



## MANAGEMENT OF MEDICAL EMERGENCIES, ROLES OF DENTIST-PHARMACIST, NURSING TOGETHER WITH EMS

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### Abstract:

There is a duty of care that each member of the dental team has to ensure that they give their patients with a service that is both effective and safe. In the dental practice, a satisfying performance in the event of a medical emergency involves a wide range of implications, including those pertaining to the equipment, training, standards of care, clinical governance, risk management, and clinical auditing. The 'Medical Emergencies in the Dental Practice' poster, which has been amended and updated, is intended to serve as a reminder. Its purpose is to provide the dental team with assistance in addressing medical emergencies in a manner that is both safe and effective. In addition, there are a few studies that have been published that capture and highlight the opinions of emergency department staff members regarding emergency medicine pharmacists. These studies all support the function and usefulness of this profession. On the other hand, to the best of our knowledge, there are no studies that compare the level of satisfaction that nurses have with pharmacy services before and after the introduction of an emergency medicine pharmacist.

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**Introduction:**

According to the General Dental Council (GDC), "a patient could fall on any premises at any time, regardless of whether or not they have received treatment." Therefore, it is of the utmost importance that all registrants be equipped with up-to-date proof of capacity and undergo training in the management of medical emergencies, including resuscitation [1]. When treatment is expected to take place, there should be at least two personnel available inside the working environment to deal with any medical crises that may arise [2]. This should be planned ahead of time. In order to efficiently and safely respond to a medical emergency, members of the dental team are required to maintain their knowledge and competence. This is an essential component of continuing professional development (CPD) for all dental professionals [2].

The following are examples of medical emergencies that have happened in dentistry practices: vasovagal syncope, angina, hypoglycemia, epileptic seizures, choking, asthma, anaphylaxis, and cardiac arrest. The likelihood of a general dentist practitioner (GDP) experiencing a medical emergency is predicted to be at least once every two years [3,4]. This is the average frequency of such an event. One of the most prevalent types of emergencies that can occur is vasovagal syncope. It is interesting to note that a study revealed that 4.8% of all GDPs observed 22% of all syncope, and that the prevalence of vasovagal syncope tends to decrease with increasing professional expertise [4].

Within the dental practice, risk management has the potential to play a significant role in lowering the likelihood of medical emergencies occurring. It is for this reason that it is advised that all primary care dental clinics have a procedure in place for evaluating the medical risks that their patients face [5]. An exhaustive medical history should be taken of the patient, and this history should be amended, updated, and checked each time the patient presents for treatment. This is done in order to underline the need of anticipating any medical emergencies that may occur. According to one theory, having a current medical history can assist reduce the likelihood of a medical emergency developing [6]. This theory has been put forward as a potential solution.

**Review:**

The number of clinical pharmacists working in emergency departments (EDs) in the United States has been steadily increasing over the course of the last several decades. In 2015, the American College

of Emergency Physicians formally acknowledged that emergency medicine (EM) pharmacists serve a crucial role in ensuring that medication is used in the emergency department in a manner that is efficient, safe, and effective [7]. Emergency medical pharmacists are responsible for a wide range of services, including but not limited to providing answers to inquiries about drugs and assisting with the right administration of medications, as well as performing pharmacokinetic monitoring and reacting to medical and trauma resuscitations [7]. By acting as a medication consultant for prescribers, providing prospective medication order review, and ensuring appropriate medication administration rates and techniques, they also play a significant role in reducing medication errors in the emergency department (ED). This is accomplished through direct patient care activities and the prevention of verbal order errors. Significant cost savings based on EM pharmacist interventions has also been documented in previously published literature, with the largest cost avoidance attributable to prevention of adverse drug events, resource utilization/formulary adherence, individualization of care, and direct bedside management [8]. However, there is relatively limited information that has been published addressing the direct impact that this role has on other emergency department-based professions, despite the fact that emergency medicine clinical pharmacists have become an essential part of the interdisciplinary effort. It has been demonstrated in previous published works that pharmacy services have the potential to enhance the level of job satisfaction experienced by nurses through the implementation of various initiatives. These include the expansion of pharmacy hours, the decentralization of pharmacists, the education of pharmacists, and the enhancement of drug accessibility [9].

Dentists are required to get themselves ready to handle any medical crises that may occur while they are on the job. A study was carried out in Japan between the years 1980 and 1984 by the Committee for the Prevention of Systematic Complications During Dental Treatment of the Japan Dental Society of Anesthesiology. This research was carried out under the auspices of the Japanese Dental Society. The findings of this survey indicated that between 19% and 44% of dentists had a patient who presented with a medical emergency at some point during the course of a single financial year. On average, nearly ninety percent of these issues were assessed to be light, whereas eight percent were deemed to be significant. A total of 35 percent of the individuals

were determined to have some kind of underlying condition, according to the findings. It was discovered that 33 percent of those patients had cardiovascular disease [9?].

It was most likely that medical emergencies would arise during and after the administration of local anesthesia, particularly during the process of tooth extraction and endodontics. Syncope accounted for more than sixty percent of the situations, with hyperventilation coming in at seven percent of the time. In addition, studies conducted in both the United States of America and Canada have demonstrated that syncope is the most common type of medical emergency that dentists see. One particular study found that syncope accounted for roughly fifty percent of all sudden cardiac arrests that were reported. The second most prevalent event, mild allergic reactions, accounted for only eight percent of all emergency situations. Syncope is not the only emergency that has been known to have happened; additional crises that have been reported include allergic responses, angina pectoris/myocardial infarction, cardiac arrest, postural hypotension, seizures, bronchospasm, and diabetic emergencies [10].

In order to provide the necessary level of therapy, the dentist must first prepare, then prevent, and finally manage the situation as required. The prevention of dental caries can be achieved by completing a comprehensive medical history investigation and making the necessary adjustments to dental care as needed. When it comes to nearly all medical situations that occur in dental offices, the most crucial thing to do is to either avoid or repair poor oxygenation of the respiratory system and the cardiovascular system. The management of any and all medical emergencies should therefore include making certain that oxygenated blood is being supplied to the organs that are considered to be of the utmost importance. Therefore, this is in line with the fundamentals of cardiac resuscitation, which the dentist needs to be knowledgeable about. The ability to manage the majority of medical emergencies, which begin with the examination and, if necessary, the treatment of the airway, breathing, and circulation (also known as the ABCs of cardiopulmonary resuscitation), is developed through this. It is common practice for the dentist to wait until these fundamentals have been addressed before considering the use of emergency medications [11].

According to the findings of one study [12], nurses were the most content with the accuracy of drug information and the advantages of having decentralized pharmacists on units. On the other

hand, they were the least content with the accessibility of medications and the telephone services provided by pharmacies. According to their study, there was a slight but noteworthy decline in nursing satisfaction with AMD systems (3.6 against 3.3,  $p < 0.001$ ). On the other hand, our findings suggested that there was a considerable rise in satisfaction with drug inventory. Our increased level of contentment is most likely attributable to the presence of a committed pharmacist who is physically present in the emergency department and who is able to identify inefficiencies in the pharmaceutical procurement process. For instance, modifications to the configuration of commonly used medications in electronic medical records (EMR) led to a more efficient dispensing of products from the AMD systems. Additionally, the creation of numerous adult and pediatric order sets provided clinical decision support to the most appropriate medication therapy, which was readily available in emergency department AMD systems. Additionally, the EM clinical pharmacist conducted a proactive evaluation of AMD system supplies, and numerous adjustments were made to both the goods and the par levels in order to avoid stockouts. Additionally, in accordance with the recommendation of the emergency medicine pharmacist, the pharmacy department started batching medications that are often used in the emergency department in order to promote faster turnaround times and, eventually, more prompt medication delivery. With regard to matters concerning medication, the emergency medicine pharmacist played a crucial role as a liaison between the nursing staff and the pharmacy [12]. Despite the fact that our research only included nurses, previous studies have also investigated the attitudes of providers and the level of satisfaction they have with inpatient clinical pharmacy services [13]. In countries outside of the United States, where clinical pharmacy services have just recently been created, providers tend to be amenable to the presence of a clinical pharmacist, despite the fact that their expectations of the scope of practice that a pharmacist should have vary [12]. It was said by a number of individuals that pharmacists make a substantial contribution to the treatment of patients by way of education, involvement in rounds, and the discussion and implementation of therapeutic strategies with teams of healthcare professionals. However, a number of providers have expressed that they do not feel comfortable with pharmacists doing more advanced clinical pharmacy activities. These activities include the modification of treatment regimens, the prescription of drugs, and the treatment of minor illnesses [14].

**Conclusion:**

On the basis of a comparison between baseline and one-year satisfaction levels following the implementation of the service, it was found that the provision of clinical pharmacist services for emergency dentistry led to an increase in nursing satisfaction with regard to general pharmacy and pharmacy information technology services. It was possible for the emergency medical services clinical pharmacist to fulfill the role that the nurses had anticipated the clinical pharmacist to play. Every single member of the dental staff ought to be taught and ought to be provided with frequent updates on the handling of medical emergencies. In addition, they have to be in possession of the most recent evidence of competency. It is recommended to conduct regular simulated scenarios or drills that are centered on medical emergencies and involve members of a team coming together. According to the author's own experience, certain surgical procedures find it beneficial to incorporate the poster into the training session in order to develop familiarity with its application. It is of the utmost importance to make certain that the dental staff is kept up to speed with the handling of medical emergencies.

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