n=2) of the transgressions.

Chart 1.36: Classification of Inadequate Skill Transgressions for Year Four Students



- *PAEs were the most frequently occurring transgression (50%; n=3) with respect to inadequate and/or inappropriate skill application.*
- *Clinical instructors and/or buddy registered nurses intercepted or made “good catches” with respect to one-third (33%; n=2) of the skill*

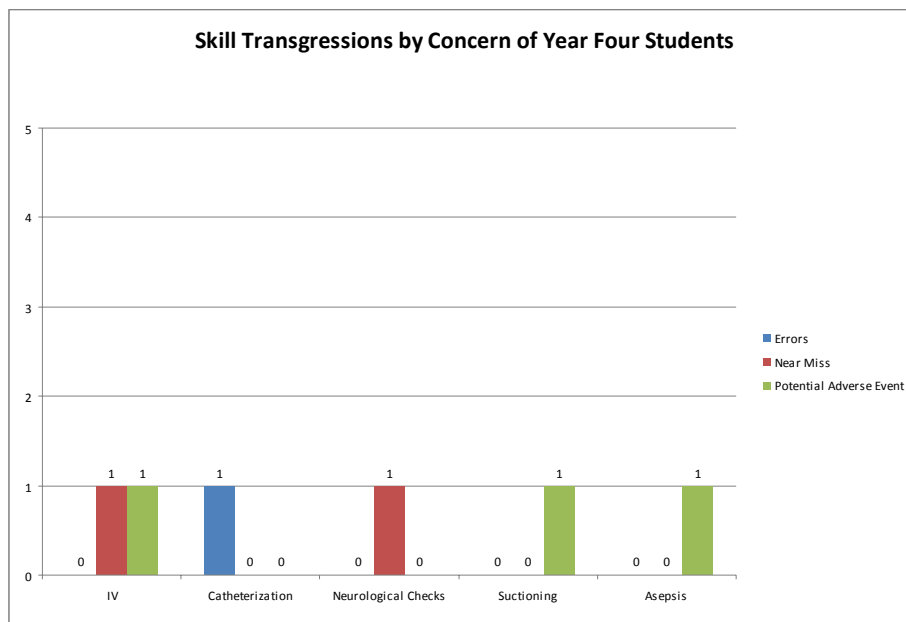
transgressions; 50% of the transgressions occurred without any interception.

This theme accounts for five different kinds of skill application concerns: Intravenous, urinary catheterization, neurological checks, suctioning, and asepsis. Inadequate intravenous skill accounted for two (n=2) of the six transgressions; there was one occurrence each for the remaining skills (see Table 1.25).

Table 1.25: Types of Inadequate/Inappropriate Skill Applications and Transgression Type.

▪ Intravenous (n=2); NM, PAE
▪ Urinary Catheterization (n=1); E
▪ Neurological Checks (n=1); NM
▪ Suctioning (n=1); PAE
▪ Asepsis (n=1); PAE

Chart 1.37: Inadequate/Inappropriate Skill Transgressions by Area of Concern



ii. Inadequate Skill Transgressions: Gender and Student Status

- Although some caution regarding interpretation is warranted, in light of the small sample size, the one international student precipitated 33.33% (n=2) of the total transgressions in the area of inadequate skill application.

Table 1.26: Demographic and Number of Inadequate and/or Inappropriate Skill Application: Errors, Near Misses, and Potential Adverse Events

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Total #	Total %
Men (n=2)	0	0	1	1	16.67%
Women (n=8)	1	2	2	5	83.33%
Overall (n=10)	1	2	3	6	100%
Women (international) (n=1)	0	1	1	2	33.33%*

* Possibly an area of concern in that one international student precipitated 33.33% of all the transgressions. Given the small sample size, some caution in interpretation is warranted.

Overall, the distribution of transgressions by gender and student status was unremarkable.

iii. Inadequate Skill Transgressions: Areas of Concern

What follows is a presentation of specific examples of transgressions within each category of *Inadequate/Inappropriate Skill Application*. The examples are for illustrative purposes and thus the number of examples does not correspond to the actual number of reported transgressions.

Intravenous. One Near Miss and one Potential Adverse Event were recorded when students had difficulty with intravenous (IV) skill application. The first textual excerpt was a NM, the second a PAE.

During the administration of 3 meds, despite reminders of what was taught previously in orientation, she [student] repeatedly forgot to disconnect the

interlink from the medication syringe with the flush in it. She was reminded to do so. This is important when giving small volumes because the interlink contains about .1 ml and one of the meds she was administering was .25 ml. If the med is not flushed through the interlink, a significant portion of the dosage will not be administered (P-49,A28,F).

On [certain date] the IV was left open. She [student] was helping a nurse on the adult side of the ward. She changed the IV for the patient, then opened the clamp to reset the drip-rate, got distracted and did not reset the drip-rate. This was a post operative patient. No harm to patient was incurred. Student was told not to report to the ward for [certain date] shift because of unsafe practice (P-57,A-24,F).

Urinary Catheterization. N=1 Error was precipitated by the following female student.

She has been inconsistent in her performance of psychomotor skills indicating a lack of preparation and review in this area (i.e., urinary catheterization)(P-59,A-23,F).

Neurological Checks. A female international student lacked this skill and precipitated one PAE.

Stated she [student] knew how to do Neurochecks, but did not complete them on a patient that needed them done. Preceptor had to do them instead (P55,A-33,F).

Suctioning. A student precipitated a PAE when she required assistance with the skill of suctioning a palliative (child) patient and did not seek help within a reasonable time frame.

When working a night shift with another registered nurse, a palliative patient (child) required suctioning. According to the RN, it took 10 minutes before the child was suctioned by the RN. You sought assistance correctly by identifying that you required assistance with the skill, but help should have been received sooner. Assistance was required faster because the patient's airway (ABC) was compromised (P-51,A-24,F).

Asepsis. An international student precipitated a PAE regarding asepsis.

Needs constant supervision with dressing changes. Unable to know what to do next and needs lots of prompting. Breaks sterile field often (P-55,A-33,F,I).

C. Assessment, Reporting, and Recording Transgressions

i. Assessment, Reporting, and Recording Transgressions: Classification

A third and final theme is *Assessment and Recording Transgressions*. Students displayed limitations with respect to assessments and understanding the implications of their assessments. Year Four students precipitated five (n=5) transgressions; Errors (n=2) and PAEs (n=3). There were no NMs or AEs in the dataset. These five transgressions are identified in Table 1.27.

Chart 1.38: Assessment, Reporting, and Recording Transgressions: Year Four Students

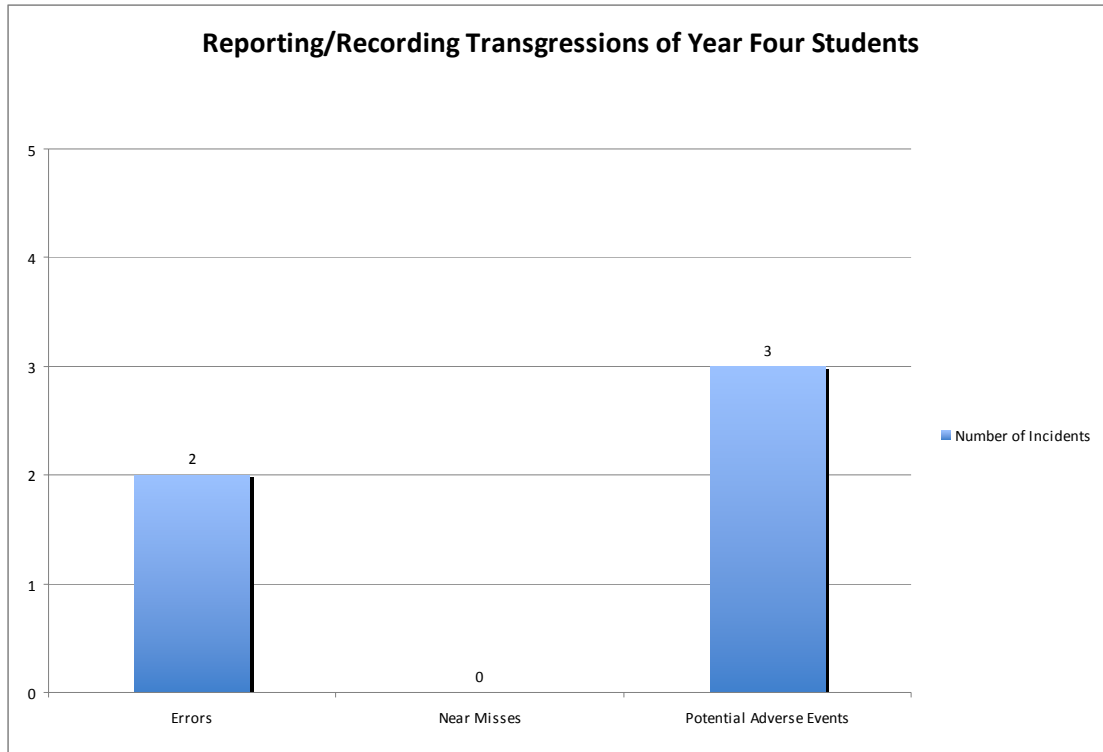
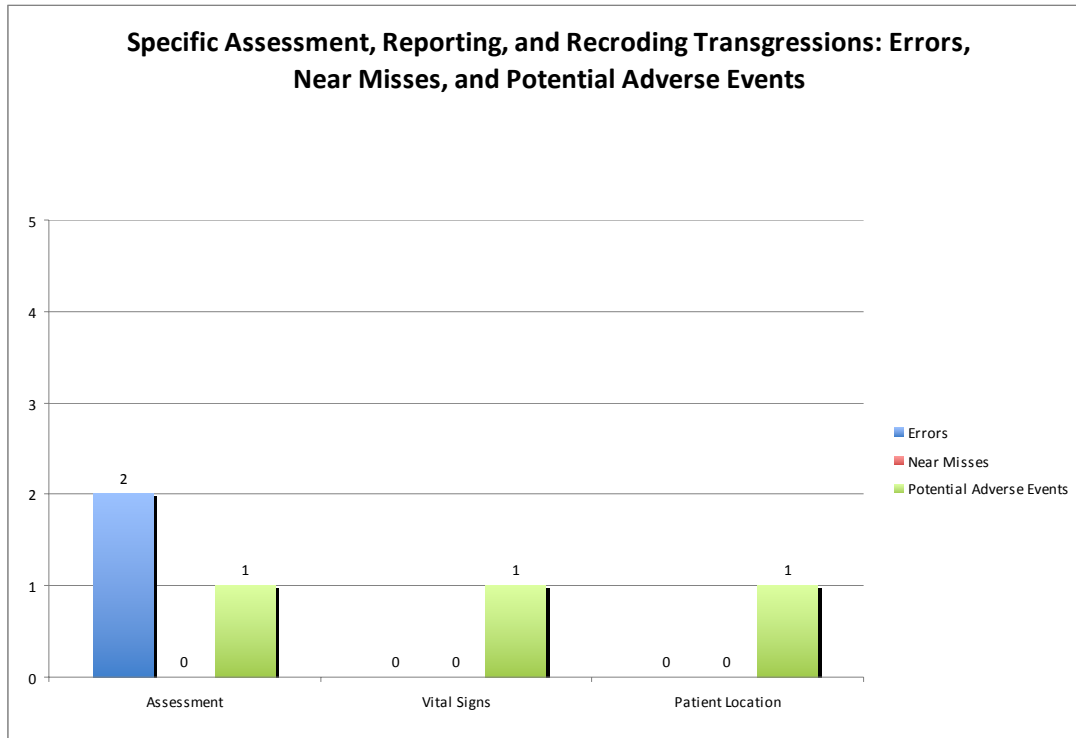


Table 1.27: Assessment, Reporting, and Recording Transgressions

Specific Transgression Type: Assessment, Reporting, and Recording Transgressions
Inadequate assessment: Patient discharge; physical assessment regarding patient with chronic disease conditions; Errors (n=2)
Assessing and reporting chest pain; PAE (n=1)
Vital sign recording; PAE (n=1)
Whereabouts of a patient; PAE (n=1)

Chart 1.39: Specific Assessment, Reporting, and Recording Transgressions: Errors and Potential Adverse Events



Students had difficulty conducting assessments on patients (Errors; n=2; PAE; n=1). Furthermore, they did not understand (i) what and how to assess; and, (ii) the importance or “place” of the assessment given the patient’s condition or situation. Two students also failed to record pertinent/required data regarding

their patients, i.e., vital signs (PAE; n=1) and the whereabouts and estimated return time of a patient out on a day pass (PAE; n=1).

ii. Assessment, Reporting and Recording Transgressions: Gender and Student

Status

- While the sample size is small, and caution is thusly warranted with respect to interpreting the findings, males (20% of the sample; n=2) precipitated 40% of the assessment, reporting, and recording transgressions.
- The male nursing students precipitated only one kind of transgression: PAEs. Male students were also responsible for two-thirds of the PAE transgressions in this category.

Males accounted for 40.0% (n=2) and females 60.0% (n=3) of the total transgressions. None of the transgressions were precipitated by international students. Demographic and student status data is cross referenced with the number of transgressions in Table 1.28.

Table 1.28: Assessment, Reporting, and Recording Transgressions by Gender and Student Status: Errors, Near Misses, and Potential Adverse Events

Demographic	Error (E)	Near Miss (NM)	Potential Adverse Event (PAE)	Total #	Total %
Men (n=2)	0	0	2*	2	40%*
Women (n=8)	2	0	1	3	60%
Overall (n=10)	2	0	3	5	100%
Women (international) (n=1) #	0	0	0	0	N/A

* Areas of concern, i.e., males (20% of the sample; n=2) precipitated 40% (n=2) of the transgressions; PAEs were the only type of transgression precipitated by male nursing students. Some caution in interpretation is warranted in light of the small sample size.
 # There were no male international students in the Year Four transgressions sample.

iii. Assessment, Reporting, and Recording: Areas of Concern

What follows is a presentation of specific examples of incidents within each category of *Assessment, Reporting, and Recording*. The examples are for illustrative purposes and thus the number of examples does not correspond to the actual number of reported transgressions.

Assessment. Errors (n=2) and PAE (n=1). In the following example of an Error, the student had difficulty deciding what to assess prior to a patient's discharge.

Had difficulty deciding what to assess prior to discharging a client (P-53, A-45, F).

The PAE was much more serious. The student observed and assessed her patient as having chest pain. She failed to report this finding to her preceptor or take any other action that would have alerted the nursing staff to the patient's situation.

Vital Signs. For whatever reason, a student did not record the vital signs of his patients (in-patient mental health rotation); he thusly precipitated a PAE.

The staff noted that he does not take the patient's vital signs—which are recorded on the Kardex, “Vitals OD.” He asked his nurse why they had to be done (P-62, A-27, M).

Whereabouts of a Patient. In this example of a PAE, the student failed to report or record important information about one of his patients, who was on a “day pass” from an in-patient mental health unit.

One of his patients was on a pass and he was unaware of the length of the pass and the time of his [patient's] expected return. He had not charted on this (P-62, A-27, M).

IV. Year Four: Remediation and Rehabilitation

Remediation and rehabilitation of Year Four students revealed two themes. The first theme focused on remedial activities that were *Student-Centered*, i.e. activities and assignments for which students were responsible for completing. This theme was made up of three categories. Two of them were previously seen in the Year Three section on remediation and rehabilitation: seeking resources; and increasing communication and contact with supervisors. The third category, engaging in reflective and organizational exercises, increased for Year Four students. This defined category was associated with a lack of organizational abilities--and likely surfaced given that Year Four nursing students had an increased patient load compared to the Year Three students. This intensified the need for well-organized nursing care.

Another change from Year Three *Student-Centered* remediation and rehabilitation activities concerned the number of activities assigned to each student. While previously one activity may have been sufficient to guide student behaviour, most Year Four students were assigned multiple and concurrent remediation activities. That Year Four students are closer to finishing their program may have increased the intensity of these recommended activities. Of the thirteen Year Four students assigned remediation/rehabilitation activities, twelve of them (92.31%) had to complete multiple activities in relation to their practice.

The second theme consisted of activities that were *Clinical Instructor-Centered* and involved the instructors providing additional supervision and feedback to the students. This theme varied from that of remediation in Year Three in two ways. The most notable change was the inclusion of clinical instructors, preceptors¹⁷, and academic/faculty advisors as Year Four students' supervisors, instead of support from the clinical instructor alone. Secondly, this theme was much less developed than in Year Three. One possible reason could be that as Year Four students, it was assumed that they should take on more responsibility for their learning when compared to their Year Three counterparts. As such, many of the tasks that were previously instructor-centered shifted to become student-centered. The number of categories in this area consequently decreased from two to one.

Student-Centered: Remediation and Rehabilitation Activities

Student-Centered activities consisted of three categories as listed in Figure 1.17.

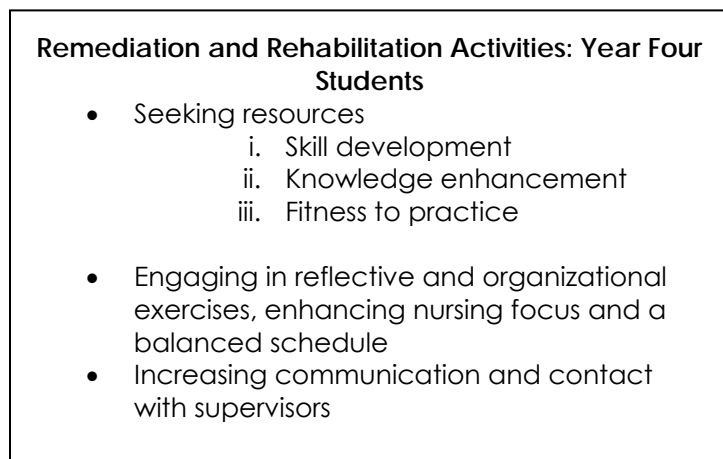


Figure 1.17: Student-Centered Remediation Activities

¹⁷ Year Three students were exclusively supervised by CIs. In Year Four, the first half of the year involved CIs. During the "Senior Practicum," which entails clinical consolidation, students were supervised by preceptors. One student is supervised by her/his preceptor. These are registered nurses (staff nurses) who assume supervisory responsibilities for these nursing students. They are not employed by the Nursing Program. Preceptors have access to the course leader, should they have any concerns or issues related to their senior practicum students.

Seeking Resources. This rehabilitation was established in the event that a student was struggling in a specific area and required further knowledge. The student was consequently directed to support in the area of his/her deficiency including; resources for skill development, knowledge enhancement, and fitness to practice. Of note is that several students were directed to seek resources in multiple areas, or to utilize multiple supports in one area. Thus, the number of students is not proportional to the number of remediation activities, i.e. ten students were required to complete eighteen activities.

(a) Skills Resources. Many students were directed to the skills lab to improve or relearn certain clinical competencies. Out of the eight activities requiring redirection to the skills lab, 37.5% (n=3) were related to medication administration. This number is about half of the medication-related skills lab activities assigned in Year Three (62.5%, n=5).

You will then attend the Skills Lab to strengthen your ability to execute the preparation and administration of medications correctly. Practice in the lab will include realistic clinical scenarios. This is to be completed prior to returning to the clinical area (P49, A28, F).

You will review and practice administering IM and IV medications in the skills lab (P59, A23, F).

Another area of concern for Year Four students was charting/documentation, which contributed 25% (n=2) of skills lab objectives.

Practice charting skills on your own time and during clinical (P51, A24, F).

Utilize all available resources (ex. preceptor, staff, *policy and procedure* manual, texts, library, etc.) in order to enhance assessments/documentation (P58, A28, F).

Finally, the remaining 37.5% (n=3) activities in seeking skills resources was dedicated to "other" skills, including basic skills, such as catheterization and communication skills.

You must practice in skills lab to improve dexterity. Especially for catheterizations, drawing up of medications, and dressing changes (P55, A33, F, I).

You will arrange for an appointment as soon as possible with to discuss strategies for dealing with communication issues (P63, A26, F).

(b) Knowledge Resources. Among Year Four students, the number of knowledge development activities was equal to skills development. Eight activities related to textual or knowledge-based resources were assigned to students. The knowledge deficits observed varied from lack of confidence with patient assessment and data analysis, to not knowing pertinent information regarding medications.

Be prepared by reviewing necessary theory to ensure accurate and appropriate assessment, analysis, action plan, and clinical judgments in the care of assigned clients (P56, A30, F).

You will determine frequently administered medications in consultation with your preceptor and make review notes in respect to indications, side effects, and contradictions of medications, and indicate any special consideration for their use in the ER [Emergency Room] (P59, A23, F).

These supplemental knowledge resources served to build a foundation for safe practice. This theme exhibited an increase from that of Year Three students, where only four activities were assigned.

(c) Fitness to Practice. Only one student was given instruction regarding personal issues that interfered with her practice. Compared to Year Three students, where the main concern was anxiety and stress, the issue for this Year Four student was one of time management and obtaining sufficient sleep prior to clinical.

You must have your sleep issues fully investigated and will not be able to do night shifts. Eight-hour shifts would be maximum.... work on confidence and independence, falling asleep (P55, A33, F, I).

Engaging in reflective and organizational exercises. Concerns with the organization of nursing care was a recurrent theme for Year Four students. As students nearing the end of the nursing program, the expectations regarding autonomy and prioritization of nursing interventions were paramount. Eight Year Four nursing students were instructed to complete 15 activities that aided them in their daily routines. These activities ranged from carrying out written exercises, to increased critical thinking in the practice setting.

Prior to your next shift, review your maintenance theory notes to assist you in the identification of nursing priorities for your patients. Complete the following assignment in point form and submit to your Faculty Advisor (P50, A26, F).

Start looking at the entire patient and realizing what to do for that patient, i.e. when a patient is in pain or nauseated (P55, A33, F, I).

You will describe in writing on or before April 6 one difficult/unexpected situation that you dealt with successfully. What did you do? What was the outcome? How did you feel? (P63, A26, F)

Managing an increased patient load was an important developmental milestone for Year Four students. Some students struggled in this regard.

Effective February 15, decrease your patient load to a maximum of three patients on the day shift and five on the night shift until the end of February of the first week in March. At that time you and your preceptor will evaluate your readiness and ability to increase your patient load by one to meet the course requirements of 75-100% workload by the end of your practicum (P54, A36, M).

You will appear more focused to your clinical practice. You will have a quest for learning. You will be able to care for approximately four patients (pediatric) independently (on day shift) (P51, A24, F).

These activities assisted students to improve their critical thinking, reflect on their practice, and the organization of their nursing care. Furthermore they helped re-focus and gradually ease students into caring for a full patient load, while simultaneously maintaining quality patient care.

Increasing Communication and Contact with Supervisors. As previously noted, guidance for Year Four students extended from relying solely on the clinical instructor, to the inclusion of the preceptor, and/or the academic/faculty advisor. Initiative on the part of the student was especially emphasized for Year Four students. With the exception of three cases, it was the students' responsibility to seek assistance and increased contact with their preceptors. Reasons for increasing this contact were varied. A general list including supportive textual excerpts follows in Table 1.29.

Table 1.29: Concerns leading to increased student communication with instructors

Concern	Participant(s)	Supportive Data
General debrief/ feedback	P50, P51, P52, P54, P58, P62, P63 (n=7)	<p>For each shift of work, during the course of this clinical learning contract, you will initiate a debriefing with your preceptor (at a suitable time during or after the shift). During this debriefing you should consider together what went well, what didn't, <u>how you're feeling about that shift</u> and the preceptor's suggestions for improvement (P52, A35, F).</p> <p>Make contact twice per week with your faculty advisor to inform her of your progress and the areas you need to further develop. Request verbal feedback from your preceptor daily (P51, A24, F).</p>
Organization/ Prioritizing Care	P50, P52, P56, P59, P60, P62 (n=6)	<p>Prior to our next shift, review your relevant theory notes/textbooks, etc. to assist you in the identification of nursing priorities for your patients as possible. Once priorities are identified after report, discuss with preceptor to ensure appropriate priorities are addressed (P52, A35, F).</p> <p>Every morning of a clinical day, meet with myself to discuss your plans for the day. This includes reviewing your nursing care plan, discussion of medications, and review of your patients' diagnoses (P62, A27, M).</p>
Medication	P54, P56, P62 (n=3)	<p>Continue to have all narcotics double checked prior to administration (P54, A36, M).</p> <p>Review prepared medication orders with the preceptor prior to actually administering them. Provide the preceptor with written accounts of any collection of information from appropriate sources, pertaining to drug interactions and issues of compatibility (P56, A30, F).</p>
Documentation	P50, P51 (n=2)	<p>Your pocket notes should be reviewed with your preceptor during the shift and some examples shared and reviewed with your advisor. These notes should be used as a reference to ensure complete documentation (P50, A26, F).</p>
Basic Skills	P49, P55 (n=2)	<p>You must tell your preceptor when you are not comfortable with performing a skill. Never will you just do the skill (P55, A33, F, I).</p>

Feedback and organization/prioritizing care were the main reasons for increasing contact with preceptors. This rehabilitative strategy allowed for closer surveillance and a strengthened the student-preceptor relationship. Moreover, the strategy augmented overall support for students who were not demonstrating growth with respect to their practice.

Instructor-Centered: Remediation and Rehabilitation Activities

Instructor-centered activities consisted of one category as listed in Figure 1.18.

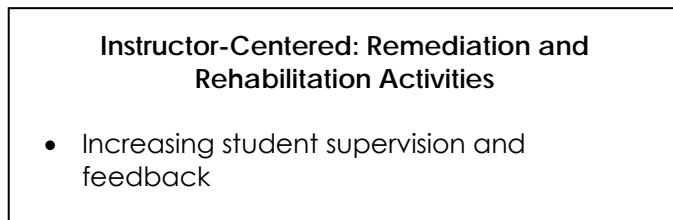


Figure 1.18: Instructor-centered remediation activities

Clinical instructors, preceptors, and clinical course leaders assisted students in their development and growth within the practice setting. While Year Three clinical instructors and preceptors provided feedback and guidance in areas such as concept review and medication administration, the onus fell on the Year Four students to actively engage in remediation. Consequently, only three instructor-related activities were identified; two of these follow:

You will be evaluated by your preceptor at approximately week 11 and week 12 to assess if you reached the goals listed below. Your faculty advisor will attend this meeting (P51, A24, F).

Preceptor and student will meet daily at the end of each day to discuss the positive and areas of improvement (P58, A22, F).

Rehabilitation and remedial activities developed by the instructors and preceptors fostered growth in nursing practice. These activities were thorough, interactive, and allowed for the demonstration of mutual accountability. In addition, students were apprised of their practice concerns and growth in a transparent manner.

Year Three and Year Four Students Who Failed the Clinical Course

Three students in Year Three and three students in Year Four failed their clinical courses. The demographics are presented below in Table 1.30.

Table 1.30: Year Three and Four Students Who Failed Clinical

Year	Grade	Gender	Age	International (yes/no)	Participant #
3	D	Male	39	Yes	15
3	F	Male	41	No	46
3	F	Female	21	No	42
4	D	Female	26	No	50
4	F	Female	45	No	53
4	F	Male	27	No	62

Students failed for a variety of reasons, however, patterns emerged that explained this outcome: a lack of professional attitude, inadequate communication, poor organization of nursing care, an inability to think critically, inadequate data collection/assessment/charting, knowledge deficits, and medication transgressions (see Figure 1.19). All but one student, the 21 year old Year Three female, were responsible for some type of transgression. The 21 year old female failed in light of a total of 26 identified issues with respect to nursing care. This particular student was also referred to counseling services at the

university for assistance with her stress. The remaining students did not demonstrate adequate growth over time within the clinical context, and this lack of progress (for various reasons) was noted in all six cases.

Figure 1.19

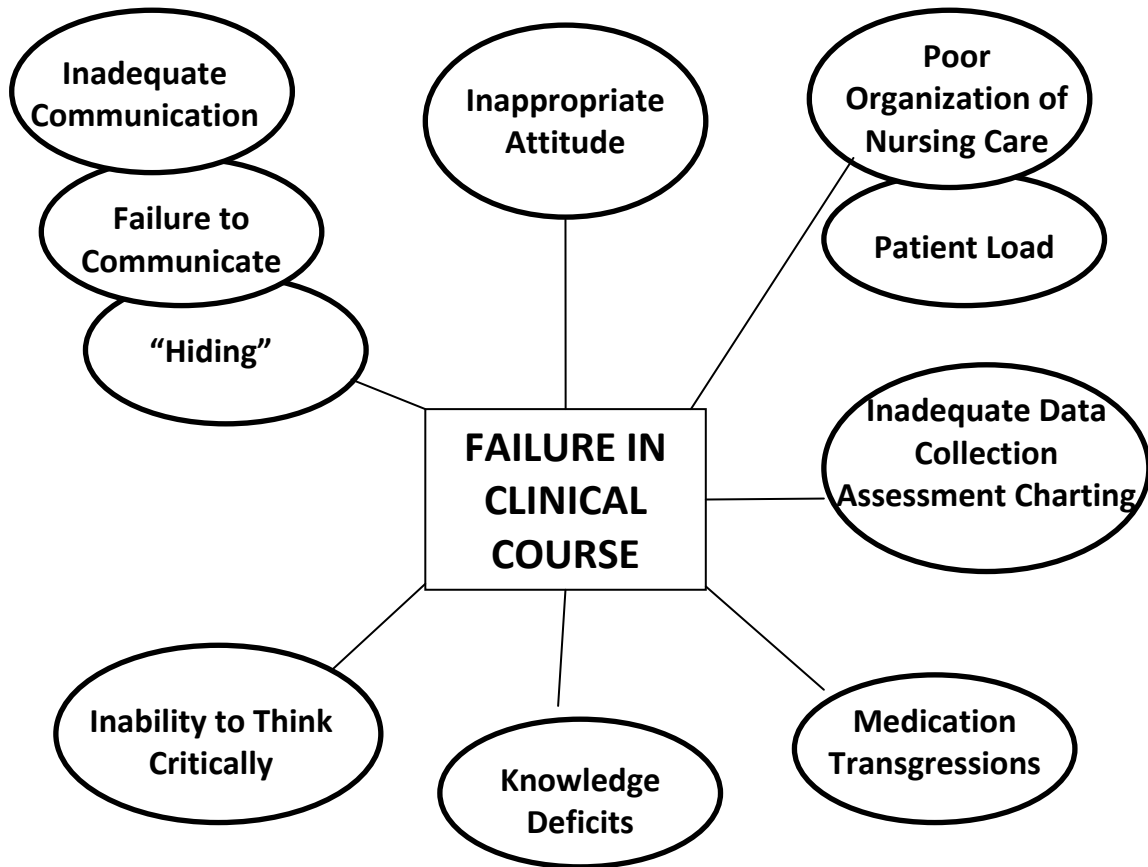


Figure 1.19: Factors Contributing to Failures Among Year Three and Year Four Students

Three of the six students displayed an unprofessional attitude in the practice setting. These students displayed a “defensive attitude” (P-42), did not accept responsibility for their own learning and blamed others for their own actions (P-15), or were viewed as “hiding out” to avoid their clinical instructor (P-46).

Inadequate and/or ineffective communication was an issue for five of the six students who failed. Students were deficient regarding effectively communicating with their preceptor or clinical instructor, establishing priority nursing care, and adequately anticipating and responding to patient needs. The textual excerpt below provides such an example.

He is having difficulty responding to patient cues. This is in part due to his inability to anticipate patient needs. After repositioning his client, the staff did a check on her and found her legs to be in spasm. To date, there has been no demonstration that he is beginning to attain competency in the implementation of a complex level of communication skills (P-62, A-27,M).

Poor organization of nursing care was a factor in the failure of several students. Patient load presented an issue in one case where the student displayed a consistent lack of organization in caring for four patients in a reasonable time frame (P-53). Another student demonstrated a lack of organization in both planning and anticipating his patient's needs such as replacing soaker pads and helping with peeling boiled eggs (P-62). Students were challenged with respect to organizing their nursing care priorities and making appropriate decisions. As previously identified, poor organizing/planning was instrumental in the failure of the 21 year old female Year Three student.

An inability to think critically contributed to the failure of several students. The Year Three 39 year old male International student was noted as "displaying a lack of critical thinking contributing to the possibility of unsafe practice." The Year Four 45 year old female student also demonstrated a lack of critical

thinking. She was unable to adapt her nursing care to changing patient situations.

Knowledge deficits, and the inability to demonstrate critical thinking, also contributed to the majority of the student failures. Students were unable to link theoretical understanding with practical application. For example, the 45 year old female Year Four student demonstrated a lack of knowledge with respect to laboratory tests:

[Student was] not consistently retrieving lab test results from the computer and not demonstrating awareness of normal ranges. For example, she did not recognize K+ of 6.7 as being high (P-53, A-45, F).

Medication transgressions, precipitated by a lack of knowledge and critical thinking, contributed to the failure of four of the six students. Examples included such events as administering an incorrect medication dose, administering medication at the wrong time, and unsafe preparation of medication. The following textual excerpt illustrates this issue.

Week #8 in clinical. Preparing to give patient IV Morphine at 0820 under supervision of the unit nurse, you had taken IV Demerol out of the narcotics drawer instead of Morphine. The unit nurse corrected you and then you continued your preparation of the medication. Incorrect medication from the narcotics drawer equals Unsafe Nursing Care (P-15, A-39, M, I).

Other examples include a student drawing up and administering Morphine 10mg IV when the MARS [Medication Administration Record Sheet] clearly read, "Morphine 2.5 to 5mg IV." Another student administered two times the ordered dose of Gravol medication to her patient. Two students did not adequately monitor IV medication administration, and one student did not know the correct

time to change a Fentanyl Patch even though it was clearly stated on the MARS sheet.

Inadequate data collection, assessment and/or charting were issues for all students who failed. Examples included such things as not recording the whereabouts of a patient who had temporarily left the unit, not charting a patient's vital signs, and not completing a respiratory assessment on a patient. For the 41 year old male Year Three student, his inability to consistently assess his patient's condition resulted in a transgression:

On [certain date] CI asked if he had done his ACCU-check. He [student] replied, "I forgot." He did not do the vital signs for that patient that day as well. CI spoke with him about the importance of completing these tasks and the next day, he again had to be reminded to do the vital signs, but he did do the ACCU-check. This is unsafe, inconsistent practice (P-46,A-41,M).

The 39 year old male International student was also deficient in his assessment skills and precipitated several medication errors. The 45 year old female Year Four student was not cognizant of the importance of detailed assessments and charting, and failed to make the observation of the cool discoloured feet of her patient who presented with diabetes, chronic renal failure, and congestive heart failure. This student also needed guidance to specify a patient's chest pain and to describe her patient's wound after a dressing change.

In conclusion, students were offered remediation and rehabilitation activities that focused on all the aforementioned factors. Although these supportive activities did not prevent the students from failing, concerted efforts were made to assist

the students grow and develop within the practice setting. Clinical instructors and preceptors, under the auspices of the clinical learning contracts and clinical course leaders, identified how students were to engage in successful clinical practice. Students were supported to engage in critical thinking, to learn how to better manage their time, to strive toward a full patient load, and to develop a more professional self. Students were also encouraged and supported to establish a positive therapeutic relationship with patients and a professional working relationship with unit staff. Activities such as going over the Five Rights of Medication Administration, learning how to properly monitor intravenous medication, and/or being supervised when administering all medications were evident in several of the students' learning contracts.

Year Three and Four students who failed demonstrated, as did the Year Two students, a constellation of concerns including a poor attitude, inadequate and/or ineffective communication, inability to organize nursing care, knowledge deficits and a lack of critical thinking. Although Year Two students were challenged with respect to data collection, Year Three and Four students who failed demonstrated more complex problems with respect to assessment, charting, and medication administration.

SECTION II: FOCUS GROUP INTERVIEWS

Section Two: Interview Data

Focus group interviews [n=10] and/or collective interviews of at least two persons were conducted by the Project Manager (Hultin) with key stakeholders (See following table). In addition, 9 individuals (education administrators, n=2; unit managers, n=6; and an agency-based risk manager) were interviewed. Thus, this data set consisted of consultation with 40 people.

Table 2.0 Number of Focus Group and Individual Interviews

Group	# Focus Groups	# Individual Interviews	Total participants
Students	2	0	7
Clinical Instructors	2	0	9
Administrators	1	2	4
Faculty	1	0	4
Unit managers	0	6	6
Staff nurses	3	0	7
Risk managers	1	1	3
Total	10	9	40

Focus Group Interview Data. Subsequent to obtaining informed consent, the interviews were digitally recorded, transcribed verbatim, and anonymous interview transcripts were created. A semi-structured interview guide was developed by the research team; questions were formulated based on the literature, existing research, and the respective experiences of the researchers. The PI, along with the two research assistants, subjected the transcripts to standard qualitative content data analysis. Consensus, in relation to the analysis and interpretation of the transcripts, was established among the PI and the two

research assistants. Findings were then shared with the research team members, whose feedback was invited.

Although the researchers were initially concerned about the relatively small numbers of nursing students, their perspectives were consistently validated in the other stakeholder interviews. Despite concerted and repeated efforts to recruit students, only 7 volunteered to be interviewed. In looking at their perspectives, it may be that students were frightened to come forward and discuss errors, mistakes, and patient safety events/concerns within their nursing program. Students characterized their nursing program, and in particular the theory/classroom component, as a *culture of fear* and not a *culture of safety*.

Overview of Findings

Findings from the focus group interviews were synthesized and summarized into the following five Tables (2.01, 2.02, 2.03, 2.04 and 2.05). Common perspectives from across the interview data set were aggregated and ranked ordered. The three highest ranked concerns from each area of concern are discussed in this section.

Participants identified patient safety risk factors, i.e., those factors placing nursing students at risk for precipitating patient safety events and/or placing patients at risk for harm. These factors centered on the following:

- Clinical instructor model;
- Concerns about students;
- Lack of preparation for practice (students); and,
- Nursing program model

Clinical Instructor Model (See Table 2.01). Most of the participants (5/7 groups) independently agreed that there are limitations associated with the CI model. Clinical instructors may be inexperienced as educators. Participants recognized that clinical instructors could be accomplished clinicians; however, concerns were raised regarding their preparation (knowledge, skills, experience) to serve as educators in the practice setting. The second ranked concern (4/7 groups) identified that the number of students per clinical instructor potentially undermined patient safety. One weak student in the group could dramatically limit the supervisory reach of the clinical instructor, and disadvantage the other students. This attenuation of supervisory reach could be further increased if the unit was subject to casualization of the nursing workforce, i.e., a lack of consistency in the presence of buddy RNs. The third cluster of concerns (suggested by 3/7 groups) pertained to (a) lack of fit between the clinical instructor's clinical expertise and the practice unit on which she/he supervised students; (b) the high turnover of clinical instructors; (c) reluctance of clinical instructors to fail students; and (d) difficulty recruiting and hiring clinical instructors.

Table 2.01: Patient Safety Risk Factors

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Concerns about the Clinical Instructor Model								
1	Clinical instructors may lack experience as educators	X	X	X	X			X
2	One clinical instructor for too many students	X	X			X	X	
3	Clinical instructors' clinical expertise may not be commensurate with nature of clinical practice on the teaching unit	X		X		X		
	High turnover of clinical instructors		X	X	X			
	Clinical instructors reluctant to fail students or write up student occurrence reports		X				X	X
	Difficulty recruiting and hiring clinical instructors, resulting in a limited selection			X	X	X		
4	Not enough guidance from clinical instructor	X					X	
	Clinical instructors are inconsistent in their approaches with students	X	X					
	Lack of communication between clinical instructors		X		X			
	Lack of communication between clinical instructors, staff, and students	X				X		
5	Lack of expertise and skill acquisition				X			
	One struggling student per clinical instructor decreases supervision for all other students					X		
	Clinical instructors inexperienced with ESL students				X			

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk manager

Based on the interview data, the strengths and limitations associated with the clinical instructor model were assembled into the following schemata (see Figure 2.00).

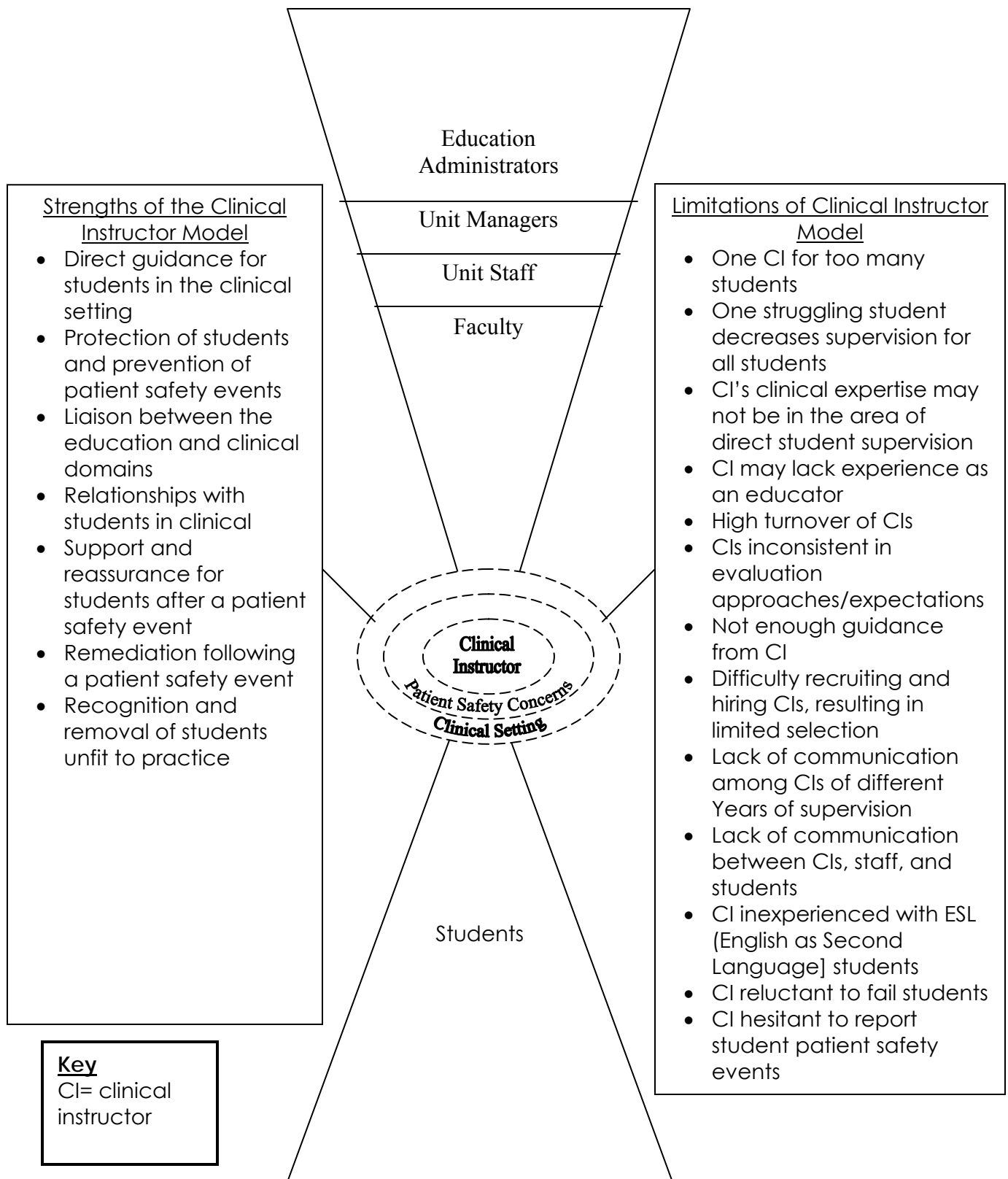


Figure 2.00: Clinical Instructor Model

Participants also imparted strengths to the CI model. However, they noted many more limitations or concerns with it. The case study data from Section One also suggest that unaddressed fault lines and fractures associated with the CI model undermine patient safety. In particular, there were 88 PAES whereby patients were placed at risk for harm.

- *In this sample and out of a total of 154 events, there were 47 Near Misses (30.52%) and 88 Potential Adverse Events/Adverse Events (57.14%). Under the auspices of the CI model, and in this particular data set, many patients were placed at risk for harm.*

Concerns about Students (See Table 2.02). With the exception of administrators, all the other participant groups (6/7) characterized students as nervous, anxious, uncertain, and fearful.

- *Although it is reasonable to expect students (nursing, medicine, pharmacy, etc.) to have some apprehension in relation to clinical experiences, the participants in this study were concerned that excessive anxiety and fear contributed to patient safety concerns among the nursing students.*

The second ranked patient safety risk factor (5/7 groups) suggested that students were operating in a culture of fear and not one of patient safety; certainly in a transition of culture from fear to safety. In addition, participants suggested that students did not understand the place of occurrence reports—and that students were frightened of repercussions if they made an error or precipitated a patient safety event. The third ranked patient safety risk factor (3/7 groups) characterized students as stressed, vulnerable, and fatigued. Students, faculty members, and staff nurses observed that students took risks because their clinical was graded (3/7 groups). Collectively, these risk factors placed students at risk for patient safety concerns.

Table 2.02: Patient Safety Risk Factor: Concerns about Students

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Concerns about Students								
1	Nervous and uncertain; fearful and high anxiety	X	X		X	X	X	X
2	Students frightened of repercussions when error occurs, do not understand limitations of occurrence reports	X			X	X	X	X
3	Students are stressed, vulnerable, and fatigued	X				X	X	
	Easy to rush practice when graded	X			X		X	
4	Careless and overconfident		X	X				
	Graded when asking questions	X					X	
	Students' inability to refuse when nurses expect tasks of them that they are unprepared to perform		X					X
5	Frightened into doing things	X						
	If technically derived, assumed errorless		X					

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk managers

Lack of Preparation for Practice (See Table 2.03). The majority of participants (5/7 groups; students, clinical instructors, faculty members, unit managers, and staff nurses) observed that students lacked basic skill preparation. It is not uncommon for students to express this view; however, other participants voiced concern about basic skill preparation among nursing students.

The second risk factor consisted of four factors. The first of these factors, *Limited time and access to the skills lab*, was inconclusive. Three groups (students, clinical instructors, and staff nurses) suggested that students lacked adequate access to the skills lab. In contrast, administrators and faculty members indicated that students did have adequate access to the skills lab. That certain

equipment was available on units, but missing from the skills lab, was noted by three groups (students, unit managers, and staff nurses).

- *The absence of a formal, systematized feedback loop between the education sector and the clinical sectors, with respect to clinical transgressions was of concern to three groups; clinical instructors, unit managers, and the risk managers.*

The 4th patient safety factor in this constellation of factors concerned the lack of critical thinking among nursing students. Ranked third by 2/7 groups were two factors; limited time spent by students in the assessment lab, and faculty members were removed or distant from clinical.

- *Collectively, these factors spoke to students' lack of preparation for practice as a patient safety risk factor.*

Table 2.03: Patient Safety Risk Factor: Lack of Preparation for Practice

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Lack of Preparation for Practice								
1	Lack of basic skills	X	X		X	X	X	
2	Limited time and access to skills lab	X	X	*	*		X	
	Missing equipment in the skills lab	X				X	X	
	Educational sector does not follow-up on students' clinical experience to improve preparation		X			X		X
	Lack of critical thinking		X	X			X	
3	Lack of time in assessment lab	X					X	
	Faculty are out of touch with clinical practice	X			X			
4	Unrealistic lab setting	X		*	*			
	Students supervising students in the skills lab		X					

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk manager

* Contrary to expressed concerns, administrators and faculty believed there was both ample time and access to the skills lab. Furthermore, they believed it was a good simulation of the clinical setting.

Concerns about the Nursing Program Model (See Table 2.04).]. Participants (6/7 groups; students, clinical instructors, faculty, unit managers, staff nurses, and risk managers) observed that the transition from skills lab to the realities of the clinical setting was not smooth. The lab was characterized as quiet and calm; students could focus on one particular skill. In contrast, students encountered the “hurly burly” of the clinical unit while trying to apply multiple and concurrent skills, organize their care, and discern nursing care priorities. Participants also suggested that there was a discrepancy between how skills were taught in the skills lab and how they were enacted in the practice context.

- *The second ranked patient safety risk factor concerned inadequate clinical experience for students (5/7 groups; students, clinical instructors, faculty members, staff nurses, and risk managers).*
- *The second factor in this same cluster addressed the concern that clinical staff were not aware of the nursing program's curriculum and the students' learning expectations while on the unit (5/7 groups; students, clinical instructors, faculty members, unit managers, and staff nurses).*
- *The third ranked patient safety risk factor centered on patient safety proper—and its lack of formal development within the curriculum (4/7 groups; administrators, faculty members, staff nurses, and risk managers).*

Table 2.04: Patient Safety Risk Factor: Concerns about the Nursing Program Model

Rank	Patient Safety Risk Factor	Group						
		S	CI	A	F	UM	RN	RM
Concerns about the Nursing Program Model								
1	Inconsistent transition from skills lab to reality; discrepancies in skill application	X	X		X	X	X	X
2	Not enough clinical experience for students	X	X		X		X	X
	Clinical staff do not know nursing program curriculum/expectations	X	X		X	X	X	
3	Patient safety concepts not developed in a distinctive way			X	X		X	X
4	Limited application of communication			X	X			X
	Day-to-day data are buried within the clinical system			X		X		X
	Staff on unit may not be supportive of students	X				X	X	
	Perceived culture of blame within the nursing program	X			X	X		
5	Lack of clarity/consistency regarding students and occurrence reports		X			X		
6	High turnover in course leaders		X					
	Lengthy delay between learning a skill and applying it	X						
	Short clinical rotations and rapid evaluations foster a culture of blame				X			

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk manager

Perceived Patient Safety Concerns. Participants identified patient safety concerns among the nursing students. Of interest is that the case study data confirm that medication was the most common area where clinical transgressions occurred (56.49%; n=87). The category *Other* (data collection, prioritizing patient care, follow-through, data assessment, reporting, and recording) constituted the second most common area of transgressions among the case studies (23.38%; n=36). This paralleled the participants' third ranked patient safety concern (documentation, charting, and communication). Inadequate skill application (the third most common thematic area in the

clinical learning contracts; 20.13%, n=31) was ranked first by the participants. Suffice to note that all of the perceived patient safety concerns were found in the case studies (as transgressions, or as nursing care concerns). Interestingly, the exception was “falls.” None of the clinical learning contracts included any transgressions related to patient falls.

Table 2.05: Rank Ordered Perceived Patient Safety Concerns

Rank	Perceived Patient Safety Concerns	Group						
		S	CI	A	F	UM	RN	RM
1	Medication	X	X	X	X		X	
	Lack of Basic Skills		X	X	X	X	X	
2	Judgment/knowledge deficit		X	X		X		X
3	Documentation/Charting		X				X	X
	Communication			X	X			X
4	Falls					X		
	Asepsis		X					

Key

S=students, CI=clinical instructors, A=administrators, F=faculty, UM=unit managers, RN=registered nurses, RM=risk managers

A Perspective on Patient Safety – Nursing Students

Two focus groups (n=7) were conducted to gain insight into the concept of patient safety from the perspective of nursing students. Despite concerted and repeated efforts to recruit undergraduate students, only seven students agreed to be interviewed about patient safety. Students were enrolled in Years Two, Three, and Four. This small sample may be explained, in part, by the students' anxiety and apprehension associated with the topic. When asked what they associated with patient safety, students described it as “threatening” and “scary.” Although the sample size is small, many of the students' perspectives were subsequently validated by participants in the other focus groups, e.g. clinical instructors, faculty, and staff nurses. This data triangulation contributed to the trustworthiness (validity) of the study findings.

Overall, the students identified patient safety solely at the level of the individual patient, for example, following the “rights” of medication administration. Students spoke about ensuring the safe care of their patients. They appeared unaware, however, of patient safety from a systems perspective. They considered their exposure to patient safety concepts as lacking within the nursing curriculum. Students voiced that their lack of clinical experience and preparation precipitated fear and anxiety – such that they felt “at risk” for making errors. Other risk factors affecting their performance in the clinical setting were also identified, such as lack of guidance and limited skills lab time. Finally, the students reflected on their nursing program in terms of patient safety and identified supports regarding patient safety at the individual and curriculum

levels. The perspectives collected from the two groups were qualitatively analyzed i.e., underwent open coding and thematic analysis and three underlying themes were delineated as presented in Figure 2.01.

Figure 2.01: Underlying themes arising from nursing student focus group data

- I) Conceptualizing Patient Safety from an Individual and Systems Perspective**
 - Focus on the safety of individual patients
 - Systems based factors placing students at risk:
 - Lack of standardization regarding patient safety instruction by clinical instructors
 - Patient safety not stressed in the curriculum
 - Difficulty approaching unit staff
- II) Exposure to Patient Safety Concepts**
 - Students' recognition of patient safety terms
 - Limited theoretical and clinical exposure to patient safety concepts
- III) Factors Placing Students at Risk and Factors Supporting Students**
 - Inadequate clinical guidance
 - Limitations associated with classes and labs
 - Lack of time in assessment class
 - Limited time in and access to the skills lab
 - Unrealistic lab setting
 - Missing equipment
 - Lack of preparation for practice
 - Patient safety as an intimidating threat

I. Conceptualizing Patient Safety from an Individual and Systems Perspective

Within the theme of conceptualizing patient safety, the students consistently recognized patient safety uniquely within the dimension of interaction with an individual patient. Awareness of a systems perspective was lacking. When asked to define the term 'patient safety', students provided specific instances of proper body mechanics, medication issues, and math calculations. They also noted that patient safety entailed prevention. Two students agreed:

Patient safety to me is making sure that I can prevent an event from happening to a patient. For example, we make sure the rails are up if they are ordered so that they prevent the fall of an elderly patient. A good indicator of patient safety is by preventing the fall (P1 & P2, FG2, p. 1).¹⁸

Despite the lack of recognition of the systems perspective, the students did identify curriculum-based factors that placed them at risk for making errors.

These factors manifested themselves in the following three ways:

(a) *Lack of standardization regarding patient safety instruction by clinical instructors;*

I think there are some good ones and there are not so good ones.... Some of them have really shown me to be safe for myself and be safe for my patient (P1, FG2, p. 33).

(b) *Patient safety was not stressed throughout the curriculum;*

Certain things that are crucial to patient safety are not emphasized, as they probably should be (P2, FG2, p. 12).

(c) *Difficulty approaching unit staff;*

I find it's very hard as a nursing student to approach a health care aid.... They're very intimidating.... Some answer the questions, then there are the ones who don't want to tell me, or they say go look it up or go ask your clinical instructor (P2, FG2, p. 36).

¹⁸ P= participant, FG= focus group, p.= page number

To foster a systems perspective on patient safety, the students made the following recommendations:

- Evaluate the whole nursing program including theory and clinical domains;
- Use “mistakes” in the clinical setting to instruct students about patient safety;
- Create a learning environment in which students feel safe to ask questions;
- Create an open atmosphere to discuss patient safety, characterized by problem solving rather than laying blame; and,
- Improve student confidence through more clinical preparation and exposure to patient safety.

II. Exposure to Patient Safety Concepts

All participating students indicated insufficient exposure to patient safety in both the theoretical and practical domains. They also expressed concern about the lack of clinical practice time. These two limitations were manifested in their discomfort when performing certain procedures, their anxiety when approaching an unknown clinical situation, and their inability to identify specific courses that included patient safety. Furthermore, the students were asked to define a series of common words or phrases arising from the systems aspect of patient safety. Their ability to recognize these terms is presented in Table 2.06.

Table 2.06: Percentage of recognition of patient safety terms

Term	Percentage Recognition
"Root cause analysis"	0
"Systems"	0
"Adverse events, near misses and critical incidents"	71.43% (n=5)
"Culture of safety"	57.14 (n=4)

The students identified the main deficiency regarding patient safety was within the theoretical portion of the program.

Intro to Nursing, we definitely looked at advocacy for patients, but I'm trying to think if there was any other theoretical basis in the first or second year. Law and Ethics we did learn some patient safety issues again (P1, FG2, p.9).

We need more courses on patient safety and our well-being. Taking electives could be better used on patient safety courses (P2, FG1, p.5).

It wasn't termed patient safety, but if you look at patient safety on the whole, it was probably touched in through ethics or confidentiality. So, yeah, Intro to Nursing, but if you want to be specific I would say skills lab in the first year (P2, FG2, p.8).

Patient safety was better addressed in the clinical practice setting. Again, the emphasis was placed on the safety and well being of individual patients, e.g. side rails up when leaving the patient's room. Patient safety was also addressed in the skills lab where students learned to incorporate safety into their practice.

One student observed:

There's not a whole lot that's really taught about patient safety. I know we're taught in class about range of movement, but nothing really until you get into your actual clinical (P2, FG2, p.1).

However, the students felt unprepared and lacked a patient safety foundation upon which to build their clinical experience.

III. Factors Placing Students at Risk and Factors Supporting Students

Students identified factors that placed them at risk. Four recurring areas were identified as problematic: inadequate clinical guidance, limitations associated with classes/labs, lack of preparation for practice, and patient safety as an intimidating threat. These categories along with perceived risk factors, and current/proposed solutions are presented in Table 2.07.

Table 2.07: Student identified risk factors and current/proposed solutions

Risk Factor	Current/Proposed Solution	
1. Inadequate Clinical Guidance		
Not enough guidance from clinical instructor	Clinical instructors to help and guide students*	
One clinical instructor for many students	Smaller clinical groups; Additional clinical instructors	
Clinical instructors are inconsistent in their approaches with students	Orientate clinical instructors so they are consistent in their approaches to teaching/learning and student evaluation in the practice setting	
Clinical instructors may not be competent	Ensure clinical instructors can teach and enjoy what they do; make the position more appealing	
Faculty out of touch with clinical practice		
Staff on unit may not be supportive of students	Relationship building with staff	
2. Limitations Associated with Classes/Labs		
Lack of time in assessment class	Increased time and skills in health assessment	
Limited time and access to skills lab	Increased access to skills lab time	
Unrealistic lab setting	Learn skills in the clinical setting	
Missing equipment in the skills lab	Obtain equipment used in clinical setting	
3. Lack of Preparation for Practice		
Skills not addressed prior to encountering them	Skills learned in tandem with clinical expectations	
Inconsistent practice in the school and workplace settings	Full orientation day to the unit	
Lengthy delay between learning a skill and applying it	More practice opportunities in the summer	
4. Patient safety as an intimidating threat		
Culture of blame within the program	Post-clinical conference debrief	Shift to culture of safety; improve confidentiality; students felt threatened about being removed from the nursing program.
Easy to rush practice when graded		
Graded when asking questions	Clinical instructors encourage questioning	
Frightened into doing things	Patient safety as a focus versus fear tactic	
Fear, high anxiety	2 hour course in patient safety in Year 2, 3, and 4	

* Current solutions in place indicated in light-grey boxes

1. Inadequate Clinical Guidance. From the perspective of the nursing students, clinical guidance was deemed sporadic and inconsistent. Students voiced

concerns regarding clinical instructor competency, inconsistency regarding teaching and evaluation approaches, and limited supervision time. Students were also concerned about the need for relationship building on the practice units.

Some clinical instructors are inconsistent in their teaching methods. Make sure clinical instructors can evaluate objectively. Listen to student complaints regarding clinical instructors (P3, FG1, p. 7).

I've witnessed many errors occurring because of the lack of time that clinical instructor is able to spend with each student (P2, FG2, p. 1).

The opportunity to ask questions was identified as being of key importance. All students agreed that clinical instructors should make themselves available for questions. One student noted a particularly difficult time when he approached his clinical instructor to ask for help.

I knew I wasn't going to be safe and I wanted to ask her about it. I pretty much felt like I was belittled and told that I was stupid because I didn't know what I was doing, whereas I had already tried looking it up before.... I really didn't appreciate the way my clinical instructor handled it (P1, FG2, p.15).

Students also identified that faculty members in the nursing program were distant from the practice context. This may have negatively affected the teaching of patient safety. Staff on the nursing unit was sometimes viewed as less supportive of students. Fostering closer relationships with the unit staff was suggested as having a positive impact on patient safety.

The faculty has lost touch with clinical practice and is more grounded in academia (P1, FG1, p. 8).

I think spending the day with a specific nurse could potentially help you out. If we get to know the ward staff more, I don't think we'd be as scared to ask questions or we wouldn't feel like we're interfering (P1, FG2, p.40).

From the students' perspective, the presence of a strong faculty member, clinical supervisor, and supportive unit staff would enable them to function to their maximum potential. One student observed the benefits derived when the clinical instructors went out of their way to support students. Students voiced the advantage of having these instructors with respect to their learning:

I think some faculty members have opened a door for us to talk to them about issues that we have. Just creating a relationship with somebody on staff here, just getting to know a teacher or someone on site with you that you are able to actually talk to (P1, FG2, p. 38).

I think some clinical instructors have been really beneficial, making themselves available, giving phone numbers, email, just to talk to them for patient safety and not judging you (P1, FG2, p. 38).

Given the importance of clinical guidance, the students indicated and proposed several solutions that could potentially reduce current risk factors. In order to increase the presence of proficient clinical instructors, the recommendation was to create a mandatory orientation. This orientation would foster consistent expectations, teaching/learning approaches, and student evaluations among the clinical instructors. While there were no suggestions on how to improve their relationship with the faculty, students requested relationship building with the unit staff to gain more support from them in the clinical setting.

2. Limitations Associated with Classes/Labs. Inadequate preparation in the classroom (theory) and limited skills lab time were viewed by students as placing them at risk with respect to patient safety. Students did not feel adequately prepared for their clinical experiences. While 100% (n=5) agreed that the skills lab had a positive impact on patient safety in the clinical setting, all students noted

that improvement was needed. In the area of classes and labs, four challenges arose:

(a) Lack of time in assessment class:

The assessment class is way too short. Much more practice is needed. In it you're very independent, so you're never sure of the accuracy (P5, FG1, p. 1).

Most of the theory is needed to prevent errors. We need more skills in the health assessment course (P1, FG1, p.5).

(b) Limited time in and access to the skills lab:

More time in skills needed. I try to double-check myself, but there is always the chance that a mistake could happen (P1, FG1, p. 3).

I didn't feel prepared at all. More practice in skills is needed, more clinical time, too. There is so much going on that the chances of error can increase because there is so much to juggle (P2, FG1, p. 3).

The theory is good, but I'm lacking hands on experience. More skills practice and more clinical time are needed (P3, FG1, p. 3).

(c) Unrealistic lab setting:

It's very difficult to focus on patient safety and patient well being when you're working on a dummy. The majority of what we do in lab is focused on doing your skills on a dummy, but then we're not working on real people (P2, FG2, p. 29).

The skills lab is not realistic, it's just going through the motions (P2, FG1, p.2).

I'm used to working on a Jake (dummy), as it's easier. Working with actual patients made the situation different. You forget the skills you learned (P5, FG1, p. 3).

(d) Missing equipment:

The skills lab are mostly taught here and either you can't use the lab equipment or it is difficult to use. Pyxis¹⁹ is needed in skills (P3, FG1, p. 1).

¹⁹ Pyxis: automated medication and supply management system

Overall, the students offered solutions that included more time, access, and emphasis placed on health assessment classes and the skills lab. Furthermore, students expressed the desire to learn skills directly within the clinical setting, or at least practice in a more realistic setting in terms of patients and equipment.

3. Lack of Preparation for Practice. Students felt their preparation for practice was problematic in three areas: skills not addressed prior to encountering them, inconsistent practice in the school and workplace settings, and the lengthy delay between learning a skill and applying it.

(a) *Skills not addressed prior to encountering them:*

Although students agreed that a theory base was provided, there were certain skills that were not addressed or emphasized. Students thus felt ill prepared when they encountered these particular skills in the work place, and yet they were expected to perform them in a satisfactory manner.

Learning to work on a central line, I had no idea what it was; we hadn't even covered it in skills. It was like nobody had even talked about it. It was our first day on the ward and she said you're going to be given a patient and you're going to have to do it on your own.... I knew that I didn't know enough to walk into the room confidently and deal with it (P1, FG2, p. 15).

We were taught very generally about patient safety. The lab did not take enough time to teach the skill (P4, FG1, p.2).

(b) *Inconsistent practice in the school and workplace settings:*

Students observed that when they were taught the appropriate skill, they found a discrepancy between how it had been demonstrated in the skills lab versus the manner in which it was practiced in the clinical setting.

What we're taught in the school and what we're taught in the hospitals is very different, and they contradict each other. I think that there needs to be a little more common ground, so that they match up. Then when you go into your clinical, you don't fall into those bad habits (P2, FG2, p.5).

(c) Lengthy delay between learning a skill and applying it:

The final problem identified by students was the length of time between skills lab sessions and the opportunity to apply these skills in practice. Several students voiced it was too long a break, and found it easy to forget what was learned in the skills lab. They also recognized their role in addressing this limitation, i.e. refresh their learning of the skill.

Students need to take their own initiative. Skills lab gives you the skeleton, but you still need to read up on it and practice. There's just too much time between learning and practice (P5, FG1, p. 6).

To be more prepared, students wanted additional clinical experience and a more graduated transition from the theoretical portion of the course to the practical. Suggestions included more practice opportunities within the summer to keep skills fresh, an opportunity to practice skills within the community to gain more experience, and a full orientation day before starting clinical to become familiar with the hospital setting, policies, and staff.

4. Patient safety as an intimidating threat. The combination of these previous factors precipitated anxiety and apprehension among these students and with respect to patient safety. This fear undermined the establishment of a culture of safety. One of the main problems fuelling the students' anxiety was their sense of a culture of blame present within the nursing program. When asked about the culture in the nursing program, 60% (n=5) of students agreed that it reflected a

culture of blame, while the remaining 40% refrained from assigning a culture of blame or safety.

Definitely a culture of blame. The faculty doesn't look at what caused the problem; the student is just to blame. The faculty is above you, and there are many power issues going on (P4, FG1, p. 8).

Conversely, 40% of the same students agreed a culture of safety existed in the clinical setting while the remaining 60% declared it varied by institution.

It depends on the institution, the staff, the nurse manager, and the clinical instructor. It can be both a culture of blame and a culture of safety (P3, P4 & P5, FG1, p. 7).

A second concern that arose among the students was the fear of losing marks, or even placement in the nursing program if they appeared to lack knowledge, i.e. by asking too many questions. Of interest, 71.43% (n=7) students were concerned about performing correctly and quickly to obtain a better clinical grade, or they hesitated to ask questions when they were unsure because of the fear being assigned a lower grade.

You can't speak out for what you believe in. It's ironic that you can't advocate for yourself. The faculty teaches autonomy, but once you speak up, you are marked (P3, FG1, p. 8).

I'm going to get a lower grade, so why should I bother asking about patient safety as a concern? (P1, FG2, p. 36)

It's easy to rush because as a student because you're trying so hard to impress your clinical instructor and to show them that you are a proficient individual and that you are an A student, since of course we are graded on that scale. I think that errors are made that way (P2, FG2, p. 4).

As you ask a question, you're going to get a lower mark.... We're looking out for our mark because we want to graduate from nursing with good marks for most of us, and sometimes then patient safety gets the back burner when we're worrying about marks (P1, FG2, p.8).

Additionally, students found that instead of being taught to execute skills in a safe manner, they felt frightened into doing them correctly. This moved the focus away from a culture of patient safety to a culture of blame and increased the pressure to perform.

They almost scare us into making sure that we're doing things properly, that we do the triple check and you know if you don't do the triple check that it could be a costly error (P1, FG2, p. 3).

In light of these stressful factors, students became emotionally charged, while concurrently practicing within a high-stress environment. Students thus recognized that these feelings of apprehension, stress, and fear were patient safety risk factors for both patients and themselves.

I think I am prepared, but anxiety is high for me. At risk, sure, I'm a student, it can happen (P5, FG1, p. 3).

It was just being put under stress to get all these papers, journals, reports, and assignments done; staying up so late, researching clients the night before. I was to give an oral antibiotic, and I gave it two hours early, so I went and I told my clinical instructor, and I was basically crying, thinking for sure I'd be kicked out of the faculty (P2, FG2, p. 22).

Students emphasized the importance of shifting from a culture of blame to a culture of safety. To encourage this transformation, students suggested incorporating a support system within the post-clinical conference debrief. Encouraging questioning and eliminating fear tactics were noted as crucial for creating an atmosphere of learning and responsibility. Finally, more education on patient safety throughout the theoretical portion of the program was recommended to reduce anxiety later on in the practice context.

Summary and Conclusions. The perspective of nursing students is important to take into consideration when exploring patient safety from an education systems

perspective. Upon examination of the themes that arose from focus group data, several observations can be made. Notably, patient safety was mostly absent from the current nursing program. The students encouraged an increase in focus on patient safety in both the theoretical and practical areas of the program. In conjunction with an increase in experience in the skills lab and clinical setting, students suggested that this would create the foundation necessary to support them in the field. Finally, in response to factors placing them at risk, students emphasized the overall importance of asking questions and building relationships with their mentors: clinical instructors, nursing faculty, and unit staff. Students also voiced the value of a transition from the culture of blame into one of safety. The nursing students' firsthand experience of the program offered insight to cultivating a nursing program that is not only supportive but which fosters patient safety.

A Perspective on Patient Safety – Clinical Instructors

Two focus groups (n=9) were conducted to gain insight into the concept of patient safety from the perspective of clinical instructors representing Year Two, Year Three, and Year Four clinicals. Overall, the clinical instructors identified patient safety solely at the level of the individual patient, for example, creating a safe and secure environment for patients. They were also aware of patient safety from a systems perspective, however, this point of view was much less central in their discussions. Clinical instructors identified their expectations and concerns for students regarding patient safety. When asked what their role was in relation to these students, clinical instructors identified themselves as preventing a patient safety event, and supporting students should an event occur. They examined the culture of the nursing program in which they worked, and the majority of clinical instructors identified it as being in a period of transition from a culture of blame to a culture of safety. Clinical instructors then assessed the value of clinical learning contracts and their contribution to the program including the cultural shift from blame to safety. Finally, the clinical instructors reflected on the nursing program in terms of patient safety and identified factors placing students at risk. The clinical instructors were adept in identifying current or proposed solutions to mitigate these risk factors. The perspectives collected from the two groups of clinical instructors were qualitatively analyzed i.e., underwent open coding and thematic analysis and five underlying themes were delineated as presented in Figure 2.02.

Figure 2.02: Underlying themes arising from clinical instructor focus group data

I) Awareness of Patient Safety and Patient Safety Concepts

- Focus on the safety of individual patients
- Limited awareness of concepts central to patient safety

II) Expectations and Patient Safety Concerns Regarding Students

- Expectations: students are prepared, knowledgeable, and accountable
- Concerns:
 - Medication: incorrect preparation, inappropriate medication administration, lack of critical thinking
 - Basic Skills: Charting, environmental safety, asepsis

III) Role before and after a patient safety event has occurred

- Role before a patient safety event
 - Safety of students and patients
 - Prevention of a patient safety event
- Role after a patient safety event
 - Liaison between course leader or university contact
 - Student support and reassurance

IV) Program perspectives

- Theory and reality of the practice culture context
- Clinical Learning Contract assessment

V) Perceived factors placing students at risk and factors supporting students

- Concerns about clinical instructors
- Inadequate preparation for practice
- Concerns about students

I. Clinical instructor Awareness of Patient Safety and Patient Safety Concepts

Similarly to the students' perspective, clinical instructor's awareness of patient safety was framed around the safety of individual patients. This individualized concept of patient safety was revealed when clinical instructors were asked to define patient safety. They generated the following responses:

- Not causing any harm to the patient;
- Physical safety, relationship safety, obtaining consent;
- Safe and secure environment;
- Emotional and spiritual care;
- Maintaining the people entrusted in your care; and,
- Providing safety to that patient.

As the last two items on the list of responses specifically indicate, the clinical instructors were mostly advocating the idea of safe patient care. Of course, safe patient care is within the realm of patient safety.

Two clinical instructors offered an opinion that did include a systems perspective of patient safety. Their comments suggested a broader understanding of patient safety and patient safety was understood, in part, as a system phenomenon. Human error was not solely viewed as patient safety. Shared accountability and the public's trust in the system were noted by other instructors. The remaining clinical instructors did not articulate concepts central to patient safety, e.g. teamwork, communication, ethics, etc.

Patient safety is not a person mistake, but a system mistake. We need to look at how we manage these mistakes (P3, FG3, p.15).²⁰

I think there must be a shared responsibility for ensuring patient safety, particularly in the learning process (P1, FG4, p.27).

I think that we are trying to create for the public a sense of trust of who delivers a service to them, and that we become more accountable (P1, FG4, p.57).

These two clinical instructors demonstrated a general awareness of patient safety. In contrast, the majority of the ideas emanating from the clinical instructors regarding patient safety were rooted at the level of the individual patient.

II. Clinical instructor Expectations and Patient Safety Concerns Regarding Students

Clinical instructors expected certain skills and behaviors from the students within the nursing program. From their perspective, these expectations would assist to mitigate the risks involved in learning nursing practice. Three principal expectations arose:

(a) Students are prepared:

The student is prepared to give safe care, and that they know what to do and when to ask for help (P4, FG4, p.7).

(b) Students are knowledgeable:

They should have an understanding from not only the physical perspective, but in meds, and policies and procedures and all that. They should have a good knowledge for the area (P1, FG4, p.6).

(c) Students are accountable:

That they chart and that they are accountable for their charting, and that it's done accurately (P4, FG4, p.20).

²⁰ P=participant, FG=focus group, p.=page number

You want to promote that with the students, honesty, and keeping yourself accountable (P4, FG4, p.47).

My students have come to me and said, "You know, I forgot to do this, do I need to write an occurrence report?" Like they're being accountable, and they want to be nurses (P2, FG3, pp.13-14).

Clinical instructors all agreed that they provided guidance to students who were lacking in any of these areas. Many had also observed exemplary student behavior occurring on their respective units. These conditions (prepared, knowledgeable, accountable) were crucial to forming an open relationship with students and preventing patient safety events.

Despite meeting these conditions, the clinical instructors identified patient safety concerns among students. The clinical instructors categorized these concerns into two major areas: medication and basic skills.

Medication. The main area of concern for clinical instructors was medication, where 88.89% (n=8) agreed that it was the area with the greatest frequency of mistakes. From their perspective, medication errors arose because of the following three reasons:

(a) *Incorrect preparation.* Certain concerns preceded medication administration and were related to the preparation of the medication itself. Problems were consistently observed in lack of labeling medication, checking the ID

(identification) band of the patient, and not verifying the medication with the medication administration record, or with the Pyxis²¹ machine.

I go in with a student to watch for the very first time, and often people get so focused on the skill and forget to do their ID checks.... I would say approximately fifty percent of students forget to check the armband the first time I watch them (P4, FG4, pp.9-10).

The other thing I notice with students is with syringes. I always make them label every syringe. They get down to the room and they may check the armband, but they don't take the syringe and check against the armband. One student actually took the syringe and gave it to her second patient instead of the first (P2, FG4, p.11).

It's not stressed to them continuously, I want you to look at the name on the medication administration record, and then when you take the medication out I want you to look at that and make sure it matches what it says on the screen (P1, FG4, p.15).

(b) *Inappropriate Medication Administration.* Clinical instructors observed that Year Three students struggled with recalling the five rights of medication administration. Medication calculations and the application of mathematics were recurrent weaknesses among many of the nursing students. Students from across the years also had difficulties recollecting normal vital signs.

I think the third year students and the five rights are a really big thing The third year students haven't had it drilled into them that they take the medication, they go there, they check and they ask what are the five rights (P1, FG4, p.12).

Another safety issue is not knowing the norms for vital signs and not recording them (P3, FG3, p.11).

Near misses come with things like calculations.... If it doesn't say specifically on the medication administration record how much to draw, they have difficulty remembering how to calculate. Even if they remember the formula they have difficulty with the mathematics. They need a calculator, many of them. They don't know how to divide (P5, FG4, p.22).

²¹ Pyxis: automated medication and supply management system

(c) *Lack of critical thinking.* This was especially an issue when there was a change from simple to more complex medication situations. Clinical instructors noticed a higher potential for problems to occur when there were multiple medications to administer, when there were new medications to administer, or when there was excess stock medication.

I see that quite often they have difficulty with a new drug on the computer (P5, FG4, p.22).

At the beginning it seems to be medication. What happens is when something different comes in and they don't know what to do about it (P2, FG3, p.6).

They've got two antibiotics schedule for ten o'clock and they're not quite sure which one they should give first (P1, FG3, p.20).

When they have medication that comes from a stock, they will come to me and ask if it's okay to put it back in the bottle. I ask them why wouldn't you do that? And they immediately think about the cleanliness issue, but it takes them awhile to figure out they could put it back in the wrong bottle (P4, FG4, p.14).

The medication error concerns were foremost among the clinical instructors, who also perceived them as the most potentially harmful to patients. Clinical instructors also recognized that the most students became nervous when encountering medication situations. Of note is that the clinical instructors observed first time administration of medications.

Basic Skills. While medication was the primary concern, clinical instructors also observed that basic skills were lacking among the nursing students. One deficiency was the ability to chart information.

I find that charting is a really big issue that is actually a big safety concern. You need to be charting anything that is involved, so it has to be done accurately (P4, FG4, p.20).

A second area of concern was the inability to maintain environmental safety. This manifested itself in different ways such as not knowing how to lift or support a patient, and included simple tasks such as ensuring the side rails on a bed were up when the patient was left unattended.

Many of them haven't done a complete bed bath; some of them have never given a suppository or an enema (P5, FG4, p.41).

The other safety issue I've had was one student that left her side rails down (P4, FG3, p.9).

Finally, nursing students struggled with the concept of asepsis. Clinical instructors observed unnecessary contamination that was precipitated without recognition on the part of the student.

There are other safety issues around sterility. I find that students have lots of difficulties with sterility.... The student doesn't know that they're making a mistake and then you get them in the clinical area and they often don't realize that they contaminate (P5, FG4, p.17).

This lack of basic skills manifested itself in the actions of the students. Although students possessed the characteristics required to be a good nurse, they sometimes lacked proficiency in the skills that were fundamental to their practice. This discordance between expectations/preparation, knowledge, accountability, and basic skill preparation placed students at risk for patient safety concerns.

III. Clinical instructor Role Before and After a Patient Safety Event

With the student expectations and concerns in mind, clinical instructors concluded that their role consisted primarily of protecting and guiding the

students. Safety was their main concern. Clinical instructors identified different actions taken to maintain the safety of their students and patients.

My role is to ensure that care is delivered in the safest manner possible. For that patient, for the staff that are working, and for the students (P1, FG4, p.6).

My job is there to keep the students safe, as well as the client. So they absolutely have to report to me because I'm responsible for their behaviour (P3, FG3, p.4).

Methods for sustaining this safe environment included being present for the students, and asking them the right questions.

You must be there for them, because if you're not, they're going to be exposed to things that aren't so good and not know what to do. I think also you should tell them on the first day "I want you to question me" (P2, FG3, p.41).

I think over the years you get to know the kind of mistakes that students make, and so you kind of try to ask the right questions before they happen (P4, FG4, p.8).

Secondly, enacting prevention was important for the clinical instructors. Within their patient safety concerns, they were able to recognize practice areas whereby students were most susceptible to patient safety concerns. As such, they implemented certain practices such as watching students perform a procedure for the first time, and checking on areas of concern frequently.

I try to minimize errors by actually doing orientations the first time you give oral meds (P2, FG3, p.15).

You check on certain things, it's kind of like prevention. If you see something being a risk factor or something that you see is a common mistake for new students in the area (P4, FG4, p.8).

The role of the clinical instructor shifted from one of maintenance and prevention to one of rehabilitation and restoration after a patient safety event

occurred. This created an intermediary role for clinical instructors, as often it would include a third party.

To follow up, on occasion the unit manager has gotten involved to give the expectations and sign off on the incident reports. They like to let the students know they actually look at it and see the circumstances, whether to reassure them it's okay or to make sure the whole group learned from it (P1, FG3, p.13).

Often the head nurse will talk to them about it. She follows up on all errors (P5, FG4, p.25).

Clinical instructors would contact the clinical course leader only if students were evidencing a concern as a collective, if a significant error occurred, or if an individual student repeatedly made the same errors.

If it becomes a concern that's being repeated, then we tell the course leaders and after that the course leaders look at the learning contract. I would only tell the course leader if it was something I figured was grossly unsafe (P2, FG3, p.22).

We're not routinely letting our course leader know that a med error has been made. If it's the same student then you'll let them know, but I don't think I have had any situations where the course leader was involved with an incident of safety (P4, FG4, p.36).

Generally the problems we have are not ones that we bring to the facilities and the faculty. Even if she gave it to the wrong patient, if the patient is safe then it's a part of learning (P1, FG4, p.37).

Whether there was secondary contact or not, the support and reassurance of the student was emphasized as the most important part in following up a patient safety event.

I find when a student makes a mistake, the worst thing you can do is come down hard, because usually what they really need is support (P4, FG4, p.48).

As clinical instructors were liaisons between the clinical and university settings, their role before and after a patient safety event was critical. Supporting students and preventing patient safety concerns was a significant clinical

instructor role. Clinical instructors were in an excellent position to foster linkages between the two environments (practice, education). According to the clinical instructors, communication across these environments, and in relation to patient safety, was limited.

IV. Clinical instructor Program Perspectives

Clinical instructors discussed their views of the nursing program including its current culture and the transition into a desired culture. When asked if they encountered a culture of blame or safety within the nursing program, the responses from the clinical instructors were mixed. Although 33.33% (n=3) agreed that it was a culture of safety, 22.22% countered claiming it was a culture of blame. The remaining 44.44% (n=4) either declared it was a mixed culture or a culture in transition. Those who believed in the culture of blame thought the language used in relation to students was incriminating. Furthermore, they considered it difficult to eradicate the current culture of blame.

I think some of the language we use, and we teach our students to use, infers blame. Whether we use “non-compliant” or “dysfunctional” we use it all the time and we teach it (P3, FG3, pp. 31-32).

Basically I don't think it'll ever be a safety net because it's human nature to point a finger (P2, FG3, p.29).

The majority of clinical instructors recognized a discrepancy between the theory and the reality of culture in the practice context.

It's a theory of culture of safety out there, people are talking about it, but the bottom line is that they still want names, dates, times, and to know that ultimately someone was responsible. I don't think it's really out there yet, that you'll be supported. I think it's very individual (P1, FG3, p. 29).

I still think it's a pretty good mix; it's within a hospital as to how things are perceived and received when something happens (P4, FG3, p. 29).

I think there's a real shift towards safety. But I think there's still a feeling out there of blame. People are afraid when they come forward that it's going to affect other's perception of them, or maybe even their job. So I don't think we're there yet, but we're moving towards it (P1, FG4, p.47).

Although they felt there was a shift from a culture of blame to a culture of safety, all clinical instructors agreed that improvement was needed before a culture of safety could be fully established in the clinical setting.

One step recognized as currently in place to aid in the transition from blame to safety was the clinical learning contracts. Clinical instructors discussed the strengths and their limitations associated with the learning contracts, as well as suggested improvements. These characteristics are listed in Table 2.08.

Table 2.08: Assessment of clinical learning contracts by clinical instructors

Strengths	Limitations	Suggested Improvements
<ul style="list-style-type: none"> • More effective than verbal communication • Helps student to organize and plan improvements • Provides a clear directive on what to do to succeed • Allows ongoing monitoring of student 	<ul style="list-style-type: none"> • Devastates some students, some become strongly discouraged • Unclear guidelines for use, i.e. how long will stay in student file, whether or not it can be removed after student improves • Very threatening language • Difficult to implement in limited clinical time • Activated only when a serious problem occurs 	<ul style="list-style-type: none"> • Change threatening language: "You're in danger of failing this course" • Write a contract earlier stating the area of improvement without threatening impending failure • Allow more time to implement

Overall, the clinical instructors agreed that the clinical learning contracts were effective. Several of them, however, were concerned with the language used in the contracts and considered it to be harsh and/or alarmist. Clinical instructors also found that shorter clinical practice timelines (4-6 weeks) were limiting in terms of providing feedback to students and fostering improvement in their practice. Taking into consideration the reactions and outcomes of the students, clinical instructors suggested using less threatening language and allowing more time for contract implementation. The clinical learning contracts were identified as a preventative tool that helped students to grow as novice practitioners and to demonstrate quality-nursing care. Clinical instructors believed that the clinical learning contracts were contributing to overall student success.

V. Clinical instructor Perceived Factors Placing Students at Risk and Factors Supporting Students

Clinical instructors identified factors that placed students at risk for precipitating patient safety events. Three recurring areas were identified as problematic: concerns about clinical instructors, lack of preparation for practice, and concerns about students. These categories and current/proposed solutions are presented in Table 2.09.

Table 2.09: Clinical instructor identified patient safety risk factors for students and current/proposed solutions

Risk Factor	Current/Proposed Solution	
1. Concerns about Clinical Instructors		
<i>One clinical instructor for many students*</i>	Limit group size	
<i>Clinical instructors may lack experience as educators*</i>	Mandatory orientation for clinical instructors	
High turnover of clinical instructors	Increase clinical instructor mentorship and support	
Clinical instructors reluctant to fail students	Increase communication for clinical instructors across different years; discuss clinical instructor expectations	
2. Lack of Preparation for Practice		
<i>Transition from skills lab to reality*</i>	Increase orientation before clinical	
<i>Limited opportunities to practice skills on a patient*</i>	More hands-on skills in clinical	
<i>Lack of skills*</i>	Check-list for skills before entering workforce	
<i>Not enough clinical experience*</i>	Re-structure program to increase clinical time	
Students supervising students in skills lab	Supervision by clinical instructor of first time administering medication (oral, injection)**	
High turnover in course leaders		
Lack of critical thinking	Clinical instructors encourage questioning	Teach relevant theory before clinical
3. Concerns about Students		
<i>Nervous and uncertain *</i>	Foster confidence with more clinical experience; provide copy of evaluation to students	
Careless and overconfident	Use of Clinical Learning Contracts or post-clinical conference discussion	
If technically derived, information or data assumed errorless	Clinical instructors offer stories of possible problems that may arise with technology	
Students' inability to refuse when nurses expect tasks of them that they are unprepared to perform	Support students to increase assertiveness; foster relationships with unit staff	

* Factors at risk previously identified by students indicated in italics

** Current solutions in place indicated in light-grey boxes

1. Concerns about clinical instructors. Clinical instructors had numerous concerns regarding their own preparedness and general role expectations. Two of their concerns echoed those of the students: the number of students assigned per clinical instructor, and the teaching competency of their fellow clinical

instructors. Clinical instructors were concerned about the lack of one-on-one supervision time they had with students. The high numbers of students in their clinical groups exacerbated this problem.

I think that it should be a maximum of six students for rotation. No instructor should have to watch more than six people. Even with six sometimes, there are days when it can be really challenging (P4, FG4, p. 54).

You have to watch group sizes. We can't be there if there's eight or more, or seven, or even sometimes six, depending. You're allowing them more and more independence, but you still have to be aware of what they're doing, and you can't divide yourself in a million ways (P3, FG3, p.41).

Similar to the students, the clinical instructors noted the lack of preparedness among themselves and their colleagues. When asked about their orientation, 75% of clinical instructors (n=4) could not recall attending such sessions. Clinical instructors stated that their understanding of role and expectations had come directly from the course leader on an informal basis, and not from an orientation.

The clinical instructor orientation needs to be mandatory. Clinical instructors need to know what expectations are, what the level of supervision is, what they should be telling students, how to respond to difficult students, how to write up a learning contract. A lot of clinical instructors are flying by the seat of their pants (P1, FG3, p.35).

Clinical instructors believed that the lack of preparation and guidance of their co-workers was a contributing factor to a high turnover rate. Therefore, a clinical instructor mentorship program was suggested to support new clinical instructors in their clinical teaching role.

I think we need some kind of mentorship for the clinical instructors. I think very often people move around and they haven't had anybody to mentor them into the teaching role (P4, FG4, p.54).

They need to sit down and look at what they're asking of people to take on this role. It needs to be clear about what a clinical instructor does, the role

that entails. The turn over in clinical instructors is huge; they're not clear on their role.... They need to offer a whole lot more support (P3, FG3, p. 36).

Moreover, it was thought that there was a communication deficiency among clinical instructors working with the students from different years, i.e. Years Two, Three, and Four. This resulted in inconsistent expectations, lack of mutual support, and a spillover of weak students into the next year.

The blinders are on, and they need to come off. It needs to be much more integrated. Everybody needs to know what everybody else is doing and what the expectations are down the continuum. We need to know where they start and some idea as to where they need to go (P4, FG3, p. 37).

I hate the word weeding out, but you know the process. There are students that by the time I see them in fourth year, they should have clearly not made it through. My biggest pet peeve would be that it should've been addressed before I see them. We're one of the last two rotations, and for that responsibility to be left up to us when it's been identified earlier, I don't think it's fair (P5, FG4, p.52).

The central role of the clinical instructor in decreasing the risk of a patient safety event occurrence was clearly articulated by clinical instructors. In order to address supervision concerns and establish consistent clinical supervision, the suggestions were to decrease student group sizes while increasing the amount of orientation and support the clinical instructors receive. Furthermore, the clinical instructors voiced that increased communication among them would improve their supervision of students. This would help create a consolidation of expectations amongst the different years of students and thus address the progression of weak students.

2. Lack of Preparation for Practice. Several of the clinical instructor concerns validated those identified by the students. That students lacked clinical

experience was a recurrent point made amongst the clinical instructors. Students also lacked skills or were unable to demonstrate skill development commensurate with their clinical year.

You're still working on a Jake (dummy), only now the Jake's not there, it's a person now. I had one student performing a catheterization and announced to the patient "Yes, I've done it before, on a dummy in the lab" (P1, FG3, p.12).

I think they're lacking real experience. Like if we could somehow restructure the program so they get more clinical time. I think if every student had some of the basic skills in organizations under the belt, they would be more comfortable (P5, FG4, p.41).

I'm actually quite surprised at the lack of skills they have from fourth year. I find that some of the basic stuff you should have learned, they're not coming to me with any. I'm surprised at the actual hands-on skills that they're lacking (P4, FG4, p. 39).

This problem became more evident with the difficult transition from skills lab to reality. Similar to the students, the clinical instructors observed that students were anxious and distressed when applying skills in the practice setting, i.e. with real patients and not low-fidelity mannequins. The clinical instructors remarked that while the skills lab was a reasonable simulation, it did not mirror the clinical experience as it should.

They're very good at doing exactly what it says there, but I tell you it's quite different in transferring into the real world (P1, FG4, p.18).

Some of them get a little behind and get a little discouraged when what they see in the clinical area is not what they're taught (P2, FG3, p.27).

What comes out of the lab is not always what we see in real life, so they have that transition and that learning curve (P4, FG3, p.26).

Consequently, the students focused on practicing the skills at hand to the detriment of their overall nursing care. They were thusly constrained from

prioritizing patient care or engaging in critical thinking. Clinical instructors noticed that students struggled to apply critical thinking in their practice.

Sometimes they've never developed their ability to make critical decisions (P5, FG4, p.16).

You know, if they're comfortable with the skill kind of things, then they can really focus on communication, on critical thinking, and on holistic care (P5, FG4, p.43).

According to the clinical instructors, certain clinical inadequacies arose from the nature of the nursing program. The clinical instructors thought the theory courses were problematic given the high turnover in clinical course leaders, which had an impact not only on student expectations but also on expectations of clinical instructors. Another clinical instructor was concerned about the lack of supervision in the skills lab.

I'm not quite clear of what the expectation is of me from the university course leader. I had a couple different ones, and I would like some better direction of my work specifically (P1, FG4, p. 56).

I sometimes feel like they haven't had enough one-to-one supervision. Very often they tell me that one student supervised another student in the lab. It's just because there aren't enough lab instructors to watch them. I think sometimes it's the blind leading the blind (P5, FG4, p.17).

Clinical instructors noted that a solid formative preparation was key for optimal performance by students in the clinical setting. The clinical instructors advocated for an increase in clinical experience and hands-on skills. It was thought that restructuring the program to include additional clinical would:

- Increase student confidence;
- Foster linkages between the theoretical and the clinical domains;
- Augment critical thinking in relation to skill performance; and,
- Permit more holistic care.

Clinical instructors suggested incorporating a skills check-list into the program to ensure each necessary skill had been practiced by students at least once before performing on a patient. Clinical instructors also recommended providing the relevant theoretical base in advance of the practice setting (i.e., the required skills for the practice context). Upon integrating these aspects into the program, clinical instructors felt as though the nursing students would be much more prepared and therefore much less likely to precipitate a patient safety incident.

3. Concerns about Students. Similarly to the students' recognition of patient safety as a threat, clinical instructors noted that students appeared nervous and uncertain in the clinical context. However, clinical instructors also observed that some students became overconfident and careless. These characteristics and behaviors could compromise patient safety and were thus viewed as risk factors.

I have found that errors are generally as a result of nervousness on the student's part, uncertainty, so maybe sometimes I should spend more time assuring them and teaching them (P1, FG4, p. 23).

With students at the end, there were some medication errors and I think it was because they were being careless. They think they know what they're doing, but too many other things are happening (P4, FG3, p. 6).

Another significant problem the clinical instructors noticed with the students' conduct within the clinical setting was the unchallenged acceptance of data recorded by a machine. Students were quick to accept information from heart rate monitors, Pyxis machines, and other technology without critically analyzing the data to ensure their accuracy.

They seem to assume that anything that has to do with the machine, or is technologically delivered is simply, absolutely right. There is no error (P1, FG4, p.15).

You know, we're using computers for medication, but they all have their glitches and it's hard to keep them all in your head if you've never learned them in the first place (P5, FG4, p.17).

Finally, clinical instructors commented on the role of the unit staff and their interactions with the students. Several situations were observed where unit nurses asked students to perform tasks for which they [students] were not adequately prepared. Students felt unable to refuse the request and consequently were at risk of creating a patient safety issue.

In the incidents that I've had, it's the nurse being too busy to do what she should be doing, and the student not having enough assertiveness to say, "No, I can't do it" (P1, FG3, p.16).

Most of my errors are because of some other health professional who has suggested that they do it, and they don't know enough not to do it. They know that they shouldn't but they don't know how to tell them that they shouldn't (P4, FG3, p. 20).

The truth is they should not give it, but they can't seem to say, "I will not give the medication that you prepared" because some nurses will get very angry at somebody and take it out on them (P3, FG3, p. 21).

Students were challenged to be competent while at the same time being cautious. The clinical instructors were aware of this fine balance. In maintaining this balance, clinical instructors shared stories of caution to generate awareness among the students. They also used encouragement and support to increase student assertiveness with figures of authority. Clinical learning contracts and post-clinical conference discussions helped ensure all students could learn from different patient safety incidents.

Summary and Conclusions. As one of the main influences on students in the nursing program, the perspective and role of clinical instructors was significant in the exploration of patient safety. Upon examination of the themes that arose from focus group data, several observations can be made. Of interest, clinical instructors were predominantly unaware of patient safety from the systems perspective. As clinical instructors are one of the main influences on students, these responses reveal a possible reason as to why students similarly demonstrated an unawareness of the systems perspective of patient safety. Clinical instructors elaborated on their expectations of their students, articulating high standards of preparedness, knowledge, and accountability. Regardless of meeting these expectations, clinical instructors also noted many patient safety concerns stemming from the areas of medication and basic skill preparation. In recognizing the probability of a patient safety event arising, clinical instructors identified their role as preventative, and restorative in the aftermath of a patient safety event. Clinical instructors perceived this role as an important contribution to the shift the nursing program was undergoing from a culture of blame to a culture of safety. Clinical instructors then listed the main factors placing students at risk, and solutions that are or could be put in place to avoid them. Despite their cognizance of the inherent limitations within the nursing program, clinical instructors also voiced a contradiction whereby the students in the program were anxious and fearful, and the main support presently in place was their clinical instructor responding:

Now, there should be absolutely no fear involved in what we are about to embark on, I am here to facilitate your learning, so we'll go from there (P1, FG4, p.59).

Likely such reassurance (i.e., have no fear) was inadequate in light of the factors placing students at risk. Both students and clinical instructors identified these risk factors and offered respective solutions.

A Perspective on Patient Safety – Administrators

One focus group and two individual interviews (n=4) were conducted to gain insight into the concept of patient safety from the perspective of the Faculty of Nursing administrators. Overall, the administrators identified patient safety solely at the level of the individual patient, for example, preventing errors, falls, and injuries. They were also aware of a broader perspective of patient safety; however, this point of view was marginally positioned with respect to their discussion.

Administrators expounded on the students' exposure to patient safety concepts, and voiced that the concepts were threaded throughout the nursing program. They observed that patient safety manifested itself in both the theoretical and practical domains of the program. Despite the pervasiveness of patient safety concepts throughout the program, administrators identified numerous recurrent areas of patient safety concerns. They divided these concerns by year, and found that the most frequent problems occurred with medication. Administrators then addressed their role in relation to these patient safety concerns. They supported a holistic comprehension of patient safety among students, and fostered the prevention of patient safety by ensuring the presence of clinical instructors. Upon the occurrence of a patient safety event, the administrators identified steps in place that they would take, such as a policy change or an increase in communication between the clinical and educational setting. The administrators emphasized the importance and integral roles of clinical instructors. Considering their significance, administrators identified different

concerns faced by the clinical instructors and proposed several solutions. Finally, the administrators evaluated the nursing program and the culture that it embodied. All administrators agreed that the program was in a period of transition from a culture of blame to one of safety. Within this program assessment, they also commented on the clinical learning contracts and their positive contribution to student success. The perspectives collected from the administrators were qualitatively analyzed i.e., underwent open coding and thematic analysis and six underlying themes were delineated as presented in Figure 2.03.

Figure 2.03: Underlying themes arising from administrator focus group data

I. Awareness of Patient Safety and Patient Safety Concepts

- Focus on the safety of individual patients
- Limited awareness of concepts central to patient safety

II. Student Exposure to Patient Safety Concepts

- Exposure to patient safety concepts in theory, skills lab, clinical setting and evaluation process

III. Patient Safety Concerns

- Different concerns for each Year of clinical practice (e.g. unsafe patient transfers, poor communication, poor judgment, overconfidence in skills)
- Medication concerns: Across all Years

IV. Role Before and after a Patient Safety Event

- Role before a patient safety event
 - Student comprehension of patient safety
 - Guidance to clinical instructors and students to prevent a patient safety event
- Role after a patient safety event
 - Increase of coordination/communication between education and clinical setting
 - Implementation of learning contracts, student debarment, and policy change (depending on event severity)

V. Concerns about Clinical Instructors Placing Students at Risk and Proposed Solutions

- Clinical instructor's limited clinical and teaching/mentoring experience
- High clinical instructor turnover

VI. Program Perspectives

- Perception regarding the culture within the nursing program and clinical context
- Clinical Learning Contracts

I. Awareness of Patient Safety and Patient Safety Concepts

The administrators' awareness of patient safety was initially presented as being at the level of the individual patient. The following list of responses was generated around the perception of patient safety equating to specific incidences of patient care:

- Keeping the patient safe from something;
- Preventing errors/falls/injuries;
- Providing safe care, i.e. giving medications, moving a patient, communicating with a patient; and,
- Making sure that the patient is not harmed in a physical, psychological, or emotional way.

Several responses did indicate a broader understanding of patient safety; however, this comprehension of a systems perspective was limited.

Administrators overwhelmingly spoke to the provision of safe practice through nursing care, rather than patient safety concepts. While safe practice concerns are within the realm of patient safety, they represent a limited bandwidth of understanding.

Patient safety is the number one concept with students, and it means that they provide safe care in everything they do.(P1, FG7, p.1).

I think it's the absence of an incident. It's related in a general way to quality patient care, quality assurance, and so it's broader than just the absence of errors. It needs to be related to the whole quality of care initiative (P2, FG5, p.1).

I actually feel quite competent in the way that we are providing our students to provide safe practice (P1, FG5, p.6).

One initiative, however, to foster patient safety within the curriculum resonated with a systems understanding of patient safety:

There's a real push, health discipline wide, to increase interdisciplinary collaboration with the exact intent to lessen the livelihood of unsafe incidences by having everyone not do their own thing, but to work together more clearly (P1, FG5, p.14).

Interdisciplinary collaboration promotes teamwork and communication, and fosters patient safety. Such interdisciplinary collaboration warrants a systems-based approach relevant to addressing potential safety issues. Despite this realization, administrators did not appear grounded in the concepts or language of patient safety. Their understanding centered on the provision of safe care to individual patients.

II. Exposure to Patient Safety Concepts

When asked about students' exposure to patient safety concepts, administrators identified concepts foundational to the nursing program. They noted patient safety as being one of the primary concepts in the education of nursing students:

In many ways I would say it's the basis for everything we teach. Certainly it's most strongly emphasized for going into the clinical area. But it's also within the curriculum all over the place. I think it's just sort of there everywhere, as opposed to a course called patient safety, it's absolutely incorporated (P1, FG5, p.1).

Although patient safety was not specifically addressed in a single course, administrators observed that it was threaded throughout the program. The administrators also suggested it most strongly manifested itself in three areas:

(a) The theoretical portion of courses. Theory courses had patient safety outlined in their respective syllabi and also included the course material itself:

Patient safety is addressed in the syllabus, it's very clear there that patient safety is number one. It's emphasized throughout the theoretical course (P1, FG7, p.1).

It is in the syllabus; it's very clearly spelled out, what is considered to be safety in both physical and psychological safety (P1, FG6, p.1).

I know even in theory courses where you would think it's just knowledge base, patient safety is always mentioned, it's very clearly pointed out, so that's our primary responsibility (P1, FG6, p.4).

When I talk about theory and I talk about clinical experiences, and we put them together in the classroom, patient safety is always at the height of everything we do (P1, FG7, p.1).

(b) The skills lab. In contrast to the students' concerns regarding the skills lab (i.e., lacking in the reality factor, limited access, time delay between learning and applying skills, etc.) the administrators observed that it was a good preparation for patient safety in the work place:

You know the detail they take in the skills lab for example, making it as realistic as possible. I feel quite competent with the way we are teaching our students to provide safe practice (P1, FG5, p.6).

The students have a wonderful skills lab. They can practice. They have access to everything (P1, FG7, p.5).

(c) The clinical setting and the evaluation process. Patient safety in these areas was clearly the purview of the clinical instructors.

It's included in the evaluation tool, it's included in the objectives, and it's something that the clinical instructors will speak to probably on a weekly basis as the situations come up (P1, FG6, p.1).

It's in the forefront of every single clinical course. It's clearly stated in the evaluation tool by the clinical instructors (P1, FG6, p.1).

Although all the administrators felt that patient safety was adequately addressed within the nursing program, one participant also expressed openness to any program or curriculum changes that would increase patient safety content.

Could we do it better at the curriculum level, maybe? I think hopefully the findings of the study will help us in that regard, how we could strengthen that in our curriculum. We do it pretty well, but maybe we could do it better (P2, FG5, p.1).

Overall, the administrators felt there was sufficient exposure to patient safety throughout the nursing program.

III. Patient Safety Concerns

Administrators identified patient safety concerns for each year of the program. These patient safety concerns along with the corresponding year are listed in Table 2.10.

Table 2.10: Patient safety concerns of nursing students across different Years (e.g. Year 2, 3, 4, and Sr. Practicum)

Year of Study	Principal Concerns
Year Two	<ul style="list-style-type: none"> • Unsafe patient transfers • Medication concerns • Knowledge deficit
Year Three	<ul style="list-style-type: none"> • Medication concerns • Not checking policy and procedure • Poor communication
Year Four	<ul style="list-style-type: none"> • Medication concerns regarding palliative care • Psychological safety of patients • Knowledge deficit
Senior Practicum	<ul style="list-style-type: none"> • Poor judgment • Overconfidence in skills

In addition to the concerns as listed by year, certain patient safety issues were noticed as being more prominent earlier on in the school term.

September the students are much greener. They've just come out of second year, so they've only been to a very acute care setting. Some of those patient safety issues are often things like not putting a side rail up (P1, FG7, p.2).

Medication was recognized as the principal concern, both across years and during the term.

As the term goes on, then we may have some problems with medications. Medications are probably the number one concern, that students are either giving them at the wrong time, or giving the wrong medication (P1, FG7, p.2).

Administrators gave specific examples of incorrect dosages of medications such as insulin or heparin, or incorrect administration of IV medications or subcutaneous medications. Furthermore, it was observed that students had difficulty administering medications at the correct time. One administrator speculated it was the transition of becoming accustomed to a 24-hour system that caused some of the "timing" problems.

Overall, the administrators recognized the concerns over patient safety issues as being centered mostly around medication concerns, but also varying across different years and the time of the term. Both the clinical instructors and the students echoed medication as a primary patient safety concern.

IV. Clinical Course Leader Role Before and After a Patient Safety Event

Given patient safety concerns, the clinical course leaders defined one of their principal roles as helping students to understand patient safety holistically. A second check for preventing a patient safety event was to discuss and clarify with clinical instructors how to effectively maintain patient safety awareness

throughout the clinical portion of the course. These two preliminary actions were then followed through with maintenance during the course to ensure they were sustained. Finally administrators remarked on their role as clinical course coordinators. This included directing the students throughout the course and acting as a link among different course components:

Throughout the term I visit the clinical sites each week and I liaison between the University and the clinical site, the unit manager, the nurses, and also spend a fair bit of time with the clinical education facilitator, making sure that things are running smoothly and come down to patient safety (P1, FG7, p.1).

The administrator role as a mediator among all of these sources proved to be one of the only methods of sharing data between the institutions (education, clinical). Administrators also remarked that there was no formal mode of sharing patient safety data, and observed:

There is an ongoing review done, but there's not a central data bank. They're housed in different places (P2, FG5, p.3).

Despite the lack of a formal sharing, the administrators also indicated that there was a communication process in place that helped identify recurrent problems:

So there is a process within the faculty for that kind of communication to go on, around untoward effects. If it's isolated incidences, then we treat them as isolated, but if there's a pattern developing then there is a process for that (P2, FG5, p.4).

One example was the implementation of math competency testing as a result of an increasing occurrence of medication errors. This was a problem that was widely communicated within the faculty. Consequently, they created a mechanism for preventing medication issues and specifically with regards to the calculation of medication dosages.

Since an informal method of collecting information from the institutions was in place, the majority of administrators noted that they did not learn of most day-to-day patient safety issues. As such, they were only able to respond to extreme cases.

I don't think it's necessary to announce on a regular basis that you know a student has given a med late, or something. Those are considered safety issues, but it's the major ones that result in a need for us to change, and that more action is actually taken to communicate to everyone (P1, FG5, p.3).

Response to these critical events varied by severity of the issue. Administrators noted certain steps that were effective immediately; meeting with the clinical instructor and the student, and initiating a clinical learning contract. If the problems were recurrent, they could eventually result in the debarment of the student and a possible change in school policy. As each of these events were after the patient safety event had occurred, such responses appeared to be downstream and thus after the fact. Administrators did, however, note emerging patterns as an important form of data to collect to develop policies in a proactive method. One clinical course leader took it upon herself to collect this data:

One of the things I've been doing since I've been course leader is I've been independently tracking medication errors the students make and I am trying to actually determine whether there's a pattern (P1, FG6, p.3).

Furthermore, administrators articulated their efforts to become proactive in their role involving patient safety:

So we're trying to be proactive in terms of that rather than just reactive to issues that come up (P1, FG5, p. 15).

That observation made, patient safety data were not formally collected, aggregated, and analyzed. For the most part, data were collected in an ad hoc fashion and at the discretion of individual clinical course leaders. Administrators voiced their desire for a transition from a restorative to a preventative program with respect to patient safety. They noted their first steps as taking the initiative to collect patient safety data and to become proactive instead of waiting for an event to occur.

V. Concerns about Clinical Instructors Placing Students at Risk and Proposed Solutions

Administrators were asked about the role of the clinical instructor regarding patient safety, and any associated patient safety risks. Of interest, administrators identified factors associated with the clinical instructor role that placed students at risk for precipitating patient safety events. They also identified proposed solutions to reduce the current areas of concerns. These are listed in Table 2.11.

Table 2.11: Clinical Instructor associated risk factors for students and proposed solutions

Risk Factor	Proposed Solution
Difficulty recruiting and hiring clinical instructors, resulting in a limited selection	Recruit nurses who recently worked on the unit of interest
Clinical instructors have limited clinical experience in area of student supervision	Reading package for clinical instructors to help them in the clinical area of focus
Clinical instructor is a strong clinician but may have limited teaching experience	Build in criteria around clinical supervision of students, learning enhancement, and addressing patient safety
<i>High turnover of clinical instructors**</i>	Provide support to clinical instructors
<i>Clinical instructors may not be competent in their area of supervision/**</i>	Performance reviews for clinical instructors

*Factor previously identified by students

**Factor previously identified by clinical instructors

The administrators focused on clinical instructor-associated patient safety risk factors as they played a crucial role in the clinical setting. The main concern was the possibility of lack of experience for the clinical instructors, either in the clinical setting or regarding teaching experience. Administrators recognized that it would be difficult for clinical instructors to teach either if they had not learned the subject at hand, or if they lacked the skills to mentor.

They are excellent clinicians for the most part. Their clinical practice is great. But just because you can provide the care, doesn't mean you can guide students in their learning (P1, FG6, p. 6).

We don't always have clinical instructors who have the clinical experience in the area in which they're supervising students. Ideally, that's how it was established (P2, FG5, p.12).

As a result, administrators suggested several solutions: recruiting nurses who have recently worked on the unit, and providing an orientation as well as a manual to guide new clinical instructors through the teaching process. The importance of a strong clinical instructor was noted to prevent patient safety events in the workplace. As such, it was thought that concentrating efforts to ensure clinical instructors were clinically strong in their area and that they received feedback was critical.

VI. Program Perspectives

When asked about the culture within the nursing program and the clinical setting, the responses from the administrators were mixed. Only two administrators were able to clearly state their response, indicating both the program and the clinical as fostering a culture of safety. Another administrator claimed that it dependent on the perspective; clinical course leaders perceived

a culture of safety but the students found it a culture of blame. Regardless of the response, all administrators noted that it was the nursing program was in a period of transition:

I think it has switched to more of a culture of safety than it used to be (P1, FG5, p. 7).

I think traditionally it has been a culture of blame. I really do. But I know that there has been a huge development trying to shift from blame to a culture of working together and teamwork, and recognizing what happened, what went wrong, and what we can do. I think the shift is coming, but it's only started in the last few years (P1, FG7, p. 5).

All administrators noted that there was always room for improvement, as both the nursing program and clinical setting housed areas that were still grounded within the previous culture of blame.

When asked about clinical learning contracts the response from the administrators was mostly positive. Although there were a few noted limitations, all administrators agreed that they helped students to grow and be successful as novice clinicians. Assessment of the clinical learning contract is presented in Table 2.12.

Table 2.12: Clinical Learning Contract assessment by administrators

Strengths	Limitations	Suggested Improvements
<ul style="list-style-type: none"> • Clear outline of student action and expected date of execution • Recipe for success • Contract in writing with student agreement • Narrows focus for the student • Makes improvement a requirement instead of a suggestion • Encourages students to write their own goals 	<ul style="list-style-type: none"> • Students view them as negative, consider themselves on the road to failure • Too detailed, too long • Students may disagree with goals, rendering the contract ineffective 	<ul style="list-style-type: none"> • Present to student in a more positive way • Ensure contract is clear and concise • Provide a prototype of a contract to clinical instructors • Thorough discussion of contract with student

Overall, the administrators agreed that the learning contracts were effective. Their main concern, however, was that students often perceived the contracts as punitive instead of supportive. In order to resolve the negative reception of the contracts, administrators suggested that clinical instructors should present them in an encouraging manner with the goal of supporting the student and strengthening his/her practice. They also suggested that the learning contract be thoroughly discussed with the student. Administrators observed that the clinical learning contracts had very good results and were thus contributing not only to overall student success, but also to a culture of safety.

Summary and Conclusions. Administrators are responsible for patient safety initiatives within nursing programs. As such, their current perspectives relative to those of the students and clinical instructors was important to compare. Of interest, administrators were predominantly unaware of patient safety from the systems perspective. These responses help to understand why the various focus groups have similarly demonstrated an unawareness of the systems perspective of patient safety. Administrators voiced a strong patient safety focus throughout the program. This was in contrast to the students, who expressed that their exposure to patient safety throughout the program was lacking. This difference in opinion could represent a possible disjunction in communication between the two groups. When asked about their patient safety concerns, the primary concerns of the administrators involved medication. This response paralleled and validated the concerns of both the students and the clinical instructors. While

administrators did voice a desire to become more proactive when approaching patient safety issues, a centralized database to perform the necessary analysis was not in place. As such, they noted current restorative steps such as policy change or student debarment after a critical event. The administrators discerned different concerns about the clinical instructors, mostly focusing on their lack of teaching or clinical experience. Another concern was the high rate of clinical instructor turnover, a concern that was previously articulated by the faculty and the clinical instructors themselves. As such, they suggested a stronger recruitment program, as well as more support and feedback through a clinical instructor manual and evaluation process. Finally, when reflecting upon the nursing program, the administrators recognized the program either as being a culture of safety or in a period of transition. Of interest, this was again in contrast to what the students believed. As several of the administrators' responses differ from those of the students, further research, including the communication processes with the faculty, is warranted in light of these contradictions in understanding.

A Perspective on Patient Safety – Faculty

A focus group (n=4) was conducted to gain insight into the concept of patient safety from the perspective of faculty members teaching in the theoretical domain of the nursing program. Initially, faculty members identified patient safety solely at the level of the individual patient, for example, caring for the emotional needs of a patient. Some responses indicated a broader systems perspective of patient safety, even employing vocabulary such as “team environment”, and “adverse event.” However, the majority of responses equated safe patient care with patient safety.

Faculty then discussed students' exposure to patient safety concepts and voiced that the concepts were threaded throughout the nursing program. They believed that patient safety manifested itself in both the theoretical and practical domains of the program. Despite the pervasiveness of patient safety concepts throughout the program, faculty identified numerous recurrent areas of patient safety concerns. They believed that lack of student preparedness generated multiple areas of concern, extending from medication to communication. Acknowledging the likelihood of these patient safety events, faculty voiced their expectations of students following an error. Faculty identified their own role in relation to patient safety as consisting of student preparation and protection. Faculty articulated the importance of the clinical instructor in the practicum, and voiced their crucial role in preventing a patient safety event. Faculty then commented on the nursing program culture in which they worked. They stated that while they believed policies were embedded within a culture of

safety, the evaluation process fostered a culture of blame. Faculty also assessed the clinical learning contracts and their utility with students. They observed that the effectiveness of a contract was highly variable by the student's attitude towards its reception. Finally, faculty reflected on the nursing program in terms of patient safety and identified factors placing students at risk. The faculty members were adept in identifying current or proposed solutions to mitigate these risk factors. The perspectives collected from the focus group of faculty members was qualitatively analyzed i.e., underwent open coding and thematic analysis, and six underlying themes were delineated as presented in Figure 2.04.

Figure 2.04: Underlying themes arising from faculty focus group data

- I. Awareness of Patient Safety and Patient Safety Concepts**
 - Focus on the safety of individual patients
 - Broader understanding of concepts central to patient safety
- II. Students' Exposure to Patient Safety Concepts**
 - Underlying theme in theoretical, skills lab, and clinical courses
 - Assumption of its inherent presence in the curriculum
- III. Patient Safety Concerns and Expectations of Students after a Patient Safety Event**
 - Lack of student preparation: medication, protection of the patient, communication, and skills
 - Expectations of students: accountability and disclosure
- IV. Role of Faculty and Clinical Instructors**
 - Role of Faculty:
 - Ensuring student comprehension of patient safety
 - Preventing a patient safety event: modeling, and creating a theoretical base of patient safety concepts
 - Role of Clinical Supervisors:
 - Building a relationship with the student
 - Ensuring safety and recognizing students unfit to practice
- V. Program Perspectives**
 - Perception of the culture within the nursing program and clinical context
 - Clinical Learning Contract
- VI. Factors Placing Students at Risk and Factors Supporting Students**
 - Concerns about the clinical instructor model
 - Concerns about the Nursing Program model
 - Lack of preparation for practice

I. Awareness of Patient Safety and Patient Safety Concepts

The faculty's definition of patient safety initially equated it to safe patient care.

Echoing the perception held by students, faculty defined patient safety as

"students practicing in the standards of safe practice." This manifested itself in:

- Caring for emotional needs;
- Psychomotor skills;
- Psychologically;
- Psychosocially;
- Checking the five rights;
- Documentation; and,
- Keeping the patient safe.

Several responses did indicate new areas of thought, where patient safety was defined outside of the realm of the individual patient. The faculty members responded both within the systems perspective of patient safety, and used the systems vocabulary to express themselves:

Not only taking the patient and family into consideration, but that they are caring within a team environment (P1, FG8, p.1).

I think it means being proactive. That means being aware of the evidence base, or keeping an eye on what has been investigated, the latest sort of research, that sort of thing. Then it's not only what's there in front of you (P4, FG8, p.1).

First of all, avoiding adverse events. But then there's also the idea of making sure that the information is gathered in an appropriate way and interpreted so gaps do not occur. I would expect a student to go and do an assessment, then go back to the patient record and check for trends (P3, FG8, p.1).

By taking into consideration the ideas of a team environment, evidence based research, and adverse events, the faculty touched on certain concepts of systems patient safety that had not been mentioned in any of the previous focus groups. Furthermore, the faculty emphasized the importance of communication

between the students, their patients, and families. This was another concept that had not been introduced previously.

While the faculty displayed a broader understanding of patient safety, their understanding overwhelmingly remained at the level of the individual patient. Many responses did indicate a nascent understanding of patient safety beyond the patient-student interaction, however, the faculty then returned to patient safety as delivering safe patient care.

II. Students' Exposure to Patient Safety Concepts

Faculty noted patient safety concepts as being threaded throughout the nursing program. It was presented in generic terms, and focused on students' safe practice with patients:

I don't bring it out in any particular theoretical approach; it's just something you bring out again and again. Let's be safe, let's do this (P3, FG8, p.9).

I'd say it's probably within every clinical course objectives, I mean students have to demonstrate a safe practice within every clinical course. I think that in the academic courses that I've taught, it comes along with some of the concepts but I wouldn't say that it is one of the concepts (P2, FG8, p.9).

Although faculty recognized patient safety as being an inherent concept within the curriculum, they were also able to identify it in the following particular areas:

(a) The theoretical portion of the course. The faculty voiced examples of

different courses in which they felt patient safety was addressed:

- Introduction to Nursing: Professionalism, accountability, errors, and dosage calculations.
- Law and Ethics: Code of ethics, case studies, correct documentation, patient consent, best practice, and standards of practice.

- Health Assessment: Neonatal assessment, preventative care, psychomotor care, and communication skills.

(b) The skills lab. Faculty noted that the skills lab offered students a good preparation for patient safety concepts. They spoke to the strengths of skills peer-review and self-assessments conducted by the students. Medication was an accentuated aspect of patient safety in the skills lab, where knowing the five rights was an example of displaying patient safety knowledge. Finally, faculty observed that the final demonstration assessments performed by students were a good check to ensure students had an understanding of patient safety concepts within the practice context.

(c) The clinical setting. The clinical setting was described as an area to put into practice the patient safety concepts that had been acquired in the theoretical part of the nursing program. Again, the concepts were noted as being generally threaded throughout the clinical context.

We do talk about patient safety in more general terms in the orientation sessions for senior practicum, but again it's in more generic terms. I mean that's the outlying objective that students will practice safely, competently, and independently. So it is addressed in terms of how they can reach that objective, what kinds of behaviors they have to demonstrate to indicate that they are safe (P1, FG8, p. 8).

Faculty did note that it was an assumption that patient safety was recurrent throughout the curriculum. While they did address examples of patient safety in the curriculum, faculty members also suggested that patient safety could be drawn out in a more deliberate fashion i.e., to step back and determine the extent to which it was present.

It's such an assumption that patient safety is the core of everything we are and we do. To really go back and say "Look at the culture of safety" or something in a theoretical way, I don't expect that we do that. Maybe we need to take a step back (P4, FG8, p.8).

All that we need to do is add more content. To pull it out maybe in a more deliberate way (P1, FG8, p.9).

Although faculty believed that patient safety was foundational to the nursing program, they agreed there was room for improvement.

III. Patient Safety Concerns and Expectations of Students after a Patient Safety Event

Faculty members identified concerns for students entering the clinical setting. Their main concern was centered around the students' preparation for clinical practice. The possible disconnect between the skills lab and the clinical context was also noted.

It sounds like there is a potential disconnect between what is happening in the lab and what is happening clinically (P2, FG8, p.13).

From the faculty's perspective, students were challenged in the following areas:

- Medication safety: Preparation, timing, dosage, and administration;
- Patient protection: Falls, and side rails;
- Communication: Verbal, written, English as a second language students, and charting; and,
- Skills: Psychomotor, psychological, and basic.

Faculty expressed concern about students who lacked self-awareness regarding their own practice and who lacked accountability in the aftermath of a patient safety event. Faculty expected students to be accountable for their behavior.

Following a patient safety event, faculty members expected students to disclose

the error, and to contact the instructor immediately whether through e-mail, telephone, or an in-person appointment.

It's not about nurse blaming, it's about ensuring patient safety by quickly reporting any errors, and then following up with whatever can be done, and so I do stress that (P4, FG8, p.5).

Through student accountability, it was believed that these patient safety concerns could be properly addressed and prevented in the future. Faculty indicated that this post-safety event process emphasized the professionalism of the student, instead of his/her inadequacies.

IV. Role of Faculty and Clinical Instructors

With the recognition of the different areas of patient safety concern, faculty members then addressed their role in the prevention of patient safety events and in supporting nursing students. Faculty identified their foremost responsibility was to prepare students. This preparation revolved around the students' comprehension of a potential patient safety event, and also that they understood the expectations of them should one occur.

I think it's preparing. We have a responsibility to prepare students to meet the areas that we've identified in our definition of patient safety, so that they are aware of potential risks to patients but also what their responsibility is in preventing those risks, and how to deal with it if something does happen (P2, FG8, p. 2).

Faculty members also stressed the prevention of a patient safety event. Faculty wanted to ensure students were protected from committing errors.

We as educators have a huge responsibility to ensure that we're protecting our students from making those kinds of errors (P3, FG8, p.2).

Prevention entailed the promotion of patient safety through role model behavior in the classroom and clinical settings, as well as constructing a foundation of patient safety principles.

Just to ensure that they actually understand, not just specifically the words that they are looking at, but what the whole idea is, what the principle is, so that they can apply it. So that they actually understand it's not a step-by-step manual, but the principle behind it (P1, FG8, p. 2).

I think we also have a responsibility to model. I think that if you go into the clinical practice or the classroom settings, you can model a way of behavior that promotes patient safety, that puts it at the forefront, and that makes it part of who we are and how we practice (P3, FG8, p. 2).

The faculty felt that while it was their responsibility to provide students with baseline patient safety knowledge, it was the role of the clinical instructors to extract and apply this knowledge in the practical setting. Furthermore, it was the clinical instructors' responsibility to ensure that students were aware of the consequences of their actions in the practice setting.

We teach the students theory about patient safety, or how things should be done. Sometimes, the students need more support to actually bring that into reality (P3, FG8, p. 2).

I think a huge part of their role is helping students understand and learn what is safety, what are the consequences of your actions, and monitoring the students in their first skills opportunity to practice (P4, FG8, p. 2).

Overall, the faculty believed that it was the responsibility of the clinical instructors to build relationships with the students, and develop a sense of trust. This foundation of trust would assist students to practice safely, and to identify forthrightly if they were not.

I think the clinical leaders have a responsibility to ensure that students are practicing safely, because I think they learn it, but it takes time for the concept (P3, FG8, p.2).

Expert clinical instructors have that intuition; they can come across a student and just check the student's medication tray and discover that it's not correct. I have a lot of respect for that work, and I feel that it's tough for a beginning clinical teacher to learn. You have to work with students to ensure that there's ongoing safe practice and to protect the student from making some of those mistakes (P2, FG8, p.3).

In the event that a student was unsafe, the faculty understood that it was left to the clinical instructors to remove the student from the clinical setting and send them back to the lab.

One faculty member was developing a learning contract for a student who was of concern. She was saying "Well, we'll send this student to the lab" because she was concerned about this student's safety and hoped that the student would practice to become a little bit more safe (P4, FG8, p. 9).

The faculty noticed one challenge in particular for the clinical instructors and preceptors was gauging the level of student independence during his/her clinical placement. This especially became an issue at the Senior Practicum level, where students were close to finishing their program.

What happens with the preceptors in senior practice is that they have protected the student. Because they're working in such a close relationship, they don't often realize how many decisions they're actually making on behalf of the student, and how quickly they're stepping in to help the student. All of a sudden you realize the student's going to be finished in three weeks and for those kinds of reasons, they're not quite ready yet (P4, FG8, pp.10-11).

In this instance, the preceptor "protected the student" by not fostering independence in the student. Similar to the clinical instructors, Senior Practicum preceptors may or may not have teaching experience and/or expertise.

Overall, the faculty recognized their protective role in relation to their students, and the need to ensure students were positioned to prevent patient safety events from occurring. They fulfilled this role through the provision of a strong theoretical base for the students. The faculty felt this role was carried through into

the clinical setting where the clinical instructors fulfilled it. In the clinical context, it was the instructors who were responsible for maintaining the safety of both the students and patients. The mechanism by which this “carry through” occurred was not discussed.

V. Program Perspectives

Faculty discussed their perspectives regarding the nursing program and the culture that it embodied. Similar to other focus groups, faculty recognized the nursing program as being in a period of transition. They identified different aspects of the program as being founded within a culture of safety.

I believe that safety is embedded there and when you look at our policies, and you look at syllabi and objectives, and expectations, safety is the underlying factor (P2, FG8, p.19).

I think all of our policies are embedded in a culture of safety. That's what the premise is (P3, FG8, p.19).

Despite the inherent culture of safety in the policies and expectations, the faculty also believed that the structure of the program and the time limitations associated with clinical rotations contributed to a culture of blame.

It's more of a culture of blame because of the fact that we had to jump on a problem early in order to identify it, and help the student learn from it (P1, FG8, p. 19).

We find ourselves in the situation where just because of the mechanics of the rotations not providing the time for growth to occur to address those safety issues, it's a culture of blame (P3, FG8, p.19).

As the students worked within this time-compressed model, the faculty recognized that they would interpret the program as being embedded in a culture of blame. Faculty also observed that their colleagues would conversely

perceive the theoretical part of program as a culture of safety. They stated that their colleagues recognized the evaluation process as being constructive and formative. Faculty also suggested that using a letter grade to evaluate students in the clinical context fostered a culture of blame.

I think we foster a culture of blame when we grade clinical practice because I feel it's so challenging to grade clinical practice. As a consequence because we're grading, clinical leaders have to jot down the positives and negatives to help make a decision (P4, FG8, p. 20).

In relation to the nursing program, the faculty examined clinical learning contracts and their utility with the students. They discussed the relative strengths, limitations, and suggested changes to improve their effectiveness. These characteristics are presented in Table 2.13.

Table 2.13: Assessment of Clinical Learning Contracts by Faculty

Strengths	Limitations	Suggested Changes
<ul style="list-style-type: none"> • Establish if there is a pattern of concern • Give specific strategies for success • They help students to focus • Presents written plan • Itemizes areas of improvement • Allows for a sense of accomplishment among students 	<ul style="list-style-type: none"> • Not effective with students who lack self-awareness regarding their own practice • Students may become overwhelmed and perceive impending failure • Effectiveness depends on the student • Students may become defensive or discouraged with repeat contracts 	<ul style="list-style-type: none"> • Present as opportunity for growth/development, not as a punishment

Overall, faculty believed that the effectiveness of the contracts was highly dependant on the student. The student's reception of the contract varied by her/his ability to recognize and evaluate her/his own practice:

I think it depends on the student because often they are very helpful in terms of helping the student identify what they need to do, but if they don't have insight then they likely won't be successful in the program (P1, FG8, p. 21).

If there isn't insight by the student, and they don't really believe that this is an issue for them, then they may meet the criteria for this time, but will carry the problems onto the next rotation (P4, FG8, p.21).

Although clinical learning contracts were not always successful, faculty believed that they were a contribution to the education of the students who took responsibility for their own actions.

VI. Factors Placing Students at Risk and Factors Supporting Students

Faculty identified factors that placed students at risk for precipitating patient safety events. Three recurring areas were identified as problematic: concerns about the clinical instructor model, concerns about the nursing program model, and lack of preparation for practice. These categories and current/proposed solutions are presented in Table 2.14.

Table 2.14: Faculty perceived factors placing students at risk and current/proposed solutions

Risk Factor	Current/Proposed Solution
1. Concerns about the Clinical Leader Model	
<i>Clinical instructor is a strong clinician with limited teaching experience</i> ***	Increase clinical instructor mentorship
<i>Lack of communication between clinical instructors</i> **	
<i>High turnover of clinical instructors</i> **/**	Increase salary to make more appealing; Ongoing professional development via Masters degree; consider clinical instructors as legitimate faculty
Lack of expertise and skill acquisition	Permanent contracts to allow for ongoing development
Clinical instructors inexperienced with ESL students	Half-day workshop with clinical instructors****
2. Concerns about the Nursing Program Model	
Lack of communication between clinical and theory	Stronger connections between clinical and theory; between faculty and clinical instructors
<i>Disconnect between theory and clinical expectations</i> */**	Formalized and regular communication between clinical instructors and skills lab
<i>Short clinical rotations and rapid evaluations foster a culture of blame</i> *	Emphasize culture of safety; encourage accountability
<i>Students frightened of repercussions when error occurs</i> */**	Allow students x-weeks clinical practice prior to evaluation
3. Lack of Preparation for Practice	
Patient safety concepts not developed in a distinctive way	Develop patient safety concept in more deliberate way; examination by curriculum committee
<i>Limited clinical experience for specific skills</i> */**	Support students via skills lab extra practice
Limited application of communication	

*Factor at risk previously identified by students

**Factor at risk previously identified by clinical instructors

***Factor at risk previously identified by administrators

****Current solutions in place indicated in light-grey boxes

1. Concerns about the Clinical Instructor Model. Faculty had numerous concerns over the clinical instructor model used within the program. Faculty recognized the clinical instructor as an essential link between the theory and clinical portions of the program, as well as a crucial formative guide for the students. That clinical instructors lacked education skills was one of the major concerns voiced by the faculty. The faculty recognized that many clinical instructors were indeed competent in their field of practice, but this did not necessarily provide them with the skills to teach students.

I really believe that it's a skill to be an effective clinical teacher, and it doesn't happen overnight. Just because you're a skilled clinical practitioner, doesn't mean you're a skilled, effective educator, and that's not saying something negative, that's just the way it is (P2, FG8, p. 22).

Faculty noted that a contributing factor to this limitation in educator skills was in part because of the lack of communication among clinical instructors. The lack of communication among clinical instructors was considered a lost opportunity whereby more experienced instructors could mentor and/or socialize with the new instructors.

I feel that given our model of clinical education, I don't know if our clinical teachers have that kind of opportunity to get together to talk about their day, to debrief, and to learn from one another (P3, FG8, p.11).

This clinical instructor mentorship was emphasized as especially important given the high turnover rate of clinical instructors. Faculty expressed concerns over the short period of time for which clinical instructors were employed. These factors placed students at risk, as clinical instructors would not be accustomed to high areas of risk, or have gained the experience to be an exemplary clinical instructor.

I find that, unfortunately, with the model of our clinical education we have a continual turnover in our clinical instructors (P1, FG8, p. 3).

We need to have some type of sense of permanence, that they will be here in another year, and we seem to have some clinical instructors who will stay for a long time and are very good and we really depend on, and then there are others who will use that as a stepping-stone to other positions. So we need to have a permanent group of clinical instructors (P4, FG8, p. 23).

Furthermore, faculty identified that clinical instructor transience prevented skill acquisition among students, undermined relationship building with students, and limited their skills to support English as a Second Language students.

It takes time and lots of ongoing with students to develop some of those abilities, and I think that there is a relationship between the developments of the clinical instructor (P1, FG8, p. 3).

It does take special skills to develop that intuitiveness, and if you have a sense of a revolving door of clinical instructors, and they're only here for a few months, they're not getting the kind of remuneration that they need to get, then I think we're not going to achieve the kind of quality clinical facilitation that we can (P2, FG8, p. 22).

The clinical instructors, what type of preparation or knowledge do they have to deal with students who are English as a second language? (P4, FG8, p.13)

The high turnover of clinical instructors was of concern to the faculty. They made several suggestions to remedy the clinical instructor model. The main recommendation was to establish permanence to the clinical instructor position. Other suggestions entailed increasing the salary associated with the position, offering ongoing professional development, and including clinical instructors as legitimate faculty members. Furthermore, it was believed that increasing clinical instructor mentorship and workshops would help develop teaching and evaluation skills while clinical instructors were working within the program. The faculty suggested that these supports for clinical instructors would help reduce

the high clinical instructor turnover rate, and increase the overall effectiveness of clinical instructors in the nursing program.

2. Concerns about the Nursing Program Model. Faculty voiced two principal concerns about the nursing program model: disconnect between the theoretical and clinical portions in a course, and the culture of blame fostered by certain clinical rotations.

A recurring concern of the faculty was the lack of communication between the clinical and theoretical domains of the nursing program. One consequence of this limited communication was faculty finding out downstream if a student was experiencing difficulties in the course, or if a serious event had occurred on the practice unit. Faculty commented that the only method of communication between the two domains was a form, which was an option rarely used.

It feels like it's not that connection with clinical instructors, and we often find out when it's too late that students are having difficulty and they get sent back for something. Suddenly there's a big issue that you just didn't pick up on, and you could've done something about more quickly. If we would have a little better connection between the theory and classroom setting, it would be wonderful.... There are forms that are available for them to fill out and send the students back, but that happens very rarely (P3, FG8, p.11).

I think there could be better communication between people on campus and the people in the clinical setting (P2, FG8, p.23).

This communication deficiency between the two program sectors created differing expectations. Faculty observed that they were unsure of the content expected in the clinical context, and this challenged their abilities to prepare students for their clinical experiences.

It sounds like one of the areas that could be improved a little bit is that potential disconnect between what is happening in the lab and what's happening clinically. So that you can't get feedback as a lab person from the clinical instructors to find what are some deficiencies or good things that are happening. If it's not happening on a regular basis or in any formalized way, that's maybe something that could be addressed (P2, FG8, p.13).

The student and clinical instructor focus groups also noted this transition from theory and skills lab into the clinical setting as difficult. This movement was particularly difficult and stressful for the students as they were graded throughout their clinical practice. Faculty noted that shorter clinical rotations made it necessary for clinical instructors to immediately collect positive and negative data about the students. This evaluation process and short time frame applied pressure to students and made rehabilitation or remediation difficult should an error occur. Therefore, the brevity of the clinical rotation was viewed as fostering a culture of blame for the nursing students.

I think it's probably more a culture of blame, because we have those very short rotations. Because there's such a short rotation, if you are going to discipline the student or put a learning contract in place, it has to be done fairly quick, so you need to document and get evidence early on (P1, FG8, p.19).

Within this culture of blame, faculty recognized students as being frightened of repercussions should a patient safety event occur.

I think we need a step back from the evaluation phase. I think constant evaluation fosters blame that to an extent and it's hard for the clinical instructors not to start collecting data (P2, FG8, p. 18).

If something does happen, they need encouragement and a real sense of security that it's not going to jeopardize their career. It's only going to add to their credibility (P4, FG8, p. 6).

We're not saying, "The axe is going to fall because you've done something" It's almost to give them permission to make a mistake and deal with that (P1, FG8, p.19).

To improve the nursing program model, faculty observed that it was essential to foster ongoing and stronger links between the clinical and classroom settings. Such communication would help to ensure standardized expectations between the theory, skills lab and practice context, thus enabling faculty to better prepare students. It would also help better support students if any problems arose during the clinical formation.

I think we are working with students to help them learn how to prepare for clinical practice, but I'm not sure if there's a real tight connection between what students are learning in theory and what the clinical instructors are expecting of students in clinical practice (P1, FG8, p.14).

Finally, it was suggested that allowing students to practice in the clinical setting without being evaluated for a certain number of weeks would help emphasize a culture of safety and teach student accountability.

3. Lack of Preparation for Practice. During the focus group interview, faculty became concerned about the lack of patient safety concept development, and limited clinical experiences for the nursing students. While faculty had commented on patient safety as an underlying theme throughout the program, it was a concern to participants that there was not a standardized definition, nor was it deliberately brought out in the theory domain of the program.

I'm thinking maybe there does need to be some type of discussion to make sure that we have an agreement within the Faculty regarding what is patient safety, and how do we bring it about. Perhaps it could be brought out in a stronger way in some courses, particularly the theory courses (P3, FG8, p.12).

Faculty members were also concerned about students completing their practicum without having practiced all basic skills at least once. A particular

concern was that of communication, as faculty members felt as though it was not emphasized as a patient safety concern.

Students need more clinical practice because sometimes students will begin their senior practicum and not have had an opportunity to practice a number of skills. It tends to be more in the surgical areas, where they may not have put in a catheter, or they may not have ever given an IM, or they may not have cared for a patient with a tracheal issue (P2, FG8, p.17).

I think a major concern is both verbal and written communication. Not only if they are communicating in a safe way, but how they are receiving communication to make sure that safe practice results (P3, FG8, p.13).

Faculty observed that it was important to develop patient safety in a deliberate way throughout the theoretical courses. One suggested method for creating this change was to examine the present theme of patient safety throughout the program and to develop it from there. Secondly, faculty stated that it was important for students to practice skills before entering into practice, either with an extension in clinical time or more practice in the skills lab.

Summary and Conclusions. As one of the main influences on students in the theoretical domain of the nursing program, the perspective and role of faculty members is significant to consider when exploring patient safety. Upon examination of the themes that arose from focus group data, several observations can be made. Of interest, faculty members were the first focus group to more fully address a systems perspective regarding patient safety. They were still, however, rooted in the definition of patient safety as existing at the level of the individual patient, i.e. safe patient care. This focus likely contributed to the students' unawareness of the systems perspective of patient safety.

Faculty members indicated that patient safety was threaded throughout the

nursing program. This was in contrast to the students, who expressed that their exposure to patient safety throughout the program was lacking, especially in the theory domain. Faculty did, however, indicate that the patient safety theme was an assumption, and they would like to examine patient safety concepts in the curriculum. When asked about patient safety concerns, the primary response concerned the lack of student preparation in the clinical sector. Students, clinical instructors, and administrators also voiced this concern. Faculty identified their role and the expectations they had of their students after a patient safety event. Faculty perceived their role as preparatory and preventative in the theoretical domain, while emphasizing the shift of responsibility to the clinical instructors for the practical application of safe patient care. When reflecting on the nursing program, the faculty thought the evaluation process constrained the transition from a culture of blame to one of safety. Furthermore, they identified the limitations of clinical learning contracts, indicating their effectiveness was predicated on the student's attitude toward the contract. Finally, faculty listed the main factors placing students at risk, and solutions that are or could be put in place to assuage them. Many of the faculty concerns coincided with those of the students and clinical instructors, accentuating problematic areas such as: lack of communication between theoretical and practical domains, variable clinical expectations, and students' lack of preparation for practice. The consistency of responses across the focus groups indicates areas of concern that have yet to be examined.

A Perspective on Patient Safety – Staff Nurses

Three focus groups (n=7) were conducted to gain insight into the concept of patient safety and nursing education from the perspective of staff nurses. The staff nurses were based in two different agency types; tertiary care hospital, and a long-term care facility. Staff nurses identified patient safety solely on the level of the individual patient, for example, advocating for a patient.

Staff nurses indicated their perception of a culture within the clinical context. They all believed that it was in a period of transition from a culture of blame to one of safety. Staff nurses considered their own role as contributing to the culture of safety as they encouraged student disclosure after an error, and understood mistakes as learning experiences. They also identified that they were role models concerning safe practice, and supportive of student growth in the clinical setting. Within this clinical setting, the staff nurses noted that medication was the primary area of concern. Finally, staff nurses reflected on the nursing program in terms of patient safety and identified factors placing students at risk. The main risks identified were related to the clinical instructor model, and specific concerns about students in the clinical setting. The staff nurses were adept in proposing solutions to mitigate these risk factors. The perspectives collected from the focus group of staff nurses was qualitatively analyzed, i.e. underwent open coding and thematic analysis, and three underlying themes were delineated as presented in Figure 2.05.

Figure 2.05: Underlying themes arising from staff nurse focus group data

<p>I. Awareness of Patient Safety and Patient Safety Concepts</p> <ul style="list-style-type: none"> • Equating safe patient care to patient safety • Perception of transition from a culture of blame to one of safety in the clinical setting <p>II. Role of the Staff Nurse Before and After a Patient Safety Event</p> <ul style="list-style-type: none"> • Staff nurse as a role model and guide • Student patient safety concerns • Staff nurse disclosure and student support after a patient safety event <p>III. Factors Placing Students at Risk and Factors Supporting Students</p> <ul style="list-style-type: none"> • Concerns about the Clinical Instructor Model • Concerns about the Clinical Setting • Lack of Preparation for Practice • Concerns about Students

I. Awareness of Patient Safety and Patient Safety Concepts.

In the theme of patient safety awareness, two main concepts arose. These are presented in Table 2.15 along with supporting textual excerpts from the focus group data.

Table 2.15: Awareness of patient safety: concepts and supporting data

Concept	Supportive Data
Equating safe patient care to patient safety	Patient safety is about reducing or managing the inherent risks that come with health care.... The realities of health care are that we have more than one patient to care for, so we have to prioritize who we see first, that we have more than one thing to do for each patient (P3, FG18, p. 2).
Perception of a transition from a culture of blame to one of safety in the clinical setting	They certainly also want to make an environment where people can come forward if they do make an error and not feel that they're not going to get the bunt of it if they have made an error. We certainly want that for the students, too, where they could come forward if they feel they've made an error (P1, FG16, p.3). I think that's a large part that we can convey, because I think that puts safety into the culture. You know, mistakes are okay, we learn from the mistakes (P3, FG18, p.6).

The staff nurses' definition of patient safety was equated to safe patient care. Echoing the perception held by all previous focus group interviews, staff nurses defined patient safety as “[patient] well being, basically that they’re kept safe, no matter what.” Safe patient care was manifested in the following areas:

- Environment
- Medication; Five rights
- Documentation
- Patient comfort
- Prevention of an event
- Being proactive
- Advocating for the patient

The staff nurses were firmly rooted in their perception of patient safety at the level of the individual patient.

When discussing the culture in the clinical setting, the nurses all agreed that it was in a period of transition from a culture of blame to one of safety. They believed that they helped foster this culture of safety by encouraging learning through the examination of mistakes. The staff nurses also indicated the importance of teamwork to further develop a culture of safety.

II. Role of Staff Nurses Before and After a Patient Safety Event.

The nurses discussed their role with students before and after a student had precipitated a patient safety event. They also discussed their patient safety concerns and areas where they supported students in this regard. These are

presented in Table 2.16 along with supporting textual excerpts from the focus group data.

Table 2.16: The role of the staff nurse: Patient safety concerns and areas of support

Concerns and Support	Supportive Data	
Staff nurse helping students and setting a good example	<p>We're role models for the students, for teaching them patient safety in everyday living (P2, FG19, p.1).</p> <p>I certainly do see it as our role as nurses to set a good example and to help them wherever we can (P1, FG16, p. 2).</p>	
Student patient safety concerns	Medication	I think meds is a big one just because it's confusing and overwhelming and there's so much to know.... All of the different formulas and that kind of thing, cause so many of your patients are on dozens of pills (P3, FG18, p. 9).
	Documentation	Documentation was another are where they really fell short. They just really didn't seem to know at all what to document, and documentation is very important, especially if they're with the resident or the patient that day a lot and we're not (P1, FG16, p. 2).
	Basic Skills	I think that the students when they first come to the unit, they do need to be better prepared with more of the very basic things. Medication, documentation, how to transfer a patient safely, knowing some of the equipment, how to position a patient before you try to feed them or give them anything to drink, and those sorts of basics (P1, FG16, p. 5).
Staff nurse disclosure and student support after a patient safety event	<p>I think that whenever we see something that isn't right, we do either speak to the student, or if we feel uncomfortable we will speak to an instructor for her to speak to the student, and I think we do a good job with that (P2, FG16, p. 5).</p> <p>We try to say it in a way that they won't get offended, you know in a way that you just learn from it, and that's all really what we can do with mistakes is to learn from it (P2, FG18, p. 4).</p>	

When describing their role in the unit in relation to the students, the staff nurses observed that they had a responsibility to help students and set a good example. Recognizing the heavy workload of the clinical instructors and preceptors, staff nurses indicated the intention of supervising students when

possible. In particular, the staff nurses encouraged skill development among the senior practicum students (Year Four). The staff nurses encouraged broader thinking amongst all students. Overall, the staff nurses voiced that the relationship they held with the students was built at their own discretion. While these staff nurses spoke to helping students on their units, they recognized that this was not necessarily the case across hospitals.

The staff nurses addressed patient safety concerns for students on their respective units. They generated the following list of responses:

- Medication: insulin, narcotics, processing medication orders, calculations
- Inconsistent documentation: charting, and reporting off at the end of the student's clinical day
- Lack of basic skills: patient positioning, patient transfers, feeding, assessment, side rails, use of equipment, communication

Similarly to all other focus groups, staff nurses recognized medications as being the number one patient safety concern. Additionally, they observed that students were nervous and overly cautious when working with medications. Staff nurses also recognized, however, that students in their senior practicum were stronger and had more confidence in themselves and their skills compared to second and third year students.

In recognition of the possible patient safety events, staff nurses then addressed their own role in this regard. In the event that they believed a student was unsafe, they stated they had the responsibility to speak directly to the student,

or to the student's clinical instructor. Furthermore, they encouraged students to report any error as soon as possible.

III. Factors Placing Students at Risk and Factors Supporting Students.

Staff nurses identified factors that placed students at risk for precipitating patient safety events. Four recurring areas were identified as problematic: concerns about the clinical instructor model, concerns about the clinical setting, lack of preparation for practice, and concerns about students. These categories and current/proposed solutions are presented in Table 2.17. Supporting textual excerpts from focus group data are presented in Table 2.18.

Table 2.17: Staff nurse perceived factors placing students at risk and current/proposed solutions

Risk Factor	Current/Proposed Solution
1. Concerns about the Clinical Instructor Model	
Seven students create a heavy workload for the clinical instructor*/**/***/*****	Decrease the number of students for each clinical instructor
Students are not well supervised on the unit*/**	Support for the clinical instructor from the staff nurses
Clinical instructor hesitant to report own students**	
2. Concerns about the Clinical Setting	
Students are uncomfortable approaching staff for help*	Increase respect for students and their questions
Students receive inconsistent and negative responses from staff*	Increase communication with staff nurses regarding student preparation and expectations
Students do not understand limitations of occurrence reports**/*****	Reassure student; construct report as a positive learning experience*****
3. Lack of Preparation for Practice	
Limited hands-on care*/**	Increase skills lab time
Lack of exposure to equipment before the clinical setting*/****	
Lack of basic skills*/**/***/*****	Increase knowledge of fundamentals; increase practice of basic skills
Inadequate time on the unit */**/*****	Increase clinical time
Students are book smart, but not regarding clinical/reality	
4. Concerns about Students	
Students are overwhelmed and nervous*/**/*****/*****	Increase confidence through more clinical experience
Students are fatigued*	
Students are rigid in approaching skills	Support broader thinking
Students want to prove themselves and do not ask for help when needed*	Encourage student questioning
Students are nervous about workload	Teach students to safely ask for help and choose priorities
Students are focused on task at hand and cannot think holistically	Expand student thinking

*Factor at risk previously identified by students

**Factor at risk previously identified by clinical instructors

***Factor at risk previously identified by administrators

****Factor at risk previously identified by faculty

*****Factor at risk previously identified by unit managers

*****Current solutions in place indicated with light-grey boxes

Table 2.18: Supportive data: Staff nurses' perceived factors placing students at risk and current/proposed solutions

Concerns	Supportive Data
Concerns about the Clinical Instructor Model	<p>Now the instructor has seven students, and it's quite a load for her so she's asked us to help as much as we possibly can (P2, FG19, p. 9).</p> <p>A couple of times students have made errors in doing their medication and there are forms that we fill out, and it almost seems like there was a hesitancy on the instructors' part to even sort of recognize or say anything about the error (P1, FG16, p. 6).</p>
Concerns about the Clinical Setting	<p>There are some nurses who are on this floor and they're not overly receptive to students. Students try asking questions and they get their head bit off, and that's probably why they don't ask any more questions (P3, FG18, p.16).</p> <p>Sometimes it's hard for them to accept to be written up, which is not actually like there's a bad report to be told about you, we just fill out an occurrence report just like anywhere else (P2, FG18, p. 4).</p>
Lack of Preparation for Practice	<p>There's a lot for them to cover in the four weeks that they're there. In the first week, you can just say that's orientation. That's three weeks on the unit, and it's not enough (P2, FG19, p. 8).</p> <p>I think if they had a little bit more preparation then they'd probably be a little bit more confident. We expect that their first couple of days is going to be overwhelming, but I think they could be better prepared with the basic things (P1, FG16, p.6).</p>
Concerns about Students	<p>They're overwhelmed, or sometimes they get so lost with all this information that I think it's very hard. Like, they got all these pieces in the puzzle, and they don't know sometimes how to put it together to make sure that they're providing safe care, because they get so focused on all these things (P1, FG18, p.10).</p>

1. Concerns about the Clinical Instructor Model. The main concern about the clinical instructor model expressed by the staff nurses was the lack of student supervision. Staff nurses believed that seven students was a heavy workload for one person, and resulted in insufficient supervision for each of the students in the group. This lack of supervision was indicated as contributing to a possible patient safety event. In addition, if a patient safety event occurred, staff nurses observed a hesitance on the part of the clinical instructors to report it, as it may reflect poorly on his/her own supervision or teaching skills.

Staff nurses suggested decreasing the number of students for each clinical instructor to supervise. They also agreed that they provided guidance to students who were at risk for making an error.

2. Concerns about the Clinical Setting. Several concerns the staff nurses had about the nursing program were previously voiced by other focus groups, most notably the students. The main concern was the discomfort and apprehension experienced by students when approaching staff for help. Although the staff nurses indicated they wanted to help students, they also observed that some colleagues were negatively disposed to student questions. Students' inability to request help was seen as putting them at risk for making an error. Upon the occurrence of a patient safety event, staff nurses also recognized that students viewed occurrence reports as blame. They believed this might prevent students from disclosing after a patient safety event.

In order to enhance the relationships between students and staff, the nurses suggested fostering an atmosphere of respect for students and their questions. Staff nurses also believed that it was important to hear how the students were prepared and what the expectations of them were, in order to offer more suitable guidance in the clinical setting. Finally, staff nurses noted the importance of reassuring students and creating a positive learning experience. This included addressing the "place" of occurrence reports to dissuade any associated fears and misunderstandings.

3. Lack of Preparation for Practice. Similarly to previous focus group interviews, staff nurses suggested that students lacked experience and basic skills upon entering the clinical setting. This manifested itself in the inability to perform tasks such as patient transfers or bathing a patient. Although staff nurses observed that students were knowledgeable, they [students] had difficulty transferring the theoretical into the clinical setting.

Staff nurses suggested that an increase in hands-on care in both the skills lab and clinical setting would contribute to the confidence and abilities of students. They believed that an increase in students' comfort in the clinical setting would also help them both apply their theoretical knowledge, and offer experience to recognize potential patient safety events.

4. Concerns about Students. The staff nurses believed that the lack of student preparation contributed to student nervousness and anxiety. Nurses suggested that students were worried about completing tasks correctly, thus preventing them from focusing on larger concepts, i.e. holistic care. Another concern was that students were unable to perform skills in a way that had varied from how they had originally been taught. The nurses viewed this rigidity as restrictive. Finally, staff nurses believed that students were sometimes hesitant about asking questions in order to assert their own independence. In combination with the students' fear and fatigue, staff nurses believed this was setting the stage for an error to occur.

Staff nurses suggested that a stronger base of fundamental knowledge and increased clinical experience would help with student confidence. They also believed that it was important to encourage student questioning. It was noted that many staff nurses already worked to expand students' thinking and encouraged students to ask for help.

Summary and Conclusions. Staff nurses' perspectives of students in the practice setting are important to consider when exploring patient safety. Upon examination of the themes that arose from the focus group data, several observations can be made. Similarly to previous focus group interviews, staff nurses equated patient safety with safe patient care. As a strong clinical influence, this likely contributed to the students' unawareness of the systems perspective of patient safety. Common to many clinical instructors, administrators, faculty members, and unit managers, staff nurses believed that the clinical setting was in a transition from a culture of blame to one of safety. Staff nurses observed that their role contributed to a safe environment by encouraging student accountability and disclosure should an error occur.

When asked about their main patient safety concerns, the principal response was medication. This concern was echoed by all other focus groups (students, clinical instructors, administrators, faculty, and unit managers). Staff nurses suggested that the clinical instructor was responsible for student guidance in the practice setting; however, they observed that supervision was sometimes lacking. As such, the nurses themselves provided guidance and support to the

students, but they also identified the reluctance of some colleagues (i.e., staff nurses) to do the same. Some colleagues displayed negative responses to student questions, which the nurses believed discouraged students from asking questions. Similar to previous focus groups, staff nurses observed that students were largely unprepared for their clinical. Again, the remedy was a suggestion of increased time in both the skills lab and the clinical setting. This increase of hands-on preparation would augment student confidence and therefore allow them to practice in a more holistic manner. Staff nurses echoed many of the concerns about student preparation and behavior previously noticed by clinical instructors and students. Thus, student preparation (i.e., acquisition of basic skills) may be an area warranting further exploration.

A Perspective on Patient Safety – Unit Managers

Six individual interviews (n=6) were conducted to gain insight into the concept of patient safety and nursing education from the perspective of unit managers. The unit managers were based in three different agency types; tertiary care hospital, community hospital, and a long-term care facility. Initially, unit managers identified patient safety solely at the level of the individual patient, for example, the right medication administered to the right patient. As the interviews progressed, however, half of the unit managers (n=3) indicated a broader systems perspective of patient safety, discussing such concepts as an “interdisciplinary team” and “systems or processes in place to ensure that patients are safe.”

Unit managers indicated their perception of culture within the clinical context. The responses were mixed. Half of the unit managers believed it was a culture of safety and the other half considered it in a period of transition from a culture of blame to one of safety. Unit managers considered their own role as contributing to the culture of safety as they were concerned with standards and expectations on their respective units. Although unit managers stated their responsibility in creating an overall safe environment, they relied on the clinical instructors to safely guide nursing students through their clinical experiences. They also expected the clinical instructors to prevent patient safety events from occurring, the principal one being medication error. Finally, unit managers reflected on the nursing program in terms of patient safety and identified factors placing students at risk. The main risks identified were related to the clinical

instructor model and the nursing program model. The unit managers were adept in proposing solutions to mitigate these risk factors. The perspectives collected from the focus group of unit managers were qualitatively analyzed, i.e. underwent open coding and thematic analysis, and three underlying themes were delineated as presented in Figure 2.06.

Figure 2.06: Underlying themes arising from unit manager focus group data

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| <p>I. Awareness of Patient Safety and Patient Safety Concepts</p> <ul style="list-style-type: none">• Awareness of a systems perspective• Perception of a culture of safety or a period of transition from blame to safety <p>II. Role of Unit Manager Before and After a Patient Safety Event</p> <ul style="list-style-type: none">• Unit manager role in fostering a culture of safety• Student patient safety concerns: medication, judgment, patient falls• Expectations of clinical instructors regarding patient safety• Reliance on occurrence reports <p>III. Factors Placing Students at Risk and Factors Supporting Students</p> <ul style="list-style-type: none">• Concerns about the clinical instructor model• Concerns about the nursing program model• Concerns about occurrence reports |
|--|

I. Awareness of Patient Safety and Patient Safety Concepts

In the theme of awareness of patient safety, two main concepts arose. These are presented in Table 2.19 along with supporting textual excerpts from the focus group data.

Table 2.19: Awareness of patient safety: concepts and supporting data

Concept	Supportive Data
Awareness of the systems perspective	<ul style="list-style-type: none"> • 50% (n=3) indicated knowledge of systems • Advocated systematic data collection to identify patient safety issues <p>There are a few ways of looking at patient safety.... The emphasis on patient safety now is to not look at human errors, but that there are systems or processes that need to be put in place to ensure that these patients are safe (P1, Interview (I) 14, p.1).</p>
Perception of a culture of safety or a period of transition from blame to safety	<ul style="list-style-type: none"> • 50% indicated a culture of safety; 50% indicated a period of transition • 33.33% believed occurrence reports created a culture of blame from the perspective of students <p>Oh, it's definitely a culture of safety. It's probably one of the strongest things (P1, I10, p. 6).</p> <p>I see at this point and time that we're moving towards a culture of safety. The old culture of blame was an old organizational behavior that is being dissipated now. I see that staff are becoming more conscious of safety issues and we are moving away from the blame culture. However, when an individual fills out an incident report, there is still a sense that they will be blamed for their mistake (P1, I11, p. 4).</p>

The unit managers had the greatest awareness of patient safety compared to the other focus group interviews (i.e. students, clinical instructors, administrators, and faculty). Of interest, 50% (n=3) indicated knowledge of a systems perspective, using processes instead of human blame to account for error on

clinical units. They also employed systems vocabulary such as “interdisciplinary team”, “data collection”, and “systems processes.” Of note is that the unit managers also indicated only minimal contact with the students on their unit. When asked about the culture in the clinical setting, 50% (n=3) indicated a culture of safety, while the other 50% observed a period of transition. Half the unit managers indicated that while there were improvements that fostered a culture of safety, the occurrence [incident] reports could be viewed as punitive. Furthermore, it was believed that since students were constantly evaluated, this might have contributed to their sense of a culture of blame on the units. Faculty and students also voiced this observation.

II. Role of Unit Manager Before and After a Patient Safety Event

Four main concepts arose with respect to the role of the unit managers before and after a patient safety event. These are presented in Table 2.20 along with supporting textual excerpts from the focus group data.

Table 2.20: The role of the unit manager: Patient Safety concerns

Concept	Supportive Data	
Unit manager role in fostering safety	My role as a unit manager is important because it's an outcome. The outcome of no harm, or minimal harm to patients, families, and staff (P1, 113, p.1).	
Student patient safety concerns	Medication	Probably the biggest thing is medication. The administration, and more often than not missed doses, or things that are late, because it's the ability to organize your time and do all the care needs plus give your meds on time (P1, 112, p.2).
	Judgment	The issues I see with safety are related to judgment.... Those to me are serious breeches of what I would consider reasonable prudent practice of anybody who was a nurse (P1, 113, p.2).
	Falls	Falls is the other thing that they are frequently involved in (P1, 114, p. 2).
Expectations of clinical instructors regarding patient safety	In the safety aspect, I think I rely a lot on the facilitators to have a good understanding of their students (P1, 110, p.1). The error is reviewed by the clinical instructor, and depending on what the error is, then that clinical instructor decides what the consequences are (P1, 111, p. 2-3).	
Reliance on occurrence reports	The only way we can get data and make some changes is if in fact occurrence reports are generated so that we can look at what went wrong, and what we can do next time (P1, 19, p.1).	
	I guess mainly through occurrence reports, like that's probably the biggest tool that's used to identify and fix those things that are patient safety issues (P1, 114, p.1).	

Unit managers indicated their role as fostering a culture of safety on their respective units. This occurred through setting standards and guidelines for safety, and also minimizing any potential harm that could occur on the unit. Unit managers also spoke to their limited contact with the nursing students, and 100% (n=6) agreed that they relied on the clinical instructors to provide guidance and safety to the students on the unit.

When asked about student patient safety concerns on their unit, the managers generated the following list of responses:

1. Medications: Omission, wrong time, wrong dose, wrong patient, lack of communication, lack of organization;
2. Lack of judgment regarding prudent nursing care;
3. Patient falls.

Among the responses, 100% (n=6) agreed that medication was the principal area of concern. One unit manager also indicated that while there were patient safety concerns, he/she felt that 90% of the nursing students on the unit were strong and less at risk to precipitate a patient safety event.

Upon a patient safety event occurring, unit managers indicated a reliance on both occurrence reports and clinical instructors. Unit managers perceived patient safety as being addressed through the occurrence reports, as the reports documented both the event and future prevention. They also indicated that it was at the discretion of the clinical instructor to forward the information to the education sector, and how to treat the patient safety event itself. When asked if student occurrence forms were independently tracked, responses were mixed as 66.67% (n=6) indicated that students were not indicated on the forms, while the remaining 33.33% indicated that they were. Regardless of either outcome, all unit managers stated that there was no further tracking of the student data by either the clinical or education sectors. This is further addressed in the following section.

III. Factors Placing Students at Risk and Factors Supporting Students

Unit managers identified factors that placed students at risk for precipitating patient safety events. Three recurring areas were identified as problematic: concerns about the clinical instructor model, concerns about the nursing program model, and concerns about the occurrence reports. These categories and current/proposed solutions are presented in Table 2.21. Supporting textual excerpts from focus group data are presented in Table 2.22.

Table 2.21: Unit manager perceived factors placing students at risk and current/proposed solutions

Risk Factor	Proposed Solution
1. Concerns about the Clinical Instructor Model	
<i>One clinical instructor for too many students*/**</i>	Decrease the number of students for each clinical instructor
<i>One struggling student per clinical instructor decreases supervision for all students*</i>	Involve staff nurses; foster a stronger connection between students and staff
<i>Lack of communication among clinical instructors, staff, and students*/****</i>	Discuss patient safety upfront among students, staff, and clinical instructors
<i>Clinical instructors' expertise may not match the clinical area of direct student supervision*/**/***</i>	Match between clinical expertise and area of supervision; increase salary to attract more experienced instructors
2. Concerns about the Nursing Program Model	
<i>Disconnect between clinical and education sectors, no communication*/**/****</i>	Increase formalized communication between the two sectors
<i>Clinical staff do not know nursing program curriculum/expectations*/****</i>	Increase communication between systems regarding patient safety
Education sector does not follow-up on students' clinical experience	Increase follow-up; presence of an educator on the clinical procedure and policy committee
<i>Faculty of Nursing perceived as a culture of blame*</i>	Use group debrief as a learning experience to foster patient safety*****
<i>Students lack basic skills*/**/****</i>	Increase time for students in the clinical setting
<i>Students are stressed and vulnerable*/**/****</i>	Unit manager meets with students to discuss patient safety; provide students with an inventory regarding common patient safety occurrences on each respective unit
3. Concerns about Occurrence Reports	
Day-to-day data are buried within the clinical system	Data should go to the faculty and undergo pattern analysis
Lack of clarity/consistency regarding students and occurrence reports	Consistently acknowledge student status on occurrence reports
<i>Students do not understand limitations of occurrence reports**</i>	Discuss the reality of occurrence reports with students

*Factor at risk previously identified by students

**Factor at risk previously identified by clinical instructors

***Factor at risk previously identified by administrators

****Factor at risk previously identified by faculty

*****Current solutions in place indicated with light-grey boxes

Table 2.22: Supportive Data: Unit managers' perceived factors placing students at risk and current/proposed solutions

Concerns	Supportive Data
Concerns about the Clinical Instructor Model	<p>You need to have more involvement from the staff nurses. The clinical instructor has seven students and by the end of their rotation they each have two patients, so that's fourteen patients that she needs to be responsible for which is more than should be expected of anyone (P1, I14, p.7).</p> <p>I think definitely the clinical instructor has to have a clinical knowledge base. We recently had an experience where the instructor did not have a knowledge base in the setting and it created a lot of stress for the students, and for the staff. As a result, the students had a very negative experience (P1, I11, p.5).</p>
Concerns about the Nursing Program Model	<p>More time on the unit. When you're only here for two and a half days a week, you have to cram a lot of learning into whatever the eight-week period is (P1, I12, p.6).</p> <p>We could use a tool having information from where the common [safety] occurrences happen in relation to a medicine area versus a surgical area (P1, I10, p. 8-9).</p> <p>There's a huge gap between the university and service providers. It's a huge gap. And there doesn't seem to be any initiative on their part to understand. We never get asked for feedback about how the clinical rotation has gone. I never get asked input about the clinical instructors (P1, I13, p. 6).</p>
Concerns about Occurrence Reports	<p>There seemed to be a very loose connection between my director to the school. What we have been recently talking about is that it should also go to the faculty... cause they can't make change if they don't have the data to show what's going on (P1, I9, p.4).</p> <p>One of the students recently made an error and brought me the occurrence report and was visibly shaking, and had some idea that these occurrence reports stay with you for your career and that if you get too many, you're out the door and lose your license. Her concept of what happens when these things get filled out identifies what discourages people from filling them in (P1, I14, p. 3).</p>

1. Concerns about the Clinical Instructor Model. Unit managers expressed their reliance on the clinical instructor as the main source of patient safety guidance during the students' clinical experience. As the clinical instructor was seen as key for the students' support, the unit managers expressed several areas of concern about the clinical instructor model. Foremost was the ratio of one clinical instructor to a group of six or more students. This was perceived as an unreasonable supervisory burden for one person. In addition, it was voiced that if one nursing student struggled, this reduced the availability of the instructor to supervise the other students in the group. Unit managers also indicated that the lack of communication among clinical instructors, staff, and students exacerbated clinical instructors' stress and increased their responsibilities. Unit managers suggested that creating communication links among all three parties would foster better working relationships and mutual support. Consequently, students would have multiple sources of guidance in the clinical area and clinical instructors would be less overwhelmed with responsibility. Finally, unit managers thought it was crucial to have a clinical instructor supervising on a unit that matched their clinical experience.

2. Concerns about the Nursing Program. Several concerns the unit managers raised about the nursing program were previously voiced by other focus groups, most notably the faculty. The main concern was the disconnect between the clinical and education domains. This gap led to differing expectations, and a lack of feedback from both sides. Secondly, a few unit managers voiced their perception of the faculty of nursing as a culture of blame. They felt that the culture of blame contributed to the stress and vulnerability of the students. In

order to bridge the two sectors of the nursing program, unit managers suggested formalized and regular communication. They also recognized that students could benefit from more time in the clinical setting. Finally, unit managers observed that meeting with students and conducting discussions about common patient safety concerns would support students and thus prevent possible patient safety events.

3. Concerns about Occurrence Reports. While all unit managers agreed that occurrence reports were a satisfactory method of tracking patient safety events, there was a lack of clarity about the process involved. Despite the completion of occurrence reports, unit managers all indicated that the records likely stayed within the clinical setting. The unit managers also all agreed that they never received feedback about the occurrence reports from the education sector. Furthermore, since most agreed there was no student designation on the report, it was uncertain if the reports could be used to analyze occurrence reports where the originator was a student. Finally, the unit managers recognized that students had misconceptions regarding the consequences of the reports and this misunderstanding discouraged students from completing them.

Unit managers suggested that the reports be completed and identified as student precipitated, and then shared with faculty of the program. It was also suggested that the rationale behind occurrence reports should be clarified with students.

Summary and Conclusions. Unit managers' perspectives of the relationships among students, clinical instructors, and staff were important to consider when exploring patient safety in the clinical environment. Upon examination of the themes that arose from the focus group data, several observations were made. Of interest, unit managers were the only nursing group to indicate a significant understanding of patient safety from a systems perspective. As the focus group that also indicated the least amount of contact with students, this likely contributed to the students' unawareness of the systems perspective of patient safety. Unit managers had mixed responses regarding their perception of culture within the clinical context. Similar to many clinical instructors, administrators, and faculty members, half the unit managers declared the culture as being in a transition from one of blame to one of safety. Unit managers believed their role contributed to a safe environment.

When asked about their main patient safety concerns, the principal response was medication. This concern was echoed by all other focus groups (students, clinical instructors, administrators, and faculty). Unit managers relied on the clinical instructors to intercept any potential patient safety events. Again, all other focus groups indicated a similar reliance on the clinical instructor within the clinical setting. The clinical instructors themselves acknowledged the consequent pressure given their respective responsibilities. Unit managers echoed many concerns about the clinical instructor model previously established in the findings. They observed a high number of students under the guidance of one clinical instructor, and suggested that stronger relationships with staff would

enhance patient safety on the units. Unit managers also indicated concerns about the lack of communication between the education and clinical domains of the nursing program. This gap was also noticed by many of the other focus groups. Finally, unit managers indicated that in accordance with their frequent use of occurrence reports, they should be standardized not only in terms of completion, but also in terms of the flow of information between the clinical and education sectors. This flow would also aid to track student data and change any education/clinical processes to improve patient safety. Concerns regarding the clinical instructor model and the nursing program have been consistently identified by the different focus groups. Thus, these areas of concern should be further explored.

Perspective on Patient Safety – Risk Managers

One collective interview and one individual interview (n=3) were conducted to gain insight into the concept of patient safety and nursing education from the perspective of risk managers. Risk managers spoke to their patient safety perspective, recognizing it on both the level of the individual and the from the systems perspective. Similar to previous focus groups, risk managers believed that the clinical setting was undergoing a transition from a culture of blame to one of safety. Finally, risk managers reflected on the nursing program in terms of patient safety and identified factors placing students at risk. The main risks identified were related to the nursing program model, concerns about students, and concerns about occurrence reports. The risk managers were adept in proposing solutions to mitigate these risk factors.

I. Patient Safety Awareness and Factors Placing Students at Risk

Risk managers provided a range of responses when asked about patient safety. Many responses equated it to safe patient care, but the risk managers also commented on systems, processes, and a culture of safety. One risk manager believed that progress depended on systems thinking, and examining the relationship between individual components forming the system. This same risk manager stated that development of patient safety would impact all components in the professional health system, i.e. nursing, medicine, pharmacy, etc. All risk managers (n=3) believed that the clinical setting was undergoing a transition from a culture of blame to one of safety. Supporting textual excerpts from focus group data are presented in Table 2.23, along with risk factors putting

students at risk for precipitating a patient safety event. These factors and proposed solutions are also explored in Table 2.24.

Table 2.23: Supportive Data: Risk managers' awareness of patient safety and perceived factors placing students at risk

Concept	Supportive Data
Awareness of Patient Safety	<p>It was always in the background that with patient safety you need to have safe practice (P1, FG15, p.4).</p> <p>Progress in safety depends on a very broad systems thinking approach, a very holistic approach which necessarily examines relationships between the various components in the system (P1, I17, p.1).</p>
Concerns about Nursing Program Model	<p>I don't think there has been a big focus on patient safety with nursing education. It's not to say that it isn't there, it's always in the background, but I don't think there is a main sort of in your face patient safety (P1, I15, p.1).</p> <p>We were never asked to link with the Faculty of Nursing, and I often thought that there was a gap in the reality versus what the students are getting (P2, I15, p. 3).</p> <p>If you're a lucky student you get a really good mentor, but sometimes you don't (P2, I15, p. 10).</p> <p>I know it is absolutely missing in medical student training is a little bit more of the broader, almost philosophic understanding of these issues.... Those kinds of questions about cause and effect that lead us into the whole area of systems thinking (P1, I17, pp.5-6).</p>
Concerns about Students	<p>As students, at first we can be so timid and unsure, and we lack confidence, and communication is so important, to be able to advocate and stuff (P2, I15, p. 5).</p> <p>I don't know how many people are aware that if they're uncomfortable, they can say, "No, this to me is unsafe and I can't validate in my mind why I would do this" (P1, I15, p.10).</p>
Concerns about Occurrence Reports	<p>I think it might be useful to the Faculty of Nursing if there were enough of them [reports] to surmise any trends or allude to any kind of learning needs that might be out there, but I don't think we get enough of them (P1, I15, p. 7).</p> <p>Collectively, we doubt that there is very much worthwhile to learn from their observations or their experience, so with respect to medical students, pharmacy students, and nursing students, we want to shield them from the harsh realities of a patient being harmed and the investigation that follows that (P1, I17, p. 3).</p>

Table 2.24: Risk manager perceived factors placing students at risk and proposed solutions

Risk Factor	Proposed Solution
1. Concerns about Nursing Program Model	
<i>Disconnect between education and clinical sectors</i> */**/****/*****/*****	Foster connection so education sector can surmise trends and change learning needs
<i>Patient safety concepts not developed in a distinctive way</i> **/**/****/*****/*****	Provide students with a broader, more philosophic systems thinking
Patient safety exposure depends on Clinical Instructor priorities	Review with patient safety with clinical instructors
2. Concerns about Students	
<i>Students' inability to refuse when nurses expect tasks of them that they are unprepared to perform</i> **	Role play with students to expose them to the reality of the clinical setting
<i>Students are timid, unsure, and lack confidence</i> */**/****/*****/*****	Mentorship and discussion with risk manager
<i>Students are unable to communicate effectively</i> **/**/****	
3. Concerns about Occurrence Reports	
Occurrence reports are anonymous and therefore cannot be tracked for students	Develop database to see contributors to patient safety events
Student mistakes are perceived as learning and consequently are not reported	Include anonymous student reports
<i>Day-to-day data are buried within the clinical system</i> ****	Share information across disciplines and systems
<i>Occurrence reports perceived as blame</i> */**/****/*****/*****	Create a ten minute user video to make reports less intimidating to use; use as a learning process for the person, not just a report

- *Factor at risk previously identified by students
- ** Factor at risk previously identified by clinical instructors
- *** Factor at risk previously identified by administrators
- **** Factor at risk previously identified by faculty
- ***** Factor at risk previously identified by unit managers
- ***** Factor at risk previously identified by staff nurses

Risk officers believed that students were not adequately prepared regarding patient safety and that it was lacking in the curriculum. When it was present in the curriculum, it was as an underlying theme and not explicitly developed. Within the clinical setting, the exposure to patient safety was almost entirely dependant on the clinical instructor and their priorities.

The risk managers observed that it was important to foster patient safety education within the nursing program. Suggestions to enact this were to provide a more philosophic and systems approach in the students' education, and provide additional education to the clinical instructors regarding patient safety. This different approach in the students' education was thought to foster more confidence amongst the students. Within the systems perspective, risk managers believed students would be more accountable and assertive. Risk managers also proposed creating discussions, mentorship, and role-playing around potential patient safety events to better prepare the students for the reality of the clinical setting.

Finally, the risk managers commented on occurrence reports and their limitations. They suggested that the reports were construed as blame, and consequently instructors in the clinical setting may be reluctant to complete the reports involving students. They also recognized that the data were tracked anonymously and thus it was difficult to separate student data from the other reports.

Risk managers suggested using the occurrence reports as a learning experience for the individual to make it a more positive event. They also suggested creating a user video to make them less intimidating. The risk managers noted that tracking student reports separately would be useful, especially if they could be sent back to the education sector to aid in remodeling the learning needs of the nursing students.

Summary and Conclusions. Although the risk manager position is distant from that of the nursing students, the focus group interviews generated some different but relevant observations. Although a few of the risk managers recognized patient safety as safe patient care, they also voiced the concept of examining the nursing care system in terms of relationships, systems, and processes. Many of the risk managers' concerns echo those of previous focus groups, most notably those about the lack of data compilation, and the disconnect between the education and clinical settings. The risk managers' recommendations of creating a stronger foundation in patient safety theory for the nursing students was suggested as fostering confidence and accountability, leading to more positive learning experiences. Using their expertise in the area of patient safety, their suggestions for a more integrative systems approach to nursing education may be important for future areas of exploration.

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