

# Emergency Medicine Physicians can Manage all Emergent Procedures in the Emergency Department

*Acil servis hekimleri acil serviste tüm acil girişimleri gerçekleştirebilirler*

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## SUMMARY

**Objective:** Emergent procedures are one of the cornerstones of emergency departments and are performed in order to save a life of a patient, increase survival or to decrease complications and discomfort. To improve survival and quality of service, all emergency medicine residents and specialist should be able to make decisions and perform these procedures as soon as possible whenever an indication exists. The purpose of this study was to compare the quality and quantity of completing procedures among residents of emergency medicine and surgery.

**Methods:** Patients who were admitted in the emergency department of Imam Reza hospital between Feb 19th and Jun 21st 2007 and had one of these procedures were included in the study. The procedures which were included in our study were chest tube placement, deep peritoneal lavage (DPL), cut down, jugular, subclavian and femoral catheter and CV line placement, local wound exploration and jaw reduction.

**Results:** 161 patients were included in the study. Mean age of the patients was 32.4±16.3. All jugular, subclavian and femoral catheter and CV line placement were performed only by emergency medicine residents. 3.1% and 7.8% of patients had chest tube placement, 2.5% and 7.5% of patients had DPL, 3.1% and 8.7% had cut down, 12.4% and 41.0% had local wound exploration by emergency medicine and surgery residents respectively. 2.5% and 0.6% of patients had jaw reduction by emergency and oral and maxillofacial surgery residents respectively.

**Conclusion:** Emergency medicine residents' skills are equal to that of residents of surgery in completing these procedures. In all patients who had indication of catheter and CV line placement there was no need for surgical consult and all were performed by emergency medicine residents. Although residents of surgery were interested in performing procedures such as DPL, chest tube placement, LWE (what does it mean?) in traumatized patients, the emergency medicine residents show their mastery and expertise in successfully completing these procedures too. It was concluded that the emergency medicine residents had necessary skills and knowledge needed to manage all patients.

**Key words:** Resident of emergency medicine; resident of surgery; procedures.

## ÖZET

**Amaç:** Acil girişimler acil servisin köşe taşlarından birisidir ve hastaların hayatlarını kurtarmak, komplikasyonları azaltmak ve konforu artırmak için uygulanırlar. Hayatta kalımı artırmak ve acil servisin hizmet kalitesini iyileştirmek için, tüm acil servis doktoları (asistanlar ve uzmanlar) gerekli olduğunda karar verip tüm bu girişimleri en kısa zamanda uygulayabilmelidirler. Bu çalışmanın amacı acil servis ve cerrahi asistanları arasında girişimleri hem nicelik hem de niteliksel anlamda karşılaştırmaktır.

**Gereç ve Yöntem:** Imam Reza Hastanesi Acil Servisi'ne başvuran ve girişim uygulanan hastalar çalışmaya dâhil edildi. Çalışmaya dahil edilen girişimler sırasıyla; göğüs tüpü yerleştirilmesi, tanısal peritoneal lavaj, cut-down, jugular, subklavyan ve femoral kateterizasyon, lokal yara eksplozasyonu ve çene redüksiyonu idi.

**Bulgular:** Çalışmaya 161 hasta dâhil edildi. Hastaların yaş ortalaması 32.4±16.3'dü. Tüm juguler, subklavyan ve femoral kateter uygulamaları acil tıp asistanları tarafından gerçekleştirildi. Acil tıp ve cerrahi asistanları sırasıyla; %3.1 ve %7.8 oranında göğüs tüpü yerleştirilmesi, %2.5 ve %7.5 oranında tanısal peritoneal lavaj, %3.1 ve %8.7 oranında cut-down, %12.4 ve %41 oranında lokal yara eksplozasyonu uyguladı. Hastaların %2.5 ve %0.6'sına acil tıp ve ağız ve çene cerrahisi asistanları tarafından sırasıyla çene redüksiyonu uygulandı.

**Sonuç:** Acil tıp asistanlarının acil servisteki girişimleri tamamlamadaki yetkinliği cerrahi asistanları kadar iyidir. Tüm santral venöz kateterizasyonlar acil tıp asistanları tarafından yapılabilir. Cerrahi asistanları tanısal peritoneal lavaj, göğüs tüpü yerleştirmek gibi girişimlerde iyi olsalar dahi, acil tıp asistanları bu girişimler konusunda ehil

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olduklarını göstermişlerdir. Sonuç olarak acil tıp asistanları girişim gerektiren hastaları yönetebilecek bilgi ve beceriye sahiptirler.

**Anahtar sözcükler:** Acil tıp asistanları; cerrahi asistanları; girişim.

## Introduction

The emergency physician has the unique responsibility of offering his or her skills at all times to all people (young and old, friendly and hostile, rich and poor). No other health providers are always collectively there at the entrance to the hospital. Emergency physician's responsibility has grown and horizons have been expanded because of their commitment to people.

The past 30 years in the history of emergency medicine have seen a remarkably rapid evolution in care. Organized medicine has often been criticized for its inability to change thought patterns and approaches to care, but the ability to change current patterns is the recognized strength of emergency physicians. Emergency physicians have undertaken their responsibilities, created new relationships, and developed new perspectives on clinical medicine in an area where previously no one dared to serve. In the past, medical providers have also been criticized for not evaluating their clinical techniques and technology effectively.

The rapid growth of prehospital care, the ever-increasing roles of emergency care, and the diversity of clinical issues and research dilemmas in emergency medicine have led to the development of a new type of physician in the emergency department.

Training in emergency medicine (EM) involves mastering a variety of procedural skills applied in the investigation and treatment of the diverse patients who present for care. Although many procedures are straightforward or could be done electively by a more skilled consultant, a substantial number of procedures are performed as emergent lifesaving acts and must be carried out competently by the emergency physician (EP).

The core content in EM1 contains 81 distinct procedures. Applicants to the American Board of Emergency Medicine (ABEM) may be tested on each of these, and it is expected that EM training programs should provide residents experience or education in all of them. The Residency Review Committee for Emergency Medicine (RRC-EM) identifies 16 emergency procedures and four types

of resuscitation that EM residencies (EMRs) must track in the form of a procedure log.<sup>[1]</sup>

This naturally leads to competition for procedures between EM residents and residents from other specialties.<sup>[2]</sup> When this happens in institutions where EM lacks longevity, or where the competing specialty residents traditionally perform specific procedures, EM residents may encounter difficulty obtaining practice in certain procedures.<sup>[3]</sup> In the absence of information from comparable institutions that have emergency medicine residency programs (EMRPs), previous practice at a particular institution may be used to justify inequitable sharing of procedures with EPs.

To improve survival and quality of service, all emergency medicine residents and specialist should be able to make decisions and do these procedures as soon as possible. This study was designed to assess and compare the quality and quantity of completing procedures among EM residents and specialists and surgery.

## Materials and Methods

**Study Design-** This was a descriptive study of procedures performed by EM residents from approved EM residency programs. Comparisons were made of total procedures done as reported in procedural logs, as well as procedures by program format, hospital type, and ED volume.

To assess the global procedural experience between programs, a set of index procedures were identified. These included chest tube placement, deep peritoneal lavage (DPL), cut down, jugular, subclavian and femoral catheter and CV line placement, local wound exploration and jaw reduction.

**Study Population-** The patients who were admitted in emergency department of Imam Reza hospital between Feb 19th and Jun 21st 2007 and had one of these procedures were included in the study.

**Data Analysis-** The data were entered into SPSS 15.0. Descriptive statistics were used for all data.

## Results

Out of all patients who came to ED, 161 patients had at least one of the procedures. The procedures which were put in our study include chest tube placement, deep peritoneal lavage (DPL), cut down, jugular, subclavian and femoral catheter and CV line placement, local wound exploration and jaw reduction.

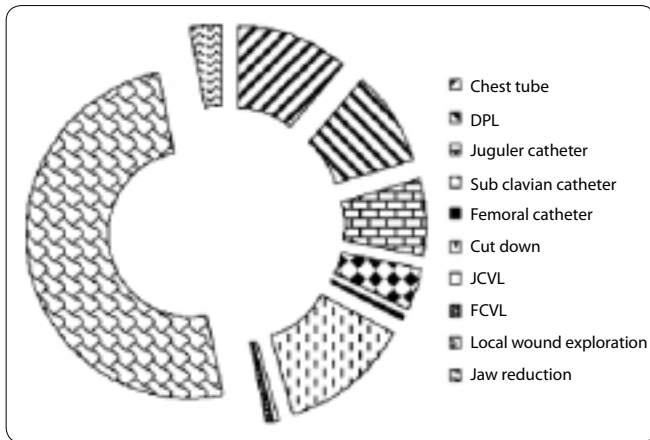


Fig. 1. Abundance of procedure.

The mean age of the patients were  $32.4 \pm 16.3$  and the youngest one was 8 years old and the oldest was 87 years old. 21.7% of patients were female and 78.3% of them were male. 11.8% of patients had chest tube placement and 3.1% of chest tubes placed by emergency medicine residents and 8.7% were done by general surgery residents.

10% of patients had deep peritoneal lavage (DPL) and 2.5% of DPL were done by emergency medicine residents and 7.5% were done by general surgery residents.

8.1% of patients had jugular catheter, 4.3% of patients had subclavian catheter, 0.6 of patient had femoral catheter, 0.6 of patients had jugular CV line, and 0.6 of patients had femoral CV line and all of them were placed by emergency medicine residents.

13.7% of patients had cut down and 5.0% of them were performed by emergency medicine residents and 8.7% done by general surgery residents

3.1% of patients had jaw reduction and 2.5% of them were reduced by emergency medicine residents and 0.6% was reduced by and maxillofacial surgery residents (Fig. 1).

## Discussion

A great deal has been written about curricular objectives in EMRPs, a necessary component of which includes the acquisition of a large number of procedural skill.<sup>[4-10]</sup> A variety of models have been described to facilitate the teaching of procedures to residents, including cadavers<sup>[11]</sup> and the recently dead.<sup>[12,13]</sup> Animal models also have been used rather extensively in teaching procedures.<sup>[14,15]</sup> Emphasis

on the educational importance of achieving competence in the performance of procedures has led some residencies to develop computerized databases to track residents' acquisition of critical skills over time.<sup>[16]</sup> However, there is no information presently available about whether EM residents across the United States are obtaining an equitable proportion of procedures within their own EDs.

Clinical practice in EM encompasses a wide variety of procedural skills. The number and complexity of procedures that an EM specialist may be required to do are as varied as the age and clinical problems of the patients being treated. It is therefore unrealistic to expect competence in all of these procedures. Rather, she or he must attain and maintain competence in procedures that are either performed frequently or required for life-threatening situations and mastered after training; competence in skills pertinent to the practice of a given specialty is most appropriately achieved and certified during residency training. Despite the fact that the certification process is complex and expensive, it provides trainees with the opportunity to learn through didactic lectures, cadaver/mannequin lab practice, and supervised patient encounters,<sup>[11]</sup> prior to being deemed competent to perform the procedure independently. Procedures included in the training curriculum should reflect the trainee's future clinical needs, as well as the skills required in practice and performed at a frequency that sustains competence. Our survey identified 123 procedures that should be taught and evaluated at the postgraduate level of training. None of the procedures in our list were designated "postgraduate knowledge only."

To our knowledge, this is the first study of the range of EM resident procedure experience across the spectrum of EM residency types and settings. Emergency medicine residents' skills are equal to that of residents of surgery in completing these procedures.

## Conclusion

In all patients who had indication of catheter and CV line placement there was no need for surgical consult and all were done by emergency medicine residents, and although residents of surgery were interested in performing procedures such as DPL, chest tube placement, LWE in traumatized patients, the emergency medicine residents show their mastery and expertise in successfully completing these procedures too. It was concluded that the emergency medicine residents had necessary skills and knowledge of managing all patients.

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