

Table 2 Characteristics of Selected Tertiary Hospitals in the National Capital Region included in the Patient Safety Survey (Sep 2006 – Mar 2007)

Characteristics of Hospitals	Government Hospitals (n=28)	Private Hospitals (n=28)	Total Hospitals (n=56)
Bed Capacity, %			
Fewer than 100 beds	11 (3)	18 (5)	14 (8)
100-199	21 (6)	32 (9)	27 (15)
200-299	29 (8)	36 (10)	32 (18)
Above 300	39 (11)	14 (4)	27 (15)
Ratio of Nurses to Patients admitted			
In-patients	1:16 (28)	1:7 (27)	1:12 (55)
Patients for surgery	1:14 (25)	1:7 (24)	1:11 (49)
Manpower Complement, Mean (± SD)			
Fulltime Physicians Employed	142 (±140)	157 (±141)	150 (±140)
Fulltime Nurses Employed	190 (±206)	165 (±163)	177 (±184)
Patient safety was articulated in the hospital's mission and/or vision statements, %	68 (19)	82 (23)	75 (42)
Availability of adverse event reporting system, %	89 (25)	93 (26)	91 (51)

Table 3 Quality Assurance Activities in Selected Tertiary Hospitals in the National Capital Region included in the Patient Safety Survey (Sep 2006 – Mar 2007)

Quality Improvement Activities of Hospitals	Government Hospitals (n=28)	Private Hospitals (n=28)	Total Hospitals (n=56)
Quality Improvement Activities, %			
Clinical Practice Guidelines	96 (27)	82 (23)	89 (50)
Complaints Analysis	82 (23)	96 (27)	89 (50)
Medical Audits	96 (27)	82 (23)	89 (50)
Morbidity and Mortality Meetings	93 (26)	86 (24)	89 (50)
Credentialing and Clinical Privileging	79 (22)	93 (26)	86 (48)
Expanded Incident Monitoring	68 (19)	89 (25)	79 (44)
Utilization Review	61 (17)	64 (18)	63 (35)
Sentinel Event Monitoring	54 (15)	54 (15)	54 (30)
Clinical Pathways	50 (14)	54 (15)	52 (29)
Variance Reporting and Analysis	29 (8)	50 (14)	39 (22)
Staff Trainings on Patient Safety Issues, %	93 (26)	100 (28)	96 (54)
Average number of safety programs, Mean (± SD)	4 (±2)	4 (±3)	4 (±2)

Table 4 Clinical Decision Support System Provided in Selected Tertiary Hospitals in the National Capital Region included in the Patient Safety Survey (Sep 2006 – Mar 2007)

Clinical Decision Support Systems	Government Hospitals (n=28)	Private Hospitals (n=28)	Total Hospitals (n=56)
Presence of clinical decision support system, %	11 (3)	21 (6)	16 (9)
Clinical Decision Support System, %			
pharmacy computer system	25 (7)	54 (15)	39 (22)
drug dosing calculators	18 (5)	14 (4)	16 (9)
computerized physician order entry system	4 (1)	11 (3)	7 (4)
wireless PDA	7 (2)	4 (1)	5 (3)

Description of the Hospitals' Systems of Reporting Adverse Events

Majority of the hospitals reported the availability of adverse event reporting systems (93%) and 79% (42/53) expressed having patient safety articulated in the hospital's mission and /or visions statements. Unfortunately, only 48% (27/56) of hospitals had responded that they had a clear definition and list of examples of adverse events.

The proportion of hospitals who reported availability of any form of adverse event reporting system did not differ significantly between government (89%) and private hospitals (93%), between training and non-training hospitals (92% and 91%, $p > .05$) and across hospitals in different locations using the PhilHealth classification (central - 95%, north - 91% or south - 86%, $p > .05$).

The most common system of reporting adverse events is thru the use of incident report forms. Some hospitals reported using memos, adverse report forms and written reports, which may include investigative reports of the nursing service, blood transfusion reports and daily 24-hour reports of senior house officers and nurses. Medical audit and/or mortality or morbidity conferences have been cited as the primary venues of reporting the adverse events.

Adverse events are usually brought to the attention of the administration (medical chief), department chiefs, physician heads, immediate supervisors or department heads. Although only 33 out of the 56 hospitals have personnel handling adverse events, 89% (50/56) have committees involved in the management of these events. These committees are: Therapeutics, Ethics, Blood Transfusion, Quality Assurance, Ad hoc, Mortality and Morbidity, Infection Control, Risk Reduction or

Grievance Committees and the Hospital Peer Review Board. One hospital had a Peer Review Committee and another government hospital had a Utilization Review Committee.

Four hospitals attested to submitting reports of adverse drug events to BFAD and the balance score card (a system that measures and manages an organization's progress towards strategic objectives) has been implemented in one hospital.

The hospitals illustrated their own reporting system, strategies and personnel job descriptions as follows:

"Incident report is submitted to assigned caretakers. Caretakers conduct preliminary investigation then endorses to risk reduction and management committee".

"Routine active surveillance plus voluntary reporting"

Safety Programs to Protect Patients from Adverse Events

The majority of the hospitals conduct staff trainings on patient safety issues (54/56) with the average number of safety programs reported at 4 (SD±2). Private hospitals reported having more staff trainings on patient safety issues than government hospitals. Two tertiary government hospitals acknowledged that they do not have these types of trainings for the members of their staff.

The safety programs for the protection of patients may be divided into educational, structural and administrative. The largest part of the enumerated safety programs dealt with supplementing the knowledge and capabilities of the health professionals (nurses, doctors, allied medical

personnel) through orientation and trainings in intravenous (IV) therapy, first aid, advanced cardiac life support and guidelines on drug administration.

Programs addressing physical structure and arrangement include providing side rails in all beds, putting up signages on standard operating procedures (SOP) and safety policies, ensuring presence of fire exits, warning signs and radiation hazards and installing surveillance cameras.

Administratively, the hospitals ensure patient safety through implementation of systems for referrals, establishment of programs on waste management, fire prevention and disaster preparedness, orientation of patients and caregivers upon admission and issuance of guidelines on infection control and adverse drug reactions. Conduct of daily bedside rounds, endorsements and grand rounds, and regular monitoring of residents and interns are also some of the ways employed by the hospitals in ensuring the safety of the patients. Credentialing and clinical privileging (a process that matches the work that a practitioner wishes to perform in a hospital with his or her demonstrated competence and professional skill), as well as other quality assurance programs, were also mentioned as part of the strategies for patient safety. Issuing health advisories and maintaining the set nurse-patient ratio were also cited by two hospitals.

Description of Periodic Survey and Sentinel Event Monitoring Conducted by Hospitals

Thirty seven hospitals (67%) reported doing periodic survey to detect and report events (Table 1). Monthly accomplishment reports or periodic reviews of incident reports were also done by a large proportion of hospitals. Some activities carried out to monitor these events included daily rounds, 24 hour reports or daily recording of events in a logbook. Monthly meetings are the usual venue to discuss actions or measures to address the events.

There was no specific sentinel event monitoring system in any of the hospitals interviewed. The majority stated incorporating the sentinel event monitoring with the incident monitoring system, or integrated as part of the mortality and morbidity reports/meetings. Documentation of the events is done through incident report forms, as part of the patient charts or as narrative reports.

Cases of sentinel events are reported most commonly to higher authorities such as the medical director, chief of clinics, department heads, or supervisors and are usually discussed in committee meetings – quality assurance, ethics and infection control.

Two of the hospitals conduct root-cause analysis of reported sentinel events and in one hospital, analysis of error is done. Recommendations and decisions arising from the investigation of sentinel events are forwarded to the administration for appropriate action including changes in systems quality design.

Preventive and corrective measures are then prepared to minimize recurrence. Regular monitoring and updating of staff on sentinel events are also carried out in a few hospitals.

Steps Undertaken by Hospitals after an Adverse Event is reported

Investigation is the primary action common to most hospitals after an adverse event has been reported. The succeeding steps after the reporting may be classified as either "negative" or "positive" measures or reinforcements. The negative measures maybe in the form of a warning, reprimand, suspension, sanction and even termination from employment. The positive actions consist of trainings, re-training for staffs, counseling, orientation or re-education, coaching and review.

Recommendations formulated based on investigative reports are given to appropriate authorities (medical director/legal department).

Some respondents commented on the process of adverse event monitoring in their hospitals as follows: "*appropriate punishment given,*" "*provide feedback to patient,*" and "*committee on ethics and performance makes a fact finding report.*"

Feedbacks and Incentives to Medical Staffs

All hospitals provide feedback of adverse events to the concerned staff. Twenty one percent (12/56) have incentive provisions for staff who report adverse events.

Feedbacks are most commonly given in the form of a memorandum, a written communication or a formal letter to the concerned personnel, although, verbal communication/feedback through a face-to-face discussion is also used. The feedback may either be a reminder, warning, or sanction, which may be passed through specific officers – resident on duty (ROD), inspector general, unit head, medical director or department head; or

through different committees (transfusion committee, therapeutics committee, ethics committee, medical audit, medical advisory board or joint advisory board).

There are some hospital officials who choose to discuss the adverse events and provide feedback during committee, department or regular staff meetings, annual audits, or conferences. Re-education, re-orientation or re-training of concerned medical personnel and counseling and discussion of corrective measures are some of the activities made by hospitals during the feedback. Other forms of feedback occur during investigation and participation in root cause analysis.

Recognitions, commendations or acknowledgments are the most common forms of incentives given by the hospital administration to staff members who report adverse events. A lesser sanction is given by a few hospitals to a staff who voluntarily reports his/her involvement in an occurrence of adverse event. Only one hospital reported that an increase in salary maybe given to a member of the staff who reports an adverse event.

Commonly Reported Adverse Events in the 56 Hospitals

The five most common adverse events reported in the hospitals in the past year included medication errors, accidents, procedural errors, nosocomial infections and IV burns. Other adverse events mentioned include adverse drug events, communication errors, delay in management and referrals, blood transfusion reactions and suicide.

Among the government hospitals visited, the three most common adverse events cited by the hospital representatives were accidents, nosocomial infections and medications errors. On the other hand, among privately owned institutions, the most common include medication errors, accidents and procedural errors (Table 5).

Eighty nine percent or 50 out of the 56 hospitals have a compilation of the adverse events reported and are usually compiled by department (20%), by the QA committee (15%) or by the nursing service (15%).

Strategies for Adverse Event Prevention and Reduction

Educational interventions are the major format of the adverse event prevention and reduction strategies of tertiary hospitals in Metro Manila. Trainings, lectures and orientations on topics such as disaster preparedness, IV therapy, basic life support, patient safety review and reiteration of standard operating procedures are the concentration of hospitals in terms of adverse event prevention.

Improvement in the administrative aspect of the monitoring system is another method by which the hospitals endeavor to reduce and prevent

Table 5 Most Commonly Reported Adverse Events in Selected Tertiary Hospitals in the National Capital Region included in the Patient Safety Survey (Sep 2006 – Mar 2007)

Most Commonly Reported Adverse Events	Government Hospitals (n=28)	Private Hospitals (n=28)	Total Hospitals (n=56)
Medication Error	36% (10)	70% (19)	53% (29)
Accidents	46% (13)	37% (10)	42% (23)
Procedure Error	21% (6)	30% (8)	26% (14)
Nosocomial Infection	39% (11)	7% (2)	24% (13)
Adverse Drug Events	21% (6)	30% (8)	17% (9)
IV Burn	14% (4)	11% (3)	13% (7)
Communication Error	7% (2)	15% (4)	11% (6)
Delay in Management and Referral	7 % (2)	11% (3)	9% (5)
Blood Transfusion Reaction	11% (3)	4% (1)	7% (4)
Suicide	7% (2)	4% (1)	6% (3)
Others	32% (9)	30% (8)	31% (17)
None	18% (5)	11% (3)	15% (8)

adverse events. This is accomplished through regular monitoring and meetings, close supervision by the consultants, establishment of committees e.g. therapeutics, infection control, adverse drug reaction, blood transfusion, disciplinary, peer review and ethics committees, audits and case conferences and establishment of a referral system.

Hospitals also update policies and SOPs, implement signage, and draft guidelines, flow charts and manuals for nursing care. Other strategies also include enforcing safety measures such as provision of masks and goggles, use of name tags, use of one medicine tray per patient, regular check up of equipment and proper waste disposal.

Some distinct responses worthy of mention include risk management monitoring by nursing performance review board, night rounds every two hours by the nursing supervisor, improvement of system of drug procurement, allocation of budget for patient safety, nonpunitive sanction if event is system related and "*patient safety goal caretakers.*"

Nature of Complaints Received by Hospitals

Some hospitals gave general descriptions of the complaints they received i.e. errors in commission/omission and sentinel event.

The most common complaints received by majority of the hospitals were patient falls, medication errors and problems in IV insertion, either multiple failed insertions or phlebitis. Other complaints cited by the hospitals were death in the operating table, wrong site surgery, adverse drug reactions, scarcity of hospital resources, structural problems such an open pit and a slippery ramp, expired drug, misdiagnosis, burn, delay in delivery of care, sexual harassment and problems in the attitude and demeanor of

some of the staff. Some non-medically related complaints received include theft, noise and labor issues.

Primary complaints involved in litigation or legal proceedings

A small number of hospitals (17/53) reported being involved in any legal proceeding or litigation about adverse events. Misdiagnosis was the most common primary complaint leading to a litigation followed by wrong site surgery. Other primary complaints include bed sores, expired medication, anaphylactic shock, delay in intervention, fall, negligence, and problem with the consent form.

In this study, the results have shown that, in the last five years, there was a greater proportion of government hospitals (36%, 10/28) compared to private hospitals (25%, 7/28) that have been involved in legal proceedings or ligations about adverse events.

Conclusions

The most common form of adverse event reporting system among the tertiary hospitals in National Capital Region is the use of Incident Report Forms. The adverse events are investigated and discussed in committee meetings. Recommendations are made, which commonly include sanctions and penalties for the person/s involved.

The five most common adverse events reported in the hospitals in the past year included medication errors, accidents, procedural errors, nosocomial infections and burns involving intravenous fluids/medications.

The most common quality assurance activities currently in place among tertiary hospitals in Metro Manila are Clinical Practice Guidelines, Complaints Analysis, Medical Audits, Morbidity and Mortality Meetings and Credentialing and Clinical Privileging.

Discussion

The basic role of patient safety reporting systems is to improve patient safety by learning from the breakdowns of the health care system. The errors in the system that lead to adverse events are not just a series of chances, unconnected, one-off events. They often have core causes and are therefore correctable (WHO, 2005). The presence of these reporting systems among the health care providers is a powerful element in the initiatives of enhancing patient safety in the hospital environment.

PhilHealth-accredited tertiary hospitals in the National Capital Region utilize the incident reporting form as a means to monitor the adverse events. After an adverse event has been reported and investigated, the final steps mentioned included recommendations, which basically are negative and do not promote improvement in the system.

None of the hospitals declared that the incident forms are encoded in the electronic format. None of the hospitals declared that the data from the incident forms are classified, analyzed or the results made available and discussed on a regular basis. Nonetheless, due to the inherent limitations of the open-ended questions utilized in this study, some hospitals may have some other methods of aggregating data from the incident reporting forms, which were not mentioned during the course of the interview.

At present, only two hospitals are doing root cause analysis. The other hospitals maintain an internal reporting system wherein the concerned persons are made aware of the problems. When the adverse event happens, it is reported to the hospital administration, an investigation ensues and appropriate recommendations are then made. Unfortunately, some of the

hospitals still adhere to the punitive system where the personnel involved in the adverse event is punished as a result of reporting. This fault-finding environment, where the reporter is penalized, discourages voluntary reporting and is not recommended. Instead, a nonjudgmental atmosphere should be promulgated.

A P P E N D I X

**T a b u l a t e d R e s u l t s
o f t h e
P a t i e n t S a f e t y S u r v e y
(S e p 2 0 0 6 - M a r 2 0 0 7)**

Table 6 Accreditation Characteristics of Selected Tertiary Hospitals in the National Capital Region (Location)

Accreditation Variables	All Hospitals (n=56)	NCR Central (n=21)	NCR South (n=14)	NCR North (n=21)
Hospital Category, %				
Government	50 (28/56)	48 (10/21)	43 (6/14)	57 (12/21)
Private	50 (28/56)	52 (11/21)	57 (8/14)	43 (9/21)
Number of Years Accredited, Mean (± SD)				
Government	14.63 (±4.98)	16.16 (±2.53)	15.68 (±4.20)	12.82 (±6.43)
Private	15.75 (±3.85) p>0.05	17.14 (±0.60)	13.89 (±5.77)	15.70 (±3.78)
Number of Authorized Beds, Mean (± SD)				
Government	481.29 (±798.03)	422.00 (±349.92)	150.00 (±89.44)	696.33 (±1160.11)
Private	229.21 (±177.29) p>0.05	231.55 (±159.77)	256.38 (±195.28)	202.22 (±198.10)
Number of Accredited Beds, Mean (± SD)				
Government	318.71 (±310.13)	404.7 (±338.75)	166.67 (±87.56)	323.08 (±345.48)
Private	229.21 (±177.29) p>0.05	231.55 (±159.77)	256.38 (±195.28)	202.22 (±198.10)
DOH License Category, %				
Secondary Care	20 (11/56)	14 (3/21)	29 (4/14)	19 (4/21)
Tertiary Care	80 (45/56)	86 (18/21)	71 (10/14)	81 (17/21)

Table 7 Implementing Bed Characteristics of Selected Tertiary Hospitals in the National Capital Region (Location)

Implementing Beds	All Hospitals (n=56)	NCR Central (n=21)	NCR South (n=14)	NCR North (n=21)
Government Hospitals, Mean (± SD)				
Service beds	177.21 (±269.69)	231.30 (±387.26)	98.17 (±88.93)	171.67 (±214.78)
Ward beds	122.79 (±251.81)	94.30 (±157.92)	16.17 (±19.28)	199.83 (±348.78)
Semi-private beds	26.86 (±41.47)	48.30 (±61.00)	17.00 (±6.45)	13.92 (±22.46)
ICU beds	23.64 (±52.28)	22.60 (±22.39)	5.83 (±2.93)	33.42 (±77.56)
Private beds	22.35 (±46.55)	24.50 (±29.26)	1.17 (±0.98)	31.17 (±65.46)
NHIP ward beds	0	0	0	0
Private Hospitals, Mean (± SD)				
Private beds	94.07 (±111.58)	79.64 (±88.62)	132.50 (±149.03)	77.56 (±103.42)
Ward beds	73.00 (±51.19)	23.00 (±30.73)	17.25 (±31.46)	60.78 (±47.07)
Service beds	30.29 (±68.29)	87.09 (±52.36)	67.38 (±55.85)	50.78 (±113.91)
Semi-private beds	24.57 (±24.94)	28.91 (±22.86)	16.88 (±18.27)	26.11 (±32.66)
ICU beds	22.95 (±59.06)	9.55 (±10.78)	10.25 (±11.47)	9.00 (±8.10)
NHIP ward beds	0.71 (±3.78)	0	0	2.22 (±6.67)

Table 8 Manpower Complement of Selected Tertiary Hospitals in the National Capital Region (Location)

Manpower Complements of Hospitals	Total Hospitals (n=56)	NCR Central (n=21)	NCR South (n=14)	NCR North (n=21)
Government Hospitals, Mean (± SD)				
Full time nurses	190.21 (±206.38)	200.40 (±127.92)	87.67 (±47.58)	233.00 (±286.88)
Full time physicians	142.32 (±139.60)	140.50 (±99.55)	95.00 (±68.70)	167.50 (±188.85)
Part time nurses	83.25 (±125.80)	95.20 (±71.15)	6.67 (±16.33)	111.58 (±174.29)
Part time physicians	29.14 (±127.36)	80.20 (±210.08)	0	1.17 (±4.04)
Full time med technicians	26.57 (±31.80)	32.50 (±30.44)	19.83 (±22.27)	25.00 (±37.93)
Full time pharmacists	11.43 (±11.93)	11.90 (±6.40)	6.00 (±2.10)	13.75 (±17.08)
Full time x-ray technicians	10.25 (±9.07)	13.20 (±7.90)	6.00 (±3.22)	9.92 (±11.32)
Total Manpower	526.68 (±535.28)	613.70 (±514.22)	244.83 (±131.88)	595.08 (±650.94)
Private Hospitals, Mean (± SD)				
Full time nurses	165.75 (±163.09)	151.55 (±133.27)	237.63 (±206.55)	119.22 (±149.51)
Full time physicians	157.64 (±141.28)	134.09 (±144.48)	197.25 (±152.51)	151.22 (±136.16)
Part time nurses	34.25 (±44.01)	44.00 (±48.55)	48.75 (±52.17)	9.44 (±13.30)
Full time med technicians	19.82 (±22.97)	20.64 (±22.15)	25.38 (±29.07)	13.89 (±19.09)
Full time x-ray technicians	12.21 (±10.50)	11.36 (±10.44)	18.38 (±12.95)	7.78 (±5.30)
Part time physicians	11.17 (±12.23)	10.09 (±10.17)	16.75 (±16.65)	7.56 (±9.25)
Full time pharmacists	9.50 (±38.60)	24.18 (±60.27)	0	0
Total Manpower	431.79 (±372.25)	411.18 (± 343.11)	563 (±418.49)	340.33 (±374.24)