The impact of an emergency department toxicology team in the management of acute intoxication

急症室毒理學小組對治理急性中毒的作用

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Objective: To evaluate the impact of the recently established Emergency Department (ED) Toxicology Team of Queen Mary Hospital (QMH) in the management of acute intoxication. ***Method:*** A descriptive comparative study with retrospective data collection from all intoxicated and suspected intoxicated patients over two separate half-year periods in 2001 and 2006, before and after the establishment of the ED Toxicology Team in July 2005. Data on reasons of intoxication, drugs and substances involved, ED treatments, patient disposition, length of stay in ED, length of stay in hospital, patient outcome, and 30-day ED re-attendance and hospital re-admission were collected and examined. ***Results:*** A total of 333 intoxicated patients were included in the study, 171 in 2001 and 162 in 2006. The basic epidemiological data were similar in both groups. There was a marked reduction in hospital admissions from 89.5% to 40.7% (P<0.01) and significant decline in average length of hospital stay from 46.8 hours to 29.2 hours (P<0.05). There was no statistically significant difference in patient outcome, 30-day ED re-attendance and hospital re-admission. ***Conclusion:*** Our findings showed that the establishment of the ED Toxicology Team in QMH achieved significant reductions in hospital admissions and the length of stay in hospital in the management of patients with acute intoxication without jeopardising patient outcome. The results illustrate that the new model has a beneficial role in reducing cost and alleviating stress on hospital bed availability, therefore it can be recognised as a cost-effective means of management of acute intoxication. (*Hong Kong j.emerg.med.* 2007;14:134-143)

目的：評估瑪麗醫院新成立的急症室毒理學小組對治理急性中毒的作用。**方法：**這是一個描述性比較研究，以急症室毒理學小組於 2005 年 7 月成立之時，作前後兩個半年時段的分界（2001 年及 2006 年），並以回顧性的方法收集所有中毒及懷疑中毒病者的數據。收集及檢視的數據包括中毒原因、涉及的藥物、急症室的治理、急症室的停留時間、住院期、病者的結果、 30 天內到急症室再次求診、及再入院率。**結果：**這研究共包括 333 名中毒病者， 171 人於 2001 年及 162 人於 2006 年。這兩組的基本流行病學數據很相似。住院率顯著地減少，由 89.5% 減至 40.7%（P<0.01）及平均住院期重大地下降，由 46.8 小時降至 29.2 小時（P<0.05）。而病者的結果、 30 天內到急症室再次求診及再入院率在統計學上沒有重要的分別。**總結：**結果顯示瑪麗醫院成立急症室毒理學小組治理急性中毒病人成功使住院率及住院期顯著地下降，而沒有危害病人的結果。結果並顯示這新模式對降低成本及緩和病床供求的壓力扮演著一個有利的角式，所以它可以認可為治理急性中毒的一個有成本效益的方法。

Keywords: Emergency medicine, poisoning, toxicology

關鍵詞：急症醫學、中毒、毒理學

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Introduction

Adverse events related to intoxication are well known to be a remarkable health care problem as well as a major source of morbidity and mortality.[1,2] Currently, it is estimated that intoxication accounts for 1-5% of

all general hospital admissions[3] and 0.86-5.9% of hospital emergency department visits in developed countries.[4] These figures reveal that intoxication not only causes undesirable outcome to the patients, but also exerts a huge amount of pressure on the resources of the health care system as well as the workload of the frontline health care staff.

Multidisciplinary approaches integrating different specialties within a hospital in the management of intoxicated patients have been strongly advocated recently[5] and are becoming the mainstream of thoughts in western countries. Many studies were done to evaluate the effectiveness of the newly developed approaches in the management of acute intoxication on the hospital basis.[5-7] However, very few studies of the same kind had been done previously to evaluate the contribution of the emergency department to its own hospital in the management of intoxicated patients.

In response to the increasing demand on improvement in the effectiveness concerning the management of intoxicated patients in Hong Kong, the Toxicology Team of the Emergency Department (ED) of Queen Mary Hospital (QMH) was formed and became operational in July 2005. The Toxicology Team consisted of four senior emergency doctors who were interested in and trained in toxicology. Three of them had attained the fellowship qualification of the Hong Kong College of Emergency Medicine, 2 with more than 10 years of post-fellowship and 1 with one year post-fellowship experience. The remaining doctor was a higher trainee. Three members had completed the Certificate Program in Clinical Toxicology for Emergency Physicians jointly conducted by the Hong Kong Poison Information Centre (HKPIC) and the Hong Kong College of Emergency Medicine. The four team members were responsible for taking care of all intoxicated or suspected intoxicated patients in the emergency room when they were on duty. If they were all off duty, they would be ready to respond to phone consultations related to the management of intoxicated patients presenting to the ED. A written checklist (Appendix 1), based on the toxidrome approach, was designed by the Toxicology Team members and was being used routinely in each intoxicated case to guide initial assessment and investigations, as well as to facilitate subsequent management. Intoxicated patients with immediate life-threatening conditions were managed and admitted into the corresponding units as usual. Otherwise, if not contraindicated, they were admitted into the observation ward of the ED for further observation and management. The Toxicology Team members routinely followed up the patients in the observation ward and maintained the continuation of care. In order to hasten the diagnostic process, coordination between the ED and the clinical biochemistry laboratory was well achieved to ensure 24-hour availability of essential toxicology tests, namely urgent serum paracetamol, ethanol, salicylate and carboxyhaemoglobin levels, for acutely intoxicated patients. Besides managing patients, the team members also gave regular talks and presentations on toxicology in the department for educational and training purposes. In addition, regular interdepartmental meetings were conducted on a bi-monthly basis to enhance academic interactions and mutual understandings between different clinical and laboratory units. Representatives from the ED, medical unit, intensive care unit (ICU) and clinical biochemistry unit regularly joined the meetings. In addition, the meeting was open to all other clinical specialties within and outside QMH as well.

The aim of this study was to evaluate the impact of the ED Toxicology Team on the hospital in the management of intoxicated patients. We intended to verify whether the development of such a Toxicology Team in an ED can reduce hospital resources by decreasing hospital admissions and the length of hospital stay while still maintaining the same level of quality of care in terms of substantially equal patient outcomes.

Method

It was a descriptive comparative study with retrospective data collection over two separate half-year periods before and after the establishment of the ED Toxicology Team. The first period was from 1 January

2001 to 30 June 2001, when it was a part of the joint hospital epidemiological study conducted by Chan et al in six major EDs in Hong Kong.[8] The second period was from 1 January 2006 to 30 June 2006, with the data recruited from a regular data collection series in our department since the formation of the ED Toxicology Team. The subjects were all patients presenting to the ED of QMH with a primary complaint of intoxication or suspected intoxication within these two periods (Table 1). The ED records and hospital records of the study subjects were followed and reviewed using the Hospital Authority Clinical Management System database. Patients were excluded if the final diagnoses were not related to intoxication. Cases due to food poisoning and adverse side effects of therapeutic drugs taken in regular dosage, e.g. hypoglycaemia due to regular use of hypoglycaemic agents, were also excluded. Data on reasons of intoxication, drugs and substances involved, patient disposition, ED treatments, length of stay in ED, length of stay in hospital, patient outcome, ED re-attendance and hospital re-admission figures related to the captured intoxication events within 30 days were collected. We emphasized that only disposition to the acute medical units responsible for the management of acute intoxication was considered in our study. Therefore, voluntary and compulsory admissions into psychiatric wards following the stabilisation of the medical condition in the ED were not counted as hospital admissions in the disposition data. The length of stay in the ED of each study subject was measured from the ED registration time to the time of ED disposition. The length of stay in hospital only included the time that each study subject stayed in the acute medical unit, with the exclusion of that spent in the psychiatric ward. In an attempt to classify the patient outcome, we divided it into 3 categories: well, disabled, and dead. Patients were classified as 'well' if they were discharged without significant damage in any vital functions. Patients were defined as 'disabled' if they suffered from significant damage in any of the neurological, respiratory, circulatory or renal functions upon discharge. The data were analysed with the statistical program Systat for Windows (SPSS), version 11.5. The data were analysed by Student's t test, Chi-square test and Mann-Whitney test. Differences were considered statistically significant when P values were less than 0.05.

Results

There were a total of 333 intoxicated patients presenting to QMH ED in the two separate half-year periods (Table 2). Most of the patients were young adults. More than half of the patients in the two groups, 50.3% and 54.3% respectively, fell into the age group between 20 and 40 years old. The mean age of the patients was 34.0 years old in the 2001 group and 34.7 years old in the 2006 group. More female patients than male patients were observed in both groups. These figures were similar to the epidemiological data observed in the local study conducted by Chan et al of the United Christian Hospital.[8] There was no statistically significant difference in the demographic data between the patients in 2001 and 2006. In the 2006 group, the four ED Toxicology Team members took part in the management of 87 patients (53.7%). They played the major roles in the decision making process for management and disposal of patients in

Table 1. Inclusion and exclusion criteria of the study population

Inclusion criteria	- All intoxicated and suspected intoxicated patients presenting to Emergency Department in two separate periods before and after the formation of the Emergency Department Toxicology Team - The first period was between 1 January 2001 and 30 June 2001 - The second period was between 1 January 2006 and 30 June 2006
Exclusion criteria	- Final diagnoses not related to acute intoxication - Intoxication due to food poisoning - Cases due to well-known adverse effects of drugs at therapeutic level

Table 2. Epidemiological data of the study subjects

	First half of 2001		First half of 2006		Total	P
	n	(%)	n	(%)		
Sex						
male	71	(41.5)	66	(40.7)	137	
female	100	(58.5)	96	(59.3)	196	
Total	171	(100)	162	(100)	333	0.885
Age						
mean±SD	34.0±14.6		34.7±18.3			0.697
median	31.0		33.0			
inter-quartile range	24-43		23.5-42			
Age sub-groups						
1- 20	28	(16.4)	26	(16.0)	54	0.936
21-40	86	(50.3)	88	(54.3)	174	0.462
41-60	48	(28.1)	36	(22.2)	84	0.219
61-80	6	(3.5)	4	(2.5)	10	0.578
81-100	1	(0.6)	7	(4.3)	8	0.026
unknown	2	(1.2)	1	(0.6)	3	0.594
Total	171	(100)	162	(100)	333	
Reasons of exposure						
suicidal attempt	113	(66.1)	99	(61.1)	212	0.346
accidental	18	(10.5)	29	(17.9)	47	0.053
drug abuse	16	(9.4)	19	(11.7)	35	0.481
others	24	(14.0)	15	(9.3)	39	0.176
Total	171	(100)	162	(100)	333	

these cases. For those patients admitted into the observation ward and not seen by any of the Toxicology Team members, they were managed either by senior medical officers or consultant. The higher trainee in the Toxicology Team was also supervised by senior medical officers when participating in the management process.

We grossly classified the drug classes and substances involved in the intoxicated patients into 13 categories (Figure 1). There were 43 cases of multi-agent exposure in either group. As a result of concomitant use of multiple drugs, a total of 232 drugs were used in the 171 patients who presented in the first half of 2001 and 228 drugs were identified in the 162 patients who presented in the first half of 2006. Statistically there was no significant difference between the drugs used in the two groups (P=0.146). Sedatives and hypnotics, which accounted for 28.9% in the 2001 group and 25.9% in the 2006 group, were the commonest drugs involved in the intoxicated cases. It was followed by analgesics, which accounted for 14.7% in the 2001 group and 14.9% in the 2006 group. Paracetamol was counted in the analgesic class. There were 29 such cases (12.5%) in 2001 and 20 cases (8.8%) in 2006. There were 12 cases of carbon monoxide poisoning (5.2%) in 2001 and 9 cases (3.9%) in 2006. These figures were compatible with the local epidemiological findings.[8] Generally speaking, the drugs and substances identified in the two periods were similar in both their nature and occurring frequencies without statistically significant difference.

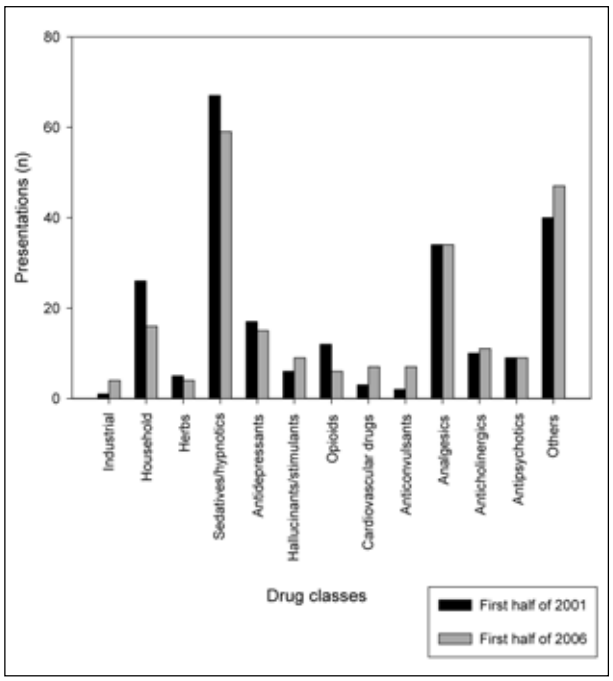


Figure 1. Drug classes responsible for acute intoxication in the study periods.

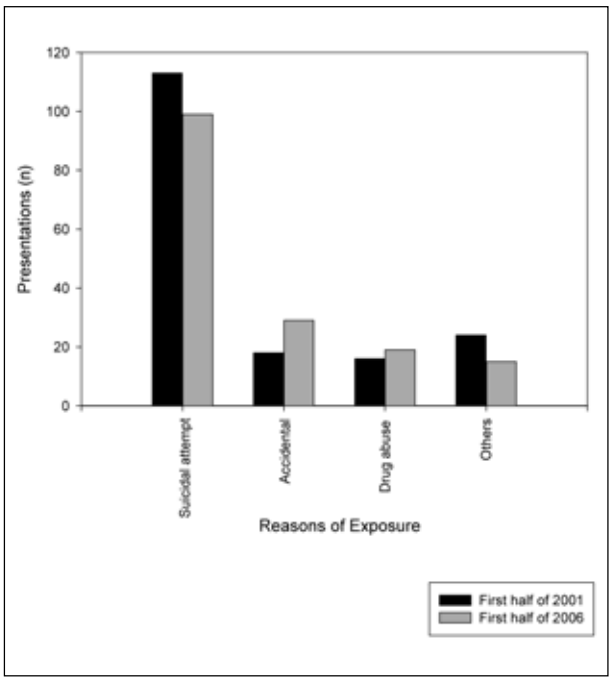


Figure 2. Modes of exposure in the intoxicated patients during the study periods.

The reasons of exposure to the intoxicated drugs and substances were illustrated in Table 1 and Figure 2. Not surprisingly, suicidal attempt was the commonest cause of intoxication in these two periods. It accounted for 66.1% and 61.1% of the exposure in the 2001 and 2006 groups respectively. These data were very close to 64%, which was the figure reported locally.[8] Accidental exposures, which included both domestic and industrial events, were the second commonest reason.

On reviewing the specific resuscitation procedures provided in the ED, 44 patients (25.7%) in the 2001 group were given gastrointestinal (GI) decontamination while 39 patients (24.1%) received the same mode of treatment in the 2006 group (Table 3). GI decontamination procedures included gastric lavage, ingestion of activated charcoal and whole bowel irrigation. Ipecac was not given in a single case, reflecting that this mode of treatment had been fading out from the mainstream of management in toxicology. Specific antidotes were administered in the ED in 25 patients (14.6%) in the 2001 group and 28 patients (17.3%) in the 2006 group (Table 3). Antidotes administered in these two periods included 100% oxygen, N-acetylcysteine, sodium bicarbonate, naloxone, flumazenil and atropine. There was no statistically significant difference for GI decontamination and antidote administration between the two groups of patients.

The analysis of patient disposition data showed a remarkable reduction in hospital admissions; counting general medical wards and ICU as one group, from 89.5% in 2001 to 40.7% in 2006 ($P<0.01$) (Table 3). The local figure reported a 91% admission rate in the year 2001 for poisoned cases.[8] We further examined the patient disposition data by dividing the mode of disposition into: sole ED management, admission into general medical ward, and admission into intensive care unit (Table 3 & Figure 3). The proportion of general ward admission drastically decreased from 81.9% in the 2001 group to 30.2% in the 2006 group ($P<0.01$). It resulted in a marked 51.7% reduction in the proportion of general medical ward admissions. In the mean time, a mild increase in the proportion of ICU admission from 7.6% in the 2001 group to 10.5% in the 2006 group was reported. However, the increase

Table 3. Study results

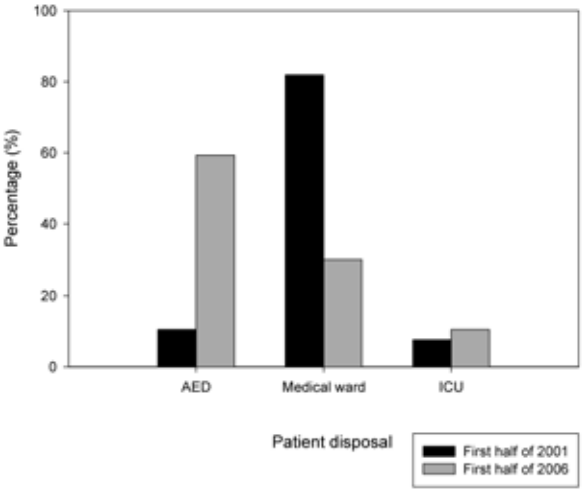
	2001		2006		Difference	P
	n	(%)	n	(%)	(95% CI)	
GI decontamination	44	(25.7)	39	(24.1)		0.727
Use of antidote	25	(14.6)	28	(17.3)		0.507
Disposition						
ED	18	(10.5)	96	(59.3)		
general ward	140	(81.9)	49	(30.2)		
ICU	13	(7.6)	17	(10.5)		
Overall	171	(100)	162	(100)		0.000
Patient outcome						
well	167	(97.7)	160	(98.8)		
disabled	1	(0.6)	1	(0.6)		
dead	3	(1.8)	1	(0.6)		
Overall	171	(100)	162	(100)		0.447
ED ALOS (hours)	N = 171		N = 162			
mean±SD	1.2±3.3		8.2±9.5		7.0 (5.5-8.6)	0.000
median	1.0		3.0			
inter-quartile range	0-1		1-14.3			
Hosp. ALOS (hours)	N = 171†		N = 162‡			
mean±SD	46.8±52.2		29.2±103.9		17.6 (0.1-35.2)	0.049
median	38.0		0			
inter-quartile range	18-56		0-28.3			
mean±SD (without 2 outliers)	44.2±38.7		21.6±37.3		22.6 (14.4-30.8)	0.000
ED re-attendance	7	(4.1)	4	(2.5)		0.408
Hosp. re-admission	5	(2.9)	1	(0.6)		0.114

† including 18 non-admitted patients; ‡ including 96 non-admitted patients

ALOS = average length of stay; ED = emergency department; ICU = intensive care unit; GI = gastrointestinal; Hosp. = hospital

was not supported by statistical significance (P>0.05). The proportion of patients under sole ED management increased significantly from 10.5% to 59.3% (P<0.01). The figures revealed that a large proportion of patients who were previously admitted into general medical wards had been shifted to receive sole ED management. Lastly the differential rates in the area of disposition in the 2006 group were investigated (Table 4). It revealed that the admission rate of the cases managed by the Toxicology Team was only 20.7%, compared to 64.0% for the non-Toxicology Team cases, resulting in an overall admission rate of 40.7% quoted previously. The figure showed the Toxicology Team members admitted far less intoxicated patients than other colleagues in the same period.

The vast majority of patients in the two groups were found to have good outcomes (Table 3), with only 3 patients (1.8%) in the 2001 group died compared to 1 (0.6%) in the 2006 group. There was only one



AED = accident & emergency department;
ICU = intensive care unit

Figure 3. Patient disposition in the two study periods.

patient, corresponding to 0.6%, in either group suffering from disabled outcome. A 39-year-old female patient in the 2006 group ended up with anoxic brain damage after attempting suicide by ingestion of an unknown amount of Dologesic. She had stayed in the hospital for 1256 hours (52 days) before she was transferred to a rehabilitation hospital. Similarly in the 2001 group, a 27-year-old male patient had stayed in the hospital for 503 hours (21 days) for the management of complications due to carbon monoxide poisoning before transferral. Statistically, there was no significant difference in patient outcome between the two groups. Furthermore, local figures reported 0.3% significant disability and 1.4% fatality in intoxicated patients,[8] which concurred with our findings.

We further compared the average length of stay (ALOS) of the patients in ED and in hospital in these two periods (Table 3). Overall, we demonstrated an increase in ALOS in ED in the 2006 group (8.2 hours) when compared with the 2001 group (1.2 hours) (P<0.01). We also reported a decrease in ALOS in hospital in the 2006 group (29.2 hours) compared with the 2001 group (46.8 hours), with a difference of 17.6 hours (P=0.049). Owing to the presence of the above-mentioned outliers, ALOS in hospital of the two study groups were distorted although the difference was still statistically significant. The difference would be more evident if the two outliers were excluded in the calculation of ALOS in hospital. In such case, ALOS in hospital would be reduced from 44.2 hours in the 2001 group to 21.6 hours in the 2006 group (P<0.01), with a difference of 22.6 hours.

Finally, we reviewed the ED re-attendance and hospital re-admission figures relating to the captured intoxication events within 30 days (Table 3). There were 7 ED re-attendance cases (4.1%) and 5 of them (2.9%) resulted in hospital re-admission in 2001, compared with 4 ED re-attendances (2.5%) and 1 re-admission (0.6%) in 2006. There was no significant difference in the ED re-attendance (P=0.408) and hospital re-admission (P=0.114) between the two study periods.

Discussion

In this study, we collected and described the data on 333 intoxicated patients presenting to the ED of QMH in two separate half-year periods before and after the

Table 4. Disposition features in the 2006 subgroups

	Toxicology Team		Non-Toxicology Team		Total	
	n	(%)	n	(%)	n	(%)
Number of patients	87	(53.7)	75	(46.3)	162	(100)
Disposition						
ED	69	(79.3)	27	(36.0)	96	(59.3)
General ward	10	(11.5)	39	(52.0)	49	(30.2)
ICU	8	(9.2)	9	(12.0)	17	(10.5)
Overall admission	18	(20.7)	48	(64.0)	66	(40.7)

ED = emergency department; ICU = intensive care unit

establishment and clinical operation of the ED Toxicology Team in July 2005. There was no difference in the demographic data of the patients, the reasons of exposure, and the drug classes involved between the two periods. The epidemiological data of the study matched closely with the local data.[8]

GI decontamination and specific antidote administration are clinical procedures commonly performed in EDs in the management of acute intoxication. Our data showed that there was no difference in the rate of performing such procedures before and after the establishment of the ED Toxicology Team. This can be reasonably explained by the similarity in both patients' demographic parameters and drug classes involved between the two groups.

Our data clearly illustrated a remarkable reduction in hospital admissions, including both general medical wards and ICU, from 89.5% in 2001 to 40.7% in 2006 (P<0.01). The reduction was mainly contributed by the decrease in admissions into general medical wards while ICU admissions remained more or less the same. This change signified that the majority of the intoxicated patients who were previously admitted for treatment in general medical wards were then managed by emergency doctors in the ED, mainly in the observation ward. The marked reduction in hospital admissions can be translated into improved bed access for the hospital, saving valuable hospital resources for patients who are really in need of in-hospital management. As far as the resource-efficient view is concerned, the marked decline of admissions certainly leads to a sharp reduction in the hospital management cost for acute intoxication. Apparently, the change in patient disposition carries important messages. Firstly, it proves that the establishment of the ED Toxicology Team has consolidated the ED role and contribution in the first-line management of intoxicated patients. Secondly, the diversion of more patients from the original model of in-hospital management to the new ED predominating model reinforces the role of the emergency physicians in the management of acute intoxication as an area of expertise within the hospital through clinical practice.

The operation of the ED Toxicology Team lengthened the ALOS in ED from 1.2 hours in the 2001 group to 8.2 hours in the 2006 group (P<0.01) on one hand, and shortened the ALOS in hospital from 46.8 hours to 29.2 hours (P<0.049) on the other. If the two outliers in the groups are excluded, the results are 44.2 hours and 21.6 hours respectively. The difference is supported by a higher level of statistical significance (P<0.01). Since the ED took a more active role in the management of the acutely intoxicated patients in the 2006 group, the ALOS in the ED was expected to be lengthened. Bearing in mind that admissions were greatly reduced in the 2006 group, the patients requiring admission were potentially more serious than those solely managed at the ED. Since timely and targeted assessment, essential toxicology investigations and specific treatments were started for most of these patients before admission, it could reasonably help to minimise potential complications and, therefore, reduce the length of stay in hospital required for subsequent management. The reduction in hospital length of stay subsequently relieves the burdens on both hospital beds and financial condition. Furthermore, it reduces the workload and stress of the staff in wards. At the same time, it is also beneficial for patients as well.

We have a good faith that patients' benefit should always be the first priority. It is meaningless to reduce the admission and ALOS in hospital if patients' well being is sacrificed. Our data showed that statistically significant difference did not exist in patient outcome between the two study groups. From a longer perspective of view, the 1-month ED re-attendance and hospital re-admission figures were not changed. It signifies that the effect of the Toxicology Team should not be temporary only, but should also be sustained. Only after we have proven that our new model has not jeopardised patients' benefit can we confidently claim the operation of an ED Toxicology Team to be a cost-effective way of treating patients with acute intoxication.

We were aware of the limitations of our study. Firstly, as this was a retrospective observational study, cause-effect relationship could not be directly reflected by the supportive findings due to the potential limitations of the study design. Secondly, the data collection was subjected to the limitations of using a computer database. Data not entered into the database naturally resulted in loss of information. Thirdly, the data were only collected

from a single hospital, which might lead to restriction in generalisation. We overcame the shortcomings by crosschecking our data with the local data reported in another multi-centred study conducted by Chan.[8] We found that the epidemiological parameters of our study were closely matched with the local data. It certainly increased the representative power of our data for generalisation. We noticed that the overall quality of management for acute intoxication had been improving gradually over the last decade due to the intensified training in toxicology among emergency physicians in Hong Kong. At certain points, we were doubtful whether the improvement observed in the study was actually due to the overall improvement of knowledge and skill in the management of acute intoxication rather than the contribution of the ED Toxicology Team. However, based on the data provided by HKPIC for the first 6 months of 2006 (Lau FL, unpublished presentation, 2006), the admission rates of acutely intoxicated patients in three other major local hospitals without ED toxicology team still hovered around 84.6% to 89.1%. At the same time, 24-hour operating short-stay units were available in the emergency departments of all these three hospitals. We consider that a dedicated ED toxicology team functions as a catalyst facilitating emergency physicians to consolidate their knowledge into daily practice and perhaps this can explain the difference in admission rates observed in different hospitals. Last but not the least, we strongly believe that future subgroup analysis would be relevant to delineate the differences in the management between the Toxicology Team and non-Toxicology Team in follow-up studies.

Conclusion

Our findings showed that the establishment of the ED Toxicology Team in QMH achieved significant reductions in hospital admissions and length of hospital stay in the management of acutely intoxicated patients without jeopardising patient outcome. The original aim of the Toxicology Team was to establish a user-friendly platform for all staff in the department as a guide in the management of acute intoxication. The promising results in turn help to change the atmosphere of the department towards managing toxicology cases willingly and confidently. The results illustrate that the new model has a beneficial role in reducing cost and alleviating stress on hospital bed availability. The success of the ED Toxicology Team can be recognised as a concrete example illustrating the contribution of sub-specialisation in emergency medicine to substantial improvement in patient care. Since no additional resources in manpower and budget are required in the daily operation of the ED toxicology team, we conclude that an ED toxicology team can provide a cost-effective means of management for patients with acute intoxication. We hope to promote this model to all other local EDs such that further studies involving large numbers of subjects in different settings can be carried out to further verify the feasibility of introducing the ED toxicology team model into clinical practice in different hospitals.

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Appendix 1. Toxicology Team checklist

(Page 1)

Patient's Label

Queen Mary Hospital
Accident & Emergency Department
Poisoning Assessment

1) Place of Exposure: ○ **Home** ○ **Workplace** ○ **Others** _____

2) Reason of Exposure:
○ Accidental [○ work related ○ non-work related] ○ Suicidal/Impulsive
○ Recreational ○ Therapeutic Error ○ Adverse drug reaction ○ Homicidal
○ Others _____

3) Poison Information

Poison	Name	Category Code*	Dose (mg x tab)	Route	Time of Exposure	Time lag to A&E
1						
2						
3						
4						
5						
6						

*Leave blank for A&E Toxicology Team

4) Other Relevant History:

Alcohol Intake? _____

5) Clinical Information
GCS on arrival: E____/4 V____/5 M____/6
Neurological manifestation: ○ Alert ○ Agitated ○ Confused ○ Sleepy ○Coma
Other neuro. description:

Pupils (Size/Reaction):
Skin/Mucous Membrane (e.g. ○ Dry ○ Wet ○ Flushed): _____
Bladder distension: ○ Yes ○ No BS: _____
Other relevant findings:

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Patient's Label

ECG analysis (e.g. Rate, QRS Duration, QT interval) _____

6) Toxicology Investigations (Tick if performed):
Blood for drug levels:
☐ *Paracetamol* Results: _____
☐ *Salicylates* Results: _____
☐ *Ethanol* Results: _____
☐ *Others* _____

☐ Urine/Gastric Fluid for Toxicology Screening, results: _____

☐ Bedside Tox. Screen, results: _____
☐ I-stat, results: _____
☐ Others: _____

7) A&E Treatments and response:
Treatments & Resuscitation: _____

Decontaminations: _____

Antidotes: _____

GCS on Discharge from A&E: E____/4 V____/5 M____/6