MEDICATION INCIDENTS REPORTING

HA Wide Incident Reporting System

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Health care service is complex in delivery structure, human operated and technology/ equipment dependent. Risks are inherent in patient care and present at all activity levels. An accountable organisation should have a system in place to manage risk and ensure service quality. An organisation wide incident reporting system is an effective risk-scanning tool to identify system risks and deficiencies for possible elimination or improvement.

Currently, systems of incident reporting have been adopted among HA hospitals. However, the reporting criteria and channels of information flow vary. Sometimes, delayed reporting and under reporting happened in individual hospitals. There is a lack of effective means to pool data for analysis. It is also not uncommon to have a situation where staff need to report the same incident to different parties. Medication and transfusion incidents have received much priority attention in the past few years and well established reporting systems with meaningful data capture have been put in place by HAHO. There are also needs for developing similar comprehensive reporting system in other high-risk areas such as missing patient, fall, equipment and consumable defect etc. A manual system would no longer be able to meet the requirement.
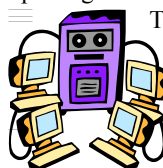
In order to enhance standardisation and reporting effectiveness, a HA wide electronic incident reporting system is being developed. A task group with representatives from all acute hospitals of HA has been formed to oversee the development of the system. In designing this incident notification system, the task group has made reference to the existing electronic incident reporting system of the Prince of Wales Hospital - the Advanced Incident Reporting System (AIRS), the existing practices in individual hospitals and overseas models.

The objectives of the reporting system focus on reduction of risk to patients, improvement of service quality and facilitation of prompt management of incidents. Key steps and culture for the successful implementation of an effective incident reporting system have been identified. The system emphasises on learning rather than blaming to encourage staff to understand, report and learn from adverse events, near misses and errors.

Frontline staff have an obligation to report incidents which happen in their working places. Regarding the criteria for reportable incidents, three categories have been adopted: (1) Patient Safety Related Incidents. (2) Incidents of Specific Nature. (3) Incidents which require Immediate Management Intervention.

The system has a two-tier reporting feature. The first tier reporting is from frontline to local hospital management. The second tier is from hospital management to HAHO. The two tiers are fully integrated. In the phase I development programme, priorities have been set to develop a system for reporting generic cases and special cases on medico-legal incidents, medication incidents and transfusion incidents. In the phase II programme, more types of special cases reporting would be included.

Medication incidents and adverse drug reaction incidents fall within the second category of the reportable incidents, i.e. Incidents of Specific Nature. These are incidents with specific implications which involve stringent process control or may result in major adverse outcome. Frontline staff are advised to report all medication incidents and adverse drug reaction incidents irrespective of the outcome.

To facilitate special incident reporting, the existing Medication Incident Reporting Form and the Adverse Drug Reaction Reporting Form have been incorporated into the electronic incident reporting system. This enables staff to provide further details of the incident to the parties concerned such as the Pharmacy through the same reporting channel.

The incident reporting system plays a significant role in capturing medication related incidents occurred in respective hospitals. It serves as an important source of information to facilitate the hospital management, supervisors and all relevant parties to identify risks in drug related practices. With the data collected, follow-up investigation, analysis and review such as aggregated review, root cause analysis or action plans could be conducted. Strategies such as formulation or modification of protocols could then be implemented to revamp the identified issues.
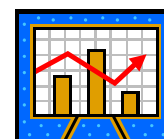
The HA wide incident reporting system is an effective risk management tool to monitor the overall standard of the health care service. It helps to identify deficiencies in clinical and other service areas for implementation of quality improvement and adverse incidents prevention mechanisms.

Unintentionally prescribing of Melphalan

Melphalan 6mg daily for 14 days was unintentionally prescribed to a patient through the use of Medication Order Entry (MOE) copy function. The patient received the medication for 10 days i.e. a total of 60 mg and consequently required a higher level of care.

☺ Safety tips

Similar to any new prescription, when selecting drug items for repeated prescription, doctors should check the prescription carefully for
- the **R**ight **patient**
- the **R**ight **drug**
- the **R**ight **drug preparation**
- the **R**ight **dose and frequency**
- and **R**eview the **whole prescription before and after** printing it out.

Sodium chloride and KCl mix-up for line flushing

A 10ml solution of sodium chloride 0.9% was drawn into a syringe, with the intention for subsequent flushing of peripheral line for an ICU patient receiving blood transfusion. This syringe of normal saline was then put on the bedside without any label. Later, another 10ml syringe of 20mEq of undiluted potassium chloride to be added into 100ml dextrose 5% infusion was also withdrawn for the patient, but the KCl was not added to dextrose 5% solution immediately. The syringe of KCl was labelled and placed into a kidney dish on the bedside table. When the patient had finished blood transfusion, a nursing staff mistakenly took the 10ml syringe of KCl from the kidney dish on the bedside table and flushed the peripheral line assuming that it was normal saline. Insulin infusion, frusemide iv, calcium gluconate iv and oral Resonium A were administered to the patient after the incident.

☺ Safety tips

- All syringes should be correctly labeled. It is strongly recommended that all syringes are labeled at the time when the drug is drawn into the syringe. A specific caution auxiliary label e.g. "Must be diluted" could be affixed to syringes containing potentially hazardous substances.
- Work with only one syringe at a time when possible to avoid mix-up.
- Follow strictly the " 3 Checks and 5 Rights " policy in drug administration.

Wrong infusion fluid

A patient was infused unintentionally with Dextrose 5% instead of normal saline as prescribed. On the next day, the patient was found to suffer from hyperglycaemia with test strip glucose reading of 28.9mmol/L. Actrapid HM infusion was then given. Test strip glucose later dropped to 6mmol/L and insulin infusion was stopped. An hour later, the patient was found unconscious with a spot glucose level of 0.7mmol/L and Dextrose 50% was given as antidote.

☺ Safety tips

- Follow strictly the " 3 Checks and 5 Rights " policy in drug administration.

Incomplete documentation of Drug Allergy

An unknown allergy history was noted in the current medication administration record (MAR) of a patient. However, the patient developed skin rash over the chest wall and back after 4 doses of co-trimoxazole (Septrin) were administered. Subsequently, hydrocortisone iv stat was given to patient. It was found that the patient had a known history of allergy to Septrin, as documented in the previous MAR record.

☺ Safety tips

Admission assessment should always include the patients' allergy histories, and this information should be recorded in the medical chart/record, MAR as well as the clinical management system (CMS).

Drugs watch:

Serzone & Seroquel

Watch out for mix-ups between antidepressant Serzone (nefazodone) and antipsychotic Seroquel (quetiapine).

The drug dosage does not help adequately in differentiating between them with a usual adult maintenance dosage of 300-600mg and 150-750mg for Serzone and Seroquel, respectively. Both medications have 100 and 200mg strengths.

Table 1 Distribution of Incidents

	3 Q/2001		4 Q/2001	
	Freq.	%	Freq	%
Distribution of Cases				
In-patient	2088	38.7	2005	40.8
Out-patient	3307	61.3	2912	59.2
Initiator of Reporting				
Medical	16	0.3	7	0.1
Nursing	576	10.7	488	9.9
Pharmacy	4803	88.9	4422	89.9
Others	5	0.1	4	0.1
Staff Involved				
Medical	4923	90.0	4555	90.7
Nursing	413	7.5	290	5.8
Pharmacy	120	2.2	160	3.2
Others	16	0.3	15	0.3
Patient Outcome				
Patient related	259	4.8	262	5.3
Non-patient related	5136	95.2	4655	94.7

Table 2: Distribution of errors

	3 Q/2001		4 Q/2001	
	Freq.	%	Freq.	%
Prescribing Error				
Wrong Drug	320	9.5	300	9.9
Wrong Dosage form	226	6.7	202	6.7
Wrong strength/dosage	1147	34.0	1037	34.3
Wrong Duration	269	8.0	239	7.9
Wrong Frequency	426	12.6	349	11.5
Wrong Route	63	1.9	43	1.4
Wrong Abbreviation	90	2.7	67	2.2
Wrong Instruction	171	5.1	155	5.1
Wrong Patient	84	2.5	63	2.1
Double Entry	72	2.1	86	2.8
Drug Omission	99	2.9	74	2.4
Others	409	12.1	410	13.6
Rx Incompleteness				
Missing Drug Name	48	2.8	33	2.2
Missing Dosage Form	130	7.6	133	9.1
Missing Drug Strength	277	16.2	287	19.6
Missing Duration/Quantity	159	9.3	136	9.3
Missing Frequency	310	18.1	287	19.6
Missing Dose	96	5.6	111	7.6
Missing Dr. Signature	181	10.6	190	13.0
Others	514	30.0	290	19.8
Dispensing Error				
Wrong Drug	54	38.0	52	32.5
Wrong Dosage form	18	12.7	15	9.4
Wrong Strength/dosage	26	18.3	33	20.6
Wrong Quantity	2	1.4	10	6.3
Wrong Patient	9	6.3	12	7.5
Wrong label information	18	12.7	16	10.0
Double dispensing	0	0	1	0.6
Drug Omission	2	1.4	5	3.1
Others	13	9.2	16	10.0
Administration Error				
Wrong Drug	19	11.0	17	9.1
Wrong Dosage form	1	0.6	1	0.5
Wrong Dose	15	8.7	24	12.9
Wrong Flow rate	19	11.0	14	7.5
Wrong Patient	10	5.8	12	6.5
Wrong Route/method	9	5.2	5	2.7
Wrong Time	21	12.1	19	10.2
Extra Dose	33	19.1	32	17.2
Dose Omission	30	17.3	50	26.9
Unordered Drug	5	2.9	3	1.6
Others	11	6.4	9	4.8

Facts & Figures

Tables 1-5 summarised the medication incident (MI) statistics for the last two quarters of 2001 (July-Sept 01, and Oct-Dec 01). Of 41 eligible hospitals/institutions, a total of 5,395 and 4,917 reports were received during 3rd and 4th quarters of 2001, respectively.   Approximately 95% of these were rectified before reaching the patients and approximately 99% of incidents with no impact on patients.

"Nil incident to report" was submitted by 3 and 5 hospitals in the last two quarters of 2001, respectively. The rates of reported MIs were 73 and 65 per 100,000 items dispensed in the 3rd and 4th quarters of 2001, respectively.

Table 3: Distribution of incidents by error type

	3 Q/2001		4 Q/2001	
	Freq.	**%**	**Freq.**	**%**
Prescribing	3376	62.4	3025	62.5
Incomplete Rx	1715	31.7	1467	30.3
Dispensing	142	2.6	160	3.3
Administration	173	3.2	186	3.8

Table 4 Distribution of incidents by attributed causes

Underlying Causes	3 Q/2001		4 Q/2001	
	Freq.	**%**	**Freq.**	**%**
Communication failure/misinterpretation of order	61	1.1	62	1.2
Non-compliance with policies/procedures	336	6.1	365	7.3
Incorrect computer entry	144	2.6	135	2.7
Miscalculation	8	0.1	13	0.3
Mislabelling	95	1.7	29	0.6
Similar Drug Name/Appearance	54	1.0	49	1.0
Transcription	166	3.0	254	5.1
Distraction	1026	18.7	948	19.0
Inadequate Knowledge/Skills	190	3.5	153	3.1
Lack of Supervision	5	0.1	1	0.0
Complicated Dosage Regimen	10	0.2	13	0.3
Illegible handwriting	141	2.6	166	3.3
Unclear Prescription	135	2.5	85	1.7
Commercial Packaging/Product Labelling	1	0.0	2	0.0
Medicine unavailable	7	0.1	9	0.2
Storage Problem	1	0.0	2	0.0
Unknown	2027	36.9	2009	40.2
Others	1100	20.0	697	14.0

Table 5 Distribution of incidents by severity

	3 Q/2001	4 Q/2001
	Freq.	
No. of preventive interventions	5136	4655
No. of incidents	259	262
Severity Index of incidents		
1	187	188
2	59	61
3	11	9
4	2	4
5	0	0
6	0	0

6= an incident occurred that resulted in patient death
5= patient received medication incorrectly and sustained permanent injury
4= patient injured by the error and required either antidote to reverse the process or transferred to a higher level of care
3= patient required increasing monitoring with a change in vital sign as a result of the incident but no ultimate injury
2= patient required increasing monitoring as a result of the incident but no change in vital sign and no patient injury
1= incident occurred that did not result in patient injury