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Objective: The study aimed to establish a regional poison information centre (PIC) at Department of Pharmacy Practice, JSS Hospital (Mysore, Karnataka, India). Also the study aims to assess the epidemiology of poisoning, provide poison information services (PISs) to general public and healthcare professionals, evaluate the quality of PISs and assess the benefits of educational interventional programs and PISs.

Methodology: An essential training on establishment and management of a PIC was initially obtained at Victorian Poisons Information Centre, Royal Children’s Hospital, Melbourne, Australia. Necessary facilities were created to establish PIC at Department of Pharmacy Practice, JSS Hospital, Mysore by acquiring essential infrastructure, facilities, and information resources. Policies and procedures for effective functioning of PIC were developed for effective functioning of PIC. Standard operating procedure was developed for provision of poison information. Toll free telephone number (1800-425-0207) was obtained and e-mail (pic.jsscp@jssuni.edu.in) was created to receive queries. Website (www.picjsscp.jssuni.edu.in) and advertisement materials were designed to create awareness. A database containing essential information on locally available poisoning agents (4237) was developed and being used mainly for knowing the ingredients and for provision of poison information. Standard poison treatment protocols were prepared and validated using the “Appraisal of Guidelines, Research and Evaluation (AGREE)” instrument for common poisoning agents identified. Electronic and printed PI documentation form, quality assessment checklist, feedback form and questionnaires
were prepared to: a) record all the queries received by PIC; b) evaluate the quality of poison information service; and c) conduct educational/preventive programs respectively. The epidemiology of poisoning was studied by conducting prospective assessment at two study hospitals. Patients who met the study criteria were enrolled in the study and demographic and poisoning details were collected. The severity and outcome of the poisoned patients were assessed using Glasgow coma scale (GCS) and poison severity score (PSS) and snake bite severity score (SSS) scoring systems. Poison information was provided according to the standard operating procedure developed by poison information centre. The data related poison information queries was analyzed according to enquirer’s status, place from query asked, mode of receiving query, category of query asked, purpose of query, reference consulted for information, mode of provision of information and time taken to provide information. The quality assessment panel (comprised of healthcare professionals) evaluated the quality of services provided by poison information centre. A feedback questionnaire was also developed and used to obtain the feedback from healthcare professionals. Thirteen villages showing higher incidences of pesticide poisoning among agricultural population were selected for educational intervention. Knowledge, attitude and practice (KAP) questionnaire was developed and validated in English language and translated to Kannada language and validated before using it to assess the KAP of the farmers regarding the safe handling, storage and disposal of pesticides. The healthcare outcome-related and healthcare cost-related benefits of PIS were compared between two groups, Viz., patients who utilized PIS and
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patients who did not utilize PIS by considering the various parameters such as treatment outcome, time of hospital duration and cost of the treatment details.

Results and Discussion: The awareness about new PIC and its services was created among general public and healthcare professionals by: a) publishing articles in leading English and Kannada newspapers; b) posting and distributing advertisement materials such as banners, posters, and pamphlets across Mysore city and 13 surrounding villages; c) Distributing the pamphlets among healthcare professionals working at 9 different hospitals, 30 primary healthcare centres, 30 clinics and 50 community pharmacies located in and around Mysore district; d) Addressing or conducting interactive sessions at various occasions (e.g., Suttur jatra festival, National Pharmacy Week, Pharma Rally, National Service Scheme activities, health camps, seminars, faculty development programs); and e) Addressing the students at 5 colleges and 15 schools located in and around Mysore city. A total of 804 patients were enrolled during the study period. The major cause of poisoning was found to be intentional or self-harm intent (81.1%; \( P < 0.05 \)). The magnitude of poisoning was significantly \( (P<0.05) \) greater with pesticides (48.9%), followed by medicines (31%). Among pesticides, organophosphate (30.7%) was commonly used for poisoning. In case of medicines, Alprazolam (6.5%) was the most commonly used drug for poisoning, followed by paracetamol (5.8%) and non-steroidal anti-inflammatory drugs (NSAIDs) (4.1%). Moderate poisoning was observed with household products. In fact, poisoning with household products was accidental and occurred mainly in pediatric and young children. Kerosene (4.4%) was more commonly
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used among the household products. The poisoning incidences were significantly
\((P<0.05)\) higher in rural area (51.2\%) when compared to urban (26.7\%) or semi-urban
(22.1\%) areas. Notably, considerable number of patients were illiterates (19.7\%). In case
of literates, a majority of patients had higher secondary education (23.5\%), followed by
secondary education (19.4\%). Irrespective of type of poisoning, higher incidences
occurred in middle and low socio-economic stratum. A majority of patients with mild to
moderate predicted severity were recovered from the poisoning (improved category). On
the other hand, patients with severe predicted illness were either discharged with severe
illness or morbidity or expired. There was a significant \((P<0.05)\) association between the
clinical outcome and severity of poisoning as determined using scoring systems (e.g.,
GCS, PSS and SSS). Further, the comparison of clinical outcome of poisoning
(improved, discharged with severe illness, morbidity, and mortality) between different
scoring systems (GCS, PSS, and SSS) at different point of study duration was performed.
It was found that moderate correlation obtained between GCS and PSS \((r = 0.51,\nP<0.05)\), indicating excellent efficacy and similarity between these two scoring systems.
A total of 654 poison information queries were received during 2011-2013 and majority
\((P<0.05)\) of them were received from doctors (78\%) followed by general public and other
healthcare professionals. Majority of queries were answered through verbal mode (74\%).
Importantly, in 51.8\% of queries answers were provided immediately, while 34.3\% of
queries were answered within 10-20 minutes. The quality of service was rated as
“Excellent” in majority (79-86\%; \(P<0.05\)) of cases. These results indicate that PIS were
provided in a timely and excellent manner. Importantly, the healthcare professionals
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appreciated the service as they benefited from the service in terms of providing optimal patient care and updating their knowledge. The educational program made significantly beneficial impact on farmers (improved the KAP score of farmers) as indicated by significantly ($P<0.05$) improved KAP score during first follow-up ($59.7 \pm 2.6$) and second follow-up ($45.8 \pm 4.1$) when compared to baseline ($32.5 \pm 5.3$). The hospitalization time required for acute management was decreased considerably due to poison information service, thereby reducing the treatment cost significantly ($P<0.05$) for patients who received poison information service compared to patients who did not receive poison information service. Overall the service, provided by the regional poison information centre: a) improved the acute management of poisoning (greater number of patients in improved category); b) reduced morbidity and mortality from poisoning (reduced the number of patients in these category); c) reduced the hospitalization time required for the acute management; and d) reduced the overall cost of treatment.

Conclusions: A regional poison information centre was successfully established at Department of Pharmacy Practice located at JSS hospital, Mysore. Ever since its establishment, the centre is functioning effectively and providing the quality poison information service to general public and healthcare professionals.