# A REVIEW OF

# THE NATIONAL DRUG POISONINGS

# CASE REPORTING SYSTEM

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# A REVIEW OF

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## SUMMARY

The purpose of this report is to present the preliminary findings of a review into the operations of the National Drug Poisonings Case Reporting System (NDPCRS). The background of the NDPCRS is first outlined, along with the current reporting system. Problems preventing the operation of the system as an early warning of drug poisonings are then cited. The consensus appears to be that the current system is not operating adequately or efficiently, reports from hospitals are infrequent and irregular, providing patchy coverage of patients presenting with drug poisonings. The relevant forms are handled in a variety of manners by the hospitals, with no standardization. The reporting hospitals are highly dissatisfied with the lack of meaningful feedback from the central collection agency and with the lack of input regarding form design. Most hospital administrators are, however, highly supportive of an early warning system and would participate in any future system if overcoming the deficiencies in the system:

**Recommendation 1**: That a data collection person be employed in each participating state with a brief to collect data on all drug poisonings presenting whilst in attendance.

**Recommendation 2**: That data collection be state/territory-based, with record tapes sent monthly to the Commonwealth for further analysis and feedback to all jurisdictions.

**Recommendation 3**: That the validity of poisonings data be tested to ensure recorded substances are present. Toxicologic verification through urine analysis on a regular basis is recommended.

**Recommendation 4**: That the system be sentinel-based with random sampling of hospitals from each strata, where stratification is based on the number of patients treated annually.

Other suggestions which might help in facilitating the operation of any future drug poisonings reporting system are then listed. First, the possibility of collecting aggregate rather than individual reports from the hospitals is discussed. Second, feedback and payment are discussed as two incentives which might improve the participation and form-completion rate by the hospitals. Third, the possibility of utilizing existing hospital records through a computer network in order to gather drug poisonings data are outlined.

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*Emergency rooms and early warning of drug poisonings*

The appearance of 'new' drugs and changes in drug usage (licit and illicit) are often perceived as occurring along the lines of an epidemic. Once a drug is introduced at one location in one sector of the community, its use can spread rapidly to other members of the community and other areas. There is therefore a need to monitor the rapid changes in drug usage patterns. The aim of monitoring is both to identify new drugs of abuse and to pick up early signs of increases in difficulty the community might be having in using existing drugs. Data obtained from monitoring can be used to target treatment responses to new drugs and new problems with existing drugs. The need for monitoring is especially important in relation to drugs that are misused by the community, either intentionally or unintentionally, and therefore result in drug related poisonings.

The monitoring should occur within that section of the population which is most likely to experience new drug usage patterns first. Moreover, the monitoring must act as early warning of changing drug usage patterns. Any monitoring system of drug poisonings must therefore have a rapid turnover in its contact with the drug using community.

Some of the drug use indicators most commonly monitored include: drug abuse treatment admissions; hepatitis cases; drug-related deaths; nonfatal emergency room episodes of drug abuse; drug law violation arrests; and drug retail price and purity levels. The indicators are generally considered to have an association with drug use and abuse, but the absolute nature of this association is not known. Thus, the indicators should be viewed as a relative measure of change in drug abuse conditions and problems rather than as absolute measures.

The present report focuses on the monitoring of drug usage patterns through the record of nonfatal emergency room episodes of drug poisonings. The number of nonfatal reactions to specific drugs or drug combinations that present to casualty or emergency rooms is thought to increase as the number of drug users increases. Thus the number of individuals who experience a drug overdose and are treated in hospital emergency rooms should vary with the total number of active users.

Most of the people who take a drug overdose, either deliberately or accidently, are seen in casualty departments (Evans, 1967). An analysis of all the people who attend casualty departments in a particular area should, therefore, shed some light on the nature and extent of serious drug problems in the general population, while information on the size of the problem and the characteristics of the patients should help the planning of more effective preventive and treatment strategies.

The usefulness of Accident and Emergency (A & E) departments in monitoring drug-related problems is well established internationally (Brandwin, 1976; Ghodse, 1976; Ghodse et al., 1981; Hadden, 1978; Russe & Wells, 1980; Sellers et al., 1981; Sivner & Goldberg, 1978). In Australia, the reporting system which currently monitors drug related poisonings presenting to A & E departments is called the National Drug Poisonings Case Reporting System (NDPCRS).

*Background*

The Commonwealth Department of Health had been collecting reports on persons presenting to hospital outpatient and emergency departments because of poisoning. The Department also collected data from Poisons Information Centres with regard to telephone enquiries about poisonings. As of 1 July 1987, the National Drug Abuse Information Centre (NDAIC) took over the responsibility for the reporting system.

NDAIC has been responsible for the development of the National Drug Abuse Data System (NDADS), with support from the

National Campaign Against Drug Abuse (NCADA). NCADA is concerned only with drug use—licit and illicit. Consequently, other chemical and non-chemical poisonings are outside of the Campaign's brief. The Case Reporting System was therefore taken over by NDAIC and reduced in function so that it is currently only designed to gather early warning information on the use of legal and illegal drugs.

The question to be addressed is therefore whether the NDPCRS as functioning currently is an adequate early warning system of drug poisonings and, if not, what changes can be made to increase its efficacy.

*Objective of the NDPCRS*

To determine whether the system is functioning adequately one must first outline its stated purpose(s). The questions to be addressed by NDADS are as follows:

1. What is the extent and nature of drug-related poisoning in Australia?

2. What kinds of responses are being made to the problem?

3. What factors relate to these problems and the responses to them?

4. What measures can be made to improve responses to drug-related poisoning? 5. How best to monitor and evaluate this response?

The purpose of the data collected from the NDPCRS is to answer the first of the above questions. That is, the aim of monitoring drug poisonings presenting to emergency rooms is to obtain early warning information about changes in the nature of drugs reacted to negatively by the drug using population.

*Current reporting system*

In the current system, the hospitals that send reports to NDAIC do so on a voluntary basis. The reporting facilities may therefore not be representative of hospitals that deal with drug poisonings, resulting in an unrepresentative record of trends in drug usage. Moreover, where hospitals do participate, forms are completed by accident and emergency staff working under intense pressure and this results in incomplete and inaccurate reports.

Due to the intense pressure that reporting units are working under, it is possible that not all reports are completed and also that there is not a regular and frequent period of reporting.

The 1988 review of the NDPCRS suggested that form completion could possibly be carried out by "clerical staff employed to complete forms using partial funding from the Commonwealth" because the workload pressure was too great on casualty staff to complete the required form. The recommendation was, however, that "the forms be filled out by the staff who initially attend to the patient...this would make it more timely and accurate."

## PROBLEMS IN THE CURRENT SYSTEM

*Non-participation and intermittent reporting*

The most obvious problem facing the system in reaching the objective of providing early warning of drug poisonings reporting to emergency rooms is that of non-participation by a large number of the bigger hospitals and the non-compliance with regard to form completion by the hospitals that do participate. Both the latter problems are a consequence of the fact that casualty staff are too busy attending to patients to be concerned about filling out forms and do so when and if they get around to it.

Given that participation in the system is voluntary, many of the larger hospitals have

chosen not to be involved in filling out the poisonings forms due to the immense pressure of work already exerted on casualty staff. The one reporting Tasmanian hospital, for instance, indicated that its staff complete the forms intermittently depending on how busy they are and the director of casualty was unhappy about the extra workload involved.

In the hospitals that are participating, the forms are completed by a variety of staff members and at various times. In some, the forms are completed by nursing staff while the patient is in the emergency room, whereas in other hospitals the medical records department or the pharmacology department has taken over that responsibility. The non-casualty departments usually fill out the forms weekly based on the scant data entered in casualty day books.

When other departments (medical records or pharmacy) did take over responsibility for form completion, the NDPCRS was the first victim of any staff shortages. When the relevant department is short of funds, form completion is often handed back to casualty. In turn, casualty prefers to leave the system due to lack of staff time.

The Queensland reply to the 1988 review of the NDPCRS indicated that, in that state, forms were completed by a range of hospital staff: medical records clerk/supervisor from patient's chart; medical records clerk plus patient's doctor; patient's doctor; or by the sister on duty in the casualty section. Moreover, forms were completed only for poisoning cases admitted to the hospital.

Enquiries in South Australia suggest that not all cases at the reporting hospitals are being reported: "It would seem that collecting this information is not a high priority in accident/injury units."

There is also confusion about and variation between hospitals regarding when the forms should be sent. In Queensland, for instance, half the hospitals forward the forms on completion and the rest send forms at the end of the month during which the patient is discharged. Forms were usually completed after discharge, between a few days and a month after discharge. Longer delays occurred in the larger hospitals.

Such variation and lack of standardization obviously reduces the validity of the data obtained and makes comparison of drug use trends between regions and hospitals impossible. The delays in reporting obviously impede the early warning function of the NDPCRS.

*Non-representative reporting hospitals*

There is also an obvious lack of representativeness in the range of reporting hospitals because participation is voluntary. A review of the NDPCRS in Queensland found that only 10.7% of public hospitals were participating, and none in metropolitan Brisbane. Moreover, the contributing hospitals treated only 19.5% of all inpatients admitted to public hospitals in Queensland in 1986/87, whereas the metropolitan hospitals (all non-participating) treated 42% . Only 50 or 17% of NSW public hospitals contributed to the NDPCRS in 1987-88.

The hospitals enter and leave the NDPCRS at various times, resulting in a continuing change in the range and nature of reporting facilities. There is thus no guarantee of representativeness of reporting hospitals. The reports sent may not be representative of the general trends in drug usage, but may merely reflect local changes.

Moreover, given the changes in the hospitals sending reports, comparison between reporting periods becomes meaningless. Comparisons between reporting periods regarding the number of reports sent involving various drugs in poisonings are the primary means of obtaining early warning information about changes in drug usage. If the number of reports changes not as a function

of time but as a function of variation in reporting facilities, the early warning function is made inoperative.

*Paucity of feedback*

One hospital which is one of Sydney's largest contributors to the NDPCRS has handed the responsibility to the pharmacy department. The latter complete the forms "when they get around to it" and do not record all overdoses, only those who are admitted to the hospital. The hospital is currently losing interest in the system due to insufficient feedback, the perception that the system is inefficient and the view that other reporting hospitals do not take the system seriously. In fact, some Sydney hospitals had assumed that the reporting system was no longer operating as they had not received feedback for some years.

In fact, most Directors of Casualty Departments that were consulted expressed support for an early warning system, but were disappointed with the NDPCRS due to insufficient feedback compared to the effort needed to participate in the system. Most Directors of Casualty (and Emergency) Departments contacted were, in fact, highly dissatisfied with the paucity of feedback and the lack of consultation in form-design, the form of feedback obtained and the lack of seriousness with which the system was taken "in Canberra." Lack of perceived involvement in the system is therefore one of the main reasons why the hospitals have been failing to submit forms to the NDPCRS.

## RECOMMENDATIONS

*(1)EMPLOYMENT OF A 'CIRCUIT' DATA COLLECTION PERSON*

The most logical means of obtaining information from emergency rooms about drug poisonings, given that hospital staff cannot realistically be expected to fill out the relevant record form, would be to employ one person per state who would tour the hospitals relevant to his/her state or territory and, on a circuit basis, collect the poisonings information.

The funding for the employment of such a person would either be a Commonwealth or a state responsibility and would obviously be a more realistic option if only a small number of hospitals were involved through hospital sampling or by focusing only on sentinel hospitals (Recommendation 4).

The circuit person would also serve as the primary source of feedback to the hospitals. They could deliver early warning information on drug poisonings to the hospitals personally and provide a constant reminder of the system's existence. They would make the hospitals feel that the poisonings system was a continuing project and that they were an important part of it. The system would thereby take on a more personal face and the relevant hospital administrators would feel a part of the system. Moreover, the circuit person would act a personal link between the hospitals and the data collectors, allowing the hospitals to express any positive or negative feelings toward the system. Any weaknesses in the system could therefore be picked up relatively early and appropriate changes made, if it was found that the problem was a general one.

The previous recommendation that the poisonings forms "be filled out by the staff who initially attend to the patient as this would make it more timely and accurate" must therefore be abandoned as unworkable given that the directive to the hospitals, where taken seriously, has caused most to abandon participation in the system as a result. If emergency room personnel are busy saving lives it is unrealistic to expect them to spend their spare time (if any) filling in forms. Due to the intense workload pressure on the casualty staff this procedure must be abandoned in order to make any system workable, otherwise hospitals will leave any new system as they have been leaving the existing system.

Both the participating and the non-

participating hospitals contacted all indicated that form completion in casualty would cause unacceptable disruption. If forms did have to be completed in casualty, they would be filled in quickly, and the coverage of patients and hospitals might be "even more patchy than now." Moreover, while in casualty, the patient may either still be clinically affected or unwilling to cooperate, further reducing data availability and reliability. All Queensland respondents indicated that completing survey forms in Casualty would be disruptive and would receive very low priority, resulting in, at best, spasmodic coverage. A "circuit data collection" person would avoid these problems by being based in the hospital for a period of a week only on an intermittent basis (depending on how many hospitals were contributing) and by filling out the forms personally and in consultation with the doctors and nurses on duty.

The Victorian reply to the 1988 review of the NDPCRS concluded that "the viability of the system depends on the support of a few key doctors and to that extent is personality dependent on a hospital by hospital basis" and that "adequate consultation should ensure the cooperation of emergency treatment personnel, but this will be a time consuming process." Accordingly, the personal contact with casualty staff through the circuit data collector should increase cooperation from the contributing hospitals.

It might therefore be feasible for the Commonwealth to employ one data collection person per jurisdiction (8 persons in all, on part-time basis in the smaller states) in order to act as a circuit data collector and a liaison between the Commonwealth and the hospitals. Alternatively, data collectors might only need to be appointed for the larger states where changes in drug use would be expected to occur first in any case (Recommendation 2).

The frequency with which data collectors would visit the hospitals and their length of stay would obviously depend on how many hospitals they would have to cover. Perhaps four sentinel hospitals per data collector in each jurisdiction would be ideal, allowing visits of one week per month per facility.

One obstacle that would have to be overcome would be the reluctance of hospitals to allow access to hospital records to a person that would come only intermittently. There would need to be a Commonwealth Department of Health directive and explanation regarding the activities of the circuit person as well as assurances regarding the confidentiality of the data.

It is likely, however, that hospitals would accept the presence of the data collection person and welcome the increased feedback. Some hospitals which previously contributed to the NDPCRS have ceased to do so due to staff shortages, but have indicated that they would contribute again if no additional staff time was required. Even when negative attitudes were voiced regarding the system, the hospitals expressed interest in a future drug poisonings data collection, as long as there was more consultation regarding the form of collection and more feedback.

The cost of appointing one person per state and the question of eliciting cooperation from the hospitals are not the only problems to be faced in accepting this recommendation. There will also be a cost in training the data collectors in a highly standardized manner so that the data across jurisdictions will be comparable.

The observation made in the Tasmanian reply to the 1988 NDPCRS review was that "The strongest complaint was the lack of feedback. The opinion about data collection might be improved if the hospital felt more involved." This observation is well-founded and the problem is a national one. The presence of a data circuit person in each hospital, even if intermittent, would go a long way toward making the hospitals feel more involved and toward providing more extensive feedback.

**Recommendation 1**: That a data collection person be employed in each participating state

with a brief to collect data on all drug poisonings presenting whilst in attendance.

### *(2) STATE/TERRITORY BASED (OR A 1-STATE-ONLY) SYSTEM*

To overcome the problems listed above, it is also recommended that consideration be given to collecting the poisonings data on a state/territory basis, rather than on a national basis. Each jurisdiction would therefore collect poisons data from its hospitals. Individual jurisdictions cold address some of the problems in collecting reports more adequately because they would have closer contact with the hospitals and could choose the reporting hospitals on a more representative basis with the more complete information available to them about each facility.

However, members of the NDADS steering committee in the various states generally expressed support for a nation-wide system of data collection on drug poisonings, as opposed to a purely state-based system. A need was expressed to compare one state with others in terms of incidence and the extent of the drug problem. Even then, however, some reservations were expressed regarding the need for a national system because the individual states were responsible for acting on the implications of any changes in the drugs abused, in terms of treatment resources and implementation of intervention strategies. Moreover, if the system is to act as an early warning of drug abuse, it was felt that a state-based system would be more timely and easier to administer.

However, data collected in any one state would only be representative of drug use trends in that jurisdiction and comparisons across states could not be made. If record tapes of poisonings data from each jurisdiction were sent to the Commonwealth on a regular basis, national figures could also be calculated and fed back to the states/territories (along with information on each jurisdiction for perusal of others). There should also be a great improvement in the timeliness of the reports and in the ability to "chase up" reporting facilities that submit incomplete reports of poisonings or do so too slowly.

It should be noted that considerable resistance has been expressed to this idea by some jurisdictions. The ACT, for instance, has expressed the opinion that "the Commonwealth should continue to code and analyze the returned reports...if this situation were to change, the ACT would be unable to contribute to the NDPCRS without additional resources." The Western Australian opinion is that data coding and entry should remain the Commonwealth's responsibility: "If states take up this activity, it may lead to duplication, considerably increased expenditure and possible inconsistencies in coding between states." Queensland has expressed similar reservations: "If it is proposed to proceed with a separate data collection for NDPCRS, then data coding, entry and analysis should be conducted by the Commonwealth, unless additional funds are available for conducting these tasks at a State/Territory level."

There is, however, also recognition of the benefits of jurisdiction-based data collection from Queensland: "a likely consequence of assigning these tasks to the Commonwealth is increased difficulty in following up hospitals for incomplete or outstanding forms. This problem should not be underestimated in terms of both the staff time required for maintaining a national collection and the difficulty of achieving compliance from reporting units which have no association with the government department involved." Compliance would presumably be easier to achieve if the individual state/territory was made responsible for data collection.

The Victorian reply to the 1988 review also supports this recommendation: "The state and territory data collection units should be involved in the collection and collation of the forms from participating hospitals."

It should be possible to overcome the objections of the individual territories with

regard to an inability to engage in data collection and analysis due to lack of funds by an allocation from the Commonwealth for this purpose. Although a costly option, the benefits in terms of timeliness of reports would justify such a cost.

There would therefore be two main costs in adopting the above recommendations—one data collection person per state and an allocation of funds for analysis for each jurisdiction. However, as the purpose of monitoring drug poisonings is to observe the changes in the nature of the drug related presentations to hospital emergency rooms, the information in terms of early warning could feasibly be obtained by merely focusing the monitoring in one or two states where the changes in drug use trends tend to occur initially in any event. Therefore, if the proposed recommendations were accepted but limited to only one or two states the cost would be considerable reduced.

The data collection system could therefore be restricted to only NSW or Victoria where one would expect most changes in drug use to occur first. This would make data collection relatively easier, focus the limited funds on one area, enabling total coverage if required, and make data collection faster. The latter would mean that the system could indeed act as an early warning of changes in drug use. The information could then be passed on to the other states which could engage in limited monitoring to determine if the changes had spread to their jurisdiction. If such signs are found, treatment and other responses could, presumably, occur more rapidly.

**Recommendation 2:** That data collection be state/territory-based, with record tapes sent monthly to the Commonwealth for further analysis and feedback to all jurisdictions.

### *(3) TOXICOLOGIC VERIFICATION*

If resources are available, consideration might be given to carrying out some independent tests of the validity of data obtained through the reporting system. It is important that any data collected regarding drug poisonings be valid. Regular checks of whether the drugs reported in poisonings are actually present should therefore be undertaken. For example, under some circumstances, it may be possible to test urine or blood samples for drug content.

In some hospitals, urine toxicological tests are carried out routinely for most drug involved admissions and the costs may therefore not be prohibitive. The circuit data collection person (Recommendation 1) could be made responsible for randomly sampling drug poisoning patients for urine analysis in order to test the validity of reports.

Any reporting system that might be adopted should therefore include a regular check to determine whether the reported drugs have actually been ingested to determine the validity of the drug poisonings trend data. Australian studies indicate that such toxicologic verification is necessary. For example, a prospective survey was conducted over three months between February and April 1982 at the Accident and Emergency Department of St Vincent's Hospital, a 590-bed teaching hospital located in the inner-city area of Sydney, by Ray, Reilly and Day (1986) to assess the accuracy of information on drug use. Blood, urine and occasionally gastric aspirate specimens were obtained from as many cases as possible for toxicological analysis. Ray et al. found that complete agreement between suspected or alleged drugs and the drugs that were detected occurred in only 52 cases (35%).

Monitoring of self-poisoning must include regular laboratory checks of reported poisonings if useful categorization of the drugs ingested is sought.

**Recommendation 3**: That the validity of poisonings data be tested to ensure recorded substances are present. Toxicologic verification through urine analysis on a regular basis is recommended.

*(4) SAMPLING AND STRATIFICATION OF HOSPITALS*

One solution to the inability to obtain the cooperation of all hospitals would be to sample the existing hospitals and to concentrate the public relations effort toward the selected hospitals. This concerted effort aimed at a small number of reporting facilities should ensure greater compliance and more complete reports of poisonings.

A stratified sample of hospitals should be used. The Queensland reply to the 1988 review points out that stratification may take place in relation to either the size of the covered community or in relation to the actual number of patients treated. If one hospital within a stratum declines involvement in the system, a similar hospital can be asked to participate "without reducing the coverage or generality of the collection." Moreover, by reducing the focus on a few hospitals only, the promotional effort to maintain cooperation would be manageable and paid data collectors may become more feasible.

Moreover, the sampling within stratifications should not include all hospitals but should be sentinel-based. If the purpose of monitoring reports of drug poisonings to hospitals is to determine the extent and nature of drug-related poisonings in Australia, it might be possible to restrict the recording to a few hospitals which are likely to handle drug related cases. The coverage of hospitals therefore does not have to be a representative one, as long as the hospitals covered in each jurisdiction represent geographical areas which are likely to cover drug using populations.

Nomination of which are sentinel hospitals would be a state/territory responsibility as they would have greater knowledge regarding the individual hospitals than the Commonwealth. Stratification of the sentinel hospitals could then be carried out according to how many patients were treated annually be each facility and samples of hospitals could then be drawn from each stratum.

Restriction to sentinel based hospitals would greatly reduce the number of reporting facilities and make more feasible the employment of a circuit person.

**Recommendation 4**: That the system be sentinel-based with random sampling of hospitals from each strata, where stratification is based on the number of patients treated annually.

## OTHER SUGGESTIONS

If it is decided either to persevere with the existing reporting system or to adopt the recommendations above, three further suggestions should be noted: (1) the possibility of asking for only aggregate reports from the hospitals; (2) the need for incentives for the reporting hospitals; and (3) the use existing data in the hospitals.

*(1) AGGREGATE REPORTS*

One consideration might be whether the hospitals are to report on an individual or on an aggregate basis. Aggregate reporting has the possible advantage of lower cost, but the probable disadvantage of less opportunity to check the data. The choice of approach will depend on the relative importance of these and other factors, such as confidentiality requirements and the willingness and ability of agencies to submit individual or aggregate reports.

If one is interested merely in the changes in the number of reports of drug poisonings involving any one substance as a function of time, then hospitals need only report the drugs involved each month and the frequency with which they presented. The effort in keeping a record such as this would be minimal and might result in participation by all hospitals. As a result, there would be total coverage of all drug involved poisonings in Australia.

An aggregate reporting system would only involve a single frequency-count form per

hospital per month. A list of drugs of interest would be given to the hospitals and the casualty staff would merely keep a tally for each drug as it was reported by the patients. The form could be sent monthly or picked up by courier from all the sampled hospitals and then delivered to Canberra or the relevant state authority.

However, with aggregate reports it would not be possible to determine how many individuals were involved overall since more than one drug can be reported per presentation. Moreover, demographic characteristics of those involved in poisonings could not be determined. Especially if a new drug has shown an increase in the number of reports, there would be a need to identify the at-risk population and target treatment and education accordingly.

### *(2) INCENTIVES TO REPORTING FACILITIES*

Whatever system of collecting data from emergency rooms is chosen, it would be helpful to provide the participating hospitals with as many incentives as possible. These might include regular feedback of data received from them, sending them copies of completed forms for their own record systems, and providing them with consultation. Directors of casualty that were consulted expressed interest in feedback regarding their own hospital as well as comparison data with total state and national figures. This feedback would be important to help maintain the participation by individual hospitals in any voluntary system.

Moreover, the degree of feedback could be considerably and feasibly increased more in a state/territory based system (Recommendation 2) than on a national basis, as individual jurisdictions would have greater contact with the hospitals than the Commonwealth.

Given that hospitals are reluctant to participate and/or often send in an incomplete record of all presentations of drug poisonings because of a lack of staff time, financial incentives for participation are one possible answer to the main problems of the NDPCRS. These may take the form of a payment per report as in the U.S. DAWN program. The payment option would become more realistic if the reporting hospitals were stratified and then sampled because this would reduce the number of reporting facilities and hence the cost involved in running the system.

### *(3) EXISTING HOSPITAL DATA*

Some state NDADS representatives expressed the view that standard existing hospital forms should be employed for the purposes of data collection for drug poisonings, rather than adding yet another specific form to be filled in by an overworked hospital staff. The current system which demanded work from the casualty department simply "does not work" and it was felt that using an existing form would overcome this problem. In fact, it is clear that for any hospital-based reporting system to work efficiently, and with the support of the hospitals, the data must be obtained from existing hospital records.

One newly-developing possible source of data are computerized records kept by some of the consulted hospitals. In Queensland, two computer-based information systems (one covering metropolitan Brisbane and the other the rest of the state) maintain information about all inpatients admitted to all public hospitals. Data are available immediately from metropolitan hospitals and three months after admission from non-metropolitan hospitals. Most of the data items required on the NDPCRS form are recorded—hospital, age, sex, postcode, date of admission, principal and other condition(s) and external cause of injury/poisoning. According to the 1988 reply to the NDPCRS review: "Subject to administrative approval regarding safeguards about the conditions of release, it would be possible to obtain from these systems unit

record data for all in-patients with a diagnosis of poisoning for all public hospitals in Queensland." The advantages of extracting data from this database are that current poisonings reports from Queensland are only for inpatients in any case and that most drug poisonings are admitted as inpatients.

The only participating Tasmanian hospital is also shortly to receive an on-line database for patient records. Data required for poisonings records could be extracted from the database. The computer system is still in its early stages and it may therefore be relatively easy for the Commonwealth to request that the system be organized in such a way that the data needed for the NDPCRS could easily be extracted. Morbidity data as well as drug poisonings could be obtained from this system.

Some NSW hospitals are also currently engaged in developing a computer database on which doctors would enter all information about the patient, and would therefore do so only once. Any person or organization that required legitimate access to the database could then presumably obtain the information needed relatively easily.

The Victorian Emergency Department Association (VEDA) is currently conducting talks with the Victorian Health Department and the State Minister for Health in order to obtain funding for a standard computer program throughout Victoria. The data would be entered directly onto a computer database in each casualty department in Victoria. There are hopes that the system will become a national one.

Patient records at the Queen Elizabeth Hospital, South Australia, are also computer coded and entered on a data base, enabling the hospital to obtain daily printouts regarding patient numbers and demographic characteristics. It would be possible to adapt the existing database in such a way as to obtain the data needed for drug poisonings.

There exists a possibility therefore of adapting and using the newly developing computer databases within hospitals to obtain early warning information about drug poisonings. This would involve linking up the existing data bases and promoting the adoption of computerized data collection in facilities that have not considered such an option. In the long run, it may prove that collecting national morbidity and poisonings data through a nation-wide hospital-based computer network is the most efficient and reliable means of gathering such information quickly.

The most obvious problem in linking up a national hospital data network is the financial one. Moreover, there would be enormous difficulties in standardizing data collection points and obtaining agreement from all hospitals with regard to the mechanics of the system.

## CONSULTED HOSPITALS

*NEW SOUTH WALES:* Balmain; Ryde; Mona Vale; St Vincent's; Mt Druitt; Sydney; Royal North Shore; Westmead; Royal Prince Alfred.

*VICTORIA:* Box Hill.

*QUEENSLAND:* Cairns; Ipswich General.

*SOUTH AUSTRALIA:* Queen Elizabeth.

*WESTERN AUSTRALIA:* Sir Charles Gairdner.

*TASMANIA:* Royal Hobart.

*NORTHERN TERRITORY:* Royal Darwin.

## REFERENCES


Brandwin, M. A. (1976). Drug overdose in emergency room admissions. *American Journal of Drug and Alcohol Abuse, 3,* 605-619.

Evans, J. G. (1967). Deliberate self-poisoning in the Oxford area. *British Journal of Preventive and Social Medicine, 21,* 97-102.

Ghodse, A. H. (1976). Drug problems dealt with by 62 London casualty departments: A preliminary report. *British Journal of Preventive and Social Medicine, 30,* 251-256.

Ghodse, A. H., Edwards, G., Stapleton, J. et al. (1981). Drug-related problems in London accident and emergency departments. *Lancet, ii,* 859-862.

Hadden, S. M. (1978). Drug overdose: A study of the accident and emergency department of the Royal Victoria Hospital. *Ulster Medical Journal, 47,* 165-170.

Ray, J. E., Reilly, D. K. , & Day, R. O. (1986). Drugs involved in self-poisoning: Verification by toxicological analysis. *Medical Journal of Australia, 144,* 455-457.

Russe, B. R. & Wells, K. S. (1980). A research note on drug related emergency room cases. *Journal of Alcohol and Drug Education, 15,* 7-13.

Sellers, A. M., Marsham, J. A., Kaplan, H. L. et al. (1981). Acute and chronic drug abuse emergencies in Metropolitan *Toronto. International Journal of Addiction, 16,* 283-303.

Sivner, A. L. & Goldberg, L. A. (1978). Deliberate self-poisoning: A study from North Manchaster General Hospital. *The Pharmaceutical Journal, 221,* 205-207.