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Hypertension affects 25% of all adults and 60% of all people older than 60 years in the United States.¹ Emergency physicians routinely evaluate and treat elevated blood pressure in a variety of settings, ranging from the asymptomatic patient with increased blood pressure noted on an unexpected emergency department (ED) visit, to the seriously ill patient with elevated blood pressure and end-organ damage.² Almost 30% of ED patients have elevated blood pressure during their ED evaluations. Most patients (68%) had a previous history of hypertension.³

Hypertension is the most widely recognized modifiable risk factor for stroke, myocardial infarction, peripheral vascular disease, heart failure, and end-stage renal disease.⁴ The role of the emergency physician is to stabilize acute disease and to assess the potential for deterioration, initiate appropriate treatment when indicated, and determine proper patient disposition.

This issue of Emergency Medicine Reports reviews urgent and emergent hypertension syndromes encountered in the ED and approaches to patient assessment and pharmacologic

management. Part I will cover the clinical evaluation of hypertensive patients and hypertension syndromes. Part II will discuss antihypertensive medications and the management of hypertension in specific disease processes.

—The Editor

Treating Hypertension in the Emergency Department: First, Do No Harm, Part I

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Definition

The definition of hypertension is somewhat indiscriminate and usually is defined as the level of blood pressure linked with a doubled increased long-term risk for adverse events. It also could be thought

of as the level at which the benefits of action exceed the risks and costs of inaction.⁵ According to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7), the diagnosis and classification is based on an average of two or more properly

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measured seated blood pressure readings on two or more office visits.⁴ (See Table 1.) This definition does not apply to the ED setting, since the diagnosis of hypertension requires blood pressure measurements taken on more than one occasion, but it still can be used in a general discussion about the proper diagnosis of hypertension.

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Pathophysiology

More than 90% of patients with hypertension have idiopathic or essential hypertension. The exact cause of essential hypertension is unknown, but it is thought to be multifactorial, with several contributing factors such as age, race, obesity, dietary salt intake, and heredity.⁶ Secondary hypertension occurs when an etiology is identified. The most common causes of hypertension are listed in Table 2.

Initially, increased ED blood pressures frequently decrease spontaneously by the time a second reading is obtained. Most of the time this is not the result of reduced stress but of a regression to the mean, a property of all extreme observations.^{2,7}

Clinical Evaluation of the Hypertensive Patient

There are three goals in the evaluation of a patient with hypertension in the ED. First, assess presence of acute or rapidly progressive target organ damage. Second, reveal identifiable causes of hypertension. Third, assess the patient's lifestyle and identify other cardiovascular risk factors for concomitant disorders that may affect prognosis and guide therapy.⁴

History

It is important to ascertain the duration and severity of pre-existing hypertension and the degree of previous success with blood pressure control. In some cases the patient has never been diagnosed with high blood pressure. Identification of the presence of target end-organ damage is key to the determining the urgency of the hypertension. Symptoms of end-organ involvement may include symptoms consistent with acute coronary syndrome or congestive heart failure (cardiovascular); paresthesias, weakness, headache, or altered mental status (cerebrovascular); and oliguria or hematuria (renovascular).^{4,8} Inquire about medication use and compliance, dosage adjustments, use of over-the-counter drugs as well as illicit drug use and alcohol use. Past medical history should focus on illnesses associated with potential end organ damage as noted above. Family history should include questions about renal or cardiac disease or major vessel aneurysms.

Physical Examination

Often, an elevated blood pressure is the only abnormal finding on examination in patients with hypertension. Blood pressure should be verified by appropriate measurement of blood pressure in both arms. The accurate measurement of blood pressure is key, as treatment decisions are based in large part on this reading. The mercury sphygmomanometer always has been the gold standard device for the measurement of blood pressure. The customary location for blood pressure measurement is the brachial artery.⁹ Newer home models that measure pressure at the wrist and fingers are inaccurate, often producing falsely elevated readings. The auscultatory method (manual) utilizes the Korotkoff technique for measuring blood pressure. The American Heart Association recommends using Korotkoff Phase I (clear sounds) to record systolic blood pressure, while using Korotkoff Phase V to record diastolic pressure (sound disappears). In children,

Table 1. Classification of Blood Pressure⁴

CATEGORY	SBP MMHG		DBP MMHG
Normal	< 120	and	< 80
Prehypertension	120-139	or	80-89
Hypertension, Stage I	140-159	or	90-99
Hypertension, Stage II	≥ 160	or	≥ 100

Korotkoff Phase IV (muffling) is suggested to record diastolic pressure. Korotkoff sounds gives systolic values that are lower than intraarterial blood pressure and diastolic ones that are higher. The oscillometric (electronic) method currently is used throughout ambulatory clinics, hospitals, and as home monitors. These devices use algorithms to calculate the blood pressure, as the point of maximal oscillation corresponds to the mean arterial pressure. Its advantages are that it is less susceptible to noise, easily placed on/off by patients, and an exact cuff placement is not required.⁹ For accurate readings, the most important concept is cuff size. The cuff size is critical to an accurate measurement of blood pressure. Cuffs that are too small tend to overestimate blood pressure and vice-versa. Bladder widths should be two-thirds the width of the arm. The bladder within the cuff should encircle approximately 80% of the circumference of the arm.

The mean arterial pressure (MAP) often is used as a target value in the treatment of hemodynamic instability. It is calculated by the following formula: $MAP = \text{systolic blood pressure} + (2 \times \text{diastolic blood pressure})/3$. A seated blood pressure reading after five minutes of rest is recommended, even though this is not always possible in ED patients. Postural changes in blood pressure should be assessed by taking readings seated and two minutes after the patient stands.⁵

Theoretically, patients should refrain from caffeine for 30-60 minutes, smoking for 15-30 minutes, and/or exogenous stimulants such as phenylephrine, nasal decongestants, or eye drops prior to blood pressure monitoring to eliminate potential secondary causes of hypertension.¹ (See Tables 3 and 4.)

Invasive Blood Pressure Monitoring

Invasive blood pressure monitoring via an arterial catheter connected to a transducer is indicated in some clinical circumstances. These include patients who have very high or very low blood pressures, patients who require continuous infusions of antihypertensive medications or pressors, or those in whom accurate blood pressures may not be able to be obtained, such as obese patients.¹⁰

The physical examination should be directed toward identifying signs of end-organ damage. (See Table 5.)

Laboratory and Radiographic Evaluation

Patients with severe, symptomatic hypertension should have a diagnostic evaluation targeted to their symptoms, such as electrocardiogram (ECG), chest x-ray, cardiac enzymes, or computed tomography (CT) of the brain. Few studies have assessed the prognostic value of abnormal laboratory findings in patients with severe asymptomatic hypertension.² Measurement of blood urea

Table 2. Causes of Hypertension^{1,2,4}

- Essential hypertension
- Anxiety
- Pain
- Hypoxia
- Bladder distention

SECONDARY HYPERTENSION

- Renal disease
- Endocrine
 - Primary aldosteronism
 - Congenital adrenal hyperplasia
 - Cushing's disease
 - Pheochromocytoma
 - Pregnancy-induced hypertension
 - Sleep apnea
- Neurologic
 - Increased intracranial pressure
 - Quadriplegia/dysautonomia
- Drugs
 - Amphetamines
 - Antidepressants
 - Cocaine
 - Cyclosporine
 - Ethanol
 - Glucocorticoids
 - Monoamine oxidase inhibitors
 - Mineralocorticoids
 - Non-steroidal anti-inflammatories
 - Oral contraceptives
 - Phenothiazines
 - Decongestants
 - Appetite suppressants
 - Tricyclic antidepressants
- Withdrawal of clonidine or beta-blocker therapy
- Coarctation of the aorta

nitrogen (BUN), creatinine, and a urinalysis are reasonable since renal failure often is asymptomatic. An ECG is indicated in a patient with chest pain, but no studies demonstrate benefit of obtaining an ECG in an asymptomatic patient.² A baseline chest radiograph is of low yield as well in the asymptomatic patient.^{11,12} A urine drug screen can be useful for patients in whom drug use is suspected as a cause of hypertension. More specialized tests are indicated to diagnose causes of secondary hypertension. (See Table 6.)

These diagnostic studies are not meant to be used as decision tools in the ED patient, as the results are not usually available in a timely manner. It is reasonable, however, to initiate the diagnostic evaluation in the ED when a secondary cause of hypertension is suspected.

Hypertension Syndromes

Hypertension syndromes span a clinical spectrum of diseases that differ in the swiftness and aggressiveness of their manage-

Table 3. Causes of Resistant Hypertension⁴

- Improper blood pressure measurement
- Volume overload and pseudotolerance
- Excess sodium intake
- Volume retention secondary to kidney disease
- Inadequate diuretic therapy
- Drug-induced
- Non-compliance
- Inadequate doses
- Inappropriate drug combinations
- Obesity
- Ethanol
- Tobacco

ment. The definitions of the various syndromes differ between authors, and the boundaries separating the syndromes often are blurred. The presence or risk of progressive end-organ damage determines the urgency with which severely increased blood pressure needs to be lowered.²

Hypertensive Emergency. Hypertensive emergency (also known as hypertensive crisis) includes a spectrum of clinical entities that share the common requirement of elevated blood pressure and rapid, progressive damage to end-organs. The most severely affected end-organs include the heart, brain, kidneys, and large arteries. It is important to keep in mind that the diagnosis of hypertensive emergency is not only dependent on an absolute blood pressure measurement, but is based on the clinical manifestations at the time of presentation. A hypertensive emergency requires immediate blood pressure reduction within 1-2 hours to prevent or limit target organ damage. Immediate blood pressure reduction to a normal range is not indicated, as this may decrease cerebral blood flow in a patient who is chronically hypertensive who likely has impaired cerebral autoregulation.

Clinical Presentation. Patients may present with symptoms of headache, vomiting, altered mental status, cardiac ischemia, acute left ventricular failure with pulmonary edema, dissecting aortic aneurysm, or preeclampsia/eclampsia as a manifestation of their hypertensive emergency. Hypertensive emergencies also can present as a product of catecholamine excess such as occurs with drug intoxication such as cocaine, pheochromocytoma, or monoamine oxidase inhibitor crisis. A thorough history, including medications/drugs used, sometimes can be the only clue as to a secondary etiology.

Physical exam findings vary, depending on what organ system is affected. There may be fundoscopic evidence of papilledema, new hemorrhages or exudates, neurologic manifestations of acute stroke (i.e., focal weakness), rales, or a gallop, indicating cardiac involvement.

Treatment. Treatment includes reduction the blood pressure by 10% in the first hour, with an additional 15% reduction gradually over the next 2-3 hours. Hypertension associated with aortic dissection is the exception to this rule, as immediate blood pressure reduction is important in limiting the extent of the dissection. An easily titratable parenteral agent must be used in the

Table 4. Causes of Isolated Systolic Hypertension⁴

- Aging (increased aortic rigidity)
- Increased cardiac output
 - Thyrotoxicosis
 - Anemia
 - Aortic insufficiency

treatment of hypertensive emergencies. Oral agents can result in a harmful, precipitous decrease in blood pressure that often is difficult to reverse. Nitroprusside (Nipride) is the cornerstone of treatment of hypertensive emergencies. It does require a continuous infusion and does have risk of cyanide toxicity. Other choices include esmolol (Brevibloc), labetalol (Trandate, Normodyne), fenoldopam (Corlopam), and nicardapine (Cardene).

Hypertensive Encephalopathy. Hypertensive encephalopathy is an uncommon, potentially reversible constellation of neurologic symptoms associated with an abrupt rise in blood pressure. The clinical presentation is thought to be due the increased MAP overwhelming the brain's ability to autoregulate cerebral blood flow. Significant vasospasm may occur, leading to increased intracranial pressure secondary to a transient decrease in the blood-brain barrier integrity, with a resultant cerebral edema. With persistently elevated systemic pressure, arteriolar damage and necrosis occur, leading to cerebral hemorrhage and death.

Clinical Presentation. The patient with hypertensive encephalopathy may present with symptoms ranging from vomiting, headache, or visual changes to seizures or altered mental status. Focal neurologic deficits can occur but usually do not follow an anatomic distribution. Papilledema often is found as well. CT of the head is warranted to exclude other conditions such as hemorrhage or mass. CT often is normal, but may show white-matter edema of the occipital lobes and other posterior structures.¹³ It is important to keep in mind that hypertensive encephalopathy should be a diagnosis of exclusion; the emergency physician must exclude other potentially life-threatening causes of the patient's symptoms. The diagnosis can be confirmed if the patient's symptoms improve with lowering of the blood pressure.²

Treatment. An easily titratable parenteral agent should be used in the treatment of hypertensive encephalopathy. The rapid, controlled reduction of blood pressure over a few hours can be life-saving. The most commonly used agent for this is IV nitroprusside. The MAP should be reduced by 25% over an hour, with a minimum diastolic pressure of 110 mmHg.¹⁴ Excessive reduction of blood pressure must be avoided to prevent the increased cerebral ischemia and potential for stroke that results if the pressure falls below the lower level of cerebral autoregulation. In non-hypertensive individuals, this is at about a MAP of 60, but in chronically hypertensive patients, the MAP below which cerebral ischemia will occur is much higher.¹⁴ Admission to the intensive care unit (ICU) is necessary for close monitoring and titration of parenteral anti-hypertensive medications.

Table 5. Physical Examination Clues of Hypertensive End-Organ Damage

Fundi	Retinal hemorrhages, papilledema
Cardiovascular	Rales, jugular venous distention, S3, carotid, abdominal or femoral bruits
Neurologic	Level of consciousness, visual fields, focal sensory/motor deficits
Abdomen	Enlarged kidneys, masses, abnormal aortic pulsations
Extremities	Edema, pulse quality/symmetry

Hypertensive Urgency. Hypertensive urgency is the presence of an elevated blood pressure, generally recognized as a systolic blood pressure greater than 180 or diastolic blood pressure greater than 110, accompanied by non-specific symptoms in the absence of acute, severe target organ damage but where the patient is at high risk for such an event. The above parameters are arbitrary numbers and are not absolute cutoffs for the diagnosis of urgency. The clinical scenario mandates the level at which the physician becomes concerned and may wish to contemplate giving antihypertensive drug therapy.¹⁵ Many factors need to be considered when determining the need to urgently treat significantly elevated blood pressure in the absence of end-organ damage. The risk of an acute complication of elevated blood pressure is related to the patient's age, chronicity of the disease, the rapidity of the blood pressure increase, and the nature of any previous end-organ damage. Patients with a higher risk of a temporally related adverse event include those with prior end-organ disease such as stroke, coronary artery disease, or renal insufficiency.² Despite the common practice of treating severely increased blood pressure in the asymptomatic ED patient, there is little evidence to support this approach.^{2,16} In most patients with a greatly elevated blood pressure but no symptoms referable to the blood pressure have little risk of developing an adverse event such as a stroke or myocardial infarction in the near term.^{2,17}

Clinical Presentation. Does the asymptomatic little old lady strapped to the back board after her fender bender accident who has the isolated systolic blood pressure of 210 really need urgent treatment of that blood pressure? The most common clinical presentations are asymptomatic patients who have severe elevations in blood pressure without any target organ damage presenting to an acute medical setting for a complaint unrelated to hypertension.¹⁵ The absence of an acute stroke in evolution, subarachnoid hemorrhage, hypertensive encephalopathy, myocardial ischemia, acute left ventricular failure, pulmonary edema, aortic dissection, pheochromocytoma, drug-related, catecholamine-excess state, and preeclampsia or eclampsia imparts a diagnosis of hypertensive urgency. If the aforementioned symptomatology is present, aggressive treatment within minutes for hypertensive emergency is indicated. Otherwise, asymptomatic individuals who have a

Table 6. Diagnosis of Causes of Secondary Hypertension

Pheochromocytoma	Urinary catecholamines
Cushing's disease	Plasma cortisol
Hyperaldosteronism	Plasma aldosterone Plasma rennin

normal physical exam and clinical evaluation do not require emergent treatment. Hypertension associated with chest pain or headache are common ED presentations. It may be difficult to determine if the symptoms are due to the elevated blood pressure or the blood pressure is elevated secondary to the pain. Often this determination is not made until retrospect.

Treatment. To manage hypertensive urgency, two issues must be addressed. First, the physician must believe that there is a high short-term risk of complications should the blood pressure rise acutely.¹⁸ Second, the patient must be at high risk for cardiovascular or renal complications in the near future such that acutely lowering the blood pressure might improve the prognosis.¹⁵ A significant consideration in the decision to treat hypertensive urgency is the local medical standard of care predetermined by tort law and legal precedents set by personal injury lawsuits. These cases are based on arbitrary blood pressure readings that do not consider individual patient presentations. EDs and urgent care centers have formulated standard policies not to discharge patients if the blood pressure is above the arbitrary threshold. However, to date no outcome data corroborate that acutely lowering blood pressure other than in a hypertensive emergency improves short-term prognosis.¹⁵ Essentially this is a judgement call, and most likely a consensus panel of experts would disagree with each other. Secondly, the physician must decide that the benefits of treatment are likely to outweigh the risks.¹⁸ If both answers are yes, the process to reduce blood pressure safely over a few hours can be started.¹⁵ These patients should have a treatment strategy initiated from the ED, but the blood pressure does not necessarily need to be decreased to normal prior to discharge.² The choice of oral agents is discussed in a subsequent section.

Accelerated Malignant Hypertension. Accelerated malignant hypertension is an uncommon entity, affecting only 1-5% of all patients with hypertension. Young black men are particularly prone to this condition, which is caused most often by underlying renal or renovascular disease.¹⁹ Patients often present with a long-standing history of hypertension associated with acutely elevated blood pressure and with eye findings such as papilledema, flame-shaped hemorrhages, or soft exudates.² Patients may present with headache, blurred vision, nocturia, scotomata, and weakness. Renal insufficiency and proteinuria often are seen on laboratory evaluation. Accelerated malignant hypertension is associated with a massive over-secretion of rennin and aldosterone.^{19,20} Treatment should be started urgently, as in the case of hypertensive emergencies and hypertensive

encephalopathy. Nitroprusside or fenoldopam can be used, except in marked renal failure, in which case the renal vasculature no longer may respond to vasodilators. A beta-blocker such as labetalol is another reasonable choice.²¹ Drugs that interrupt the renin-angiotensin system (such as propranolol [Inderal] or captopril [Capoten]) can normalize and maintain blood pressure in patients with malignant hypertension even during a hypertensive crisis.²¹

Transient Hypertension. Transient hypertension is elevated blood pressure in the presence of no prior history. It cannot be distinguished from other forms of hypertension based on one visit. However, transient hypertension typically does not produce severely elevated blood pressures. The most common causes include pain, anxiety, hypoxia, alcohol withdrawal, bladder distention, and drugs (e.g., oral contraceptives, steroids, NSAIDs, nasal decongestants, cold remedies, appetite suppressants, and antidepressants). Before treatment is initiated with antihypertensive medications, it is prudent to obtain a thorough history to identify any possible reversible causes of the high blood pressure. Treatment of the primary underlying process or discontinuation of the offending agent generally results in resolution of the elevated blood pressure. End-organ damage is highly unlikely, and the blood pressure rarely requires specific intervention. All patients should be referred for a follow-up blood pressure measurement after the acute process has resolved.

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Physician CME Questions

- Which of the following is *false* regarding essential hypertension?
 - The exact cause is unknown.
 - It is thought to have several contributing factors, such as age, obesity, heredity, and dietary salt intake.
 - It occurs when an etiology is defined.
 - More than 90% of patients with hypertension have essential hypertension.
- In which of the following patients is invasive blood pressure monitoring indicated?
 - Patients who require continuous infusions of antihypertensive medications
 - Patients with very high blood pressure
 - Patients with very low blood pressure
 - Patients in whom accurate blood pressures cannot be obtained, such as obese patients
 - All of the above

63. Causes of isolated systolic hypertension include aging and increased cardiac output.
- True
 - False
64. Which of the following statements is true regarding hypertensive encephalopathy?
- It is a common condition in hypertensive patients.
 - It usually is associated with intracranial hemorrhage.
 - The brain CT often is normal but may show white matter edema of the posterior brain structures.
 - Treatment with oral antihypertensive agents is acceptable.
 - Normal blood pressure should be obtained rapidly.
65. Accelerated malignant hypertension is associated with a massive oversecretion of rennin and aldosterone.
- True
 - False
66. Which of the following statements is true regarding a hypertensive emergency?
- Immediate blood pressure reduction to the normal range is indicated in all cases.
 - Eclampsia is not considered a hypertensive emergency.
 - Oral agents are preferred in the treatment of hypertensive emergency.
 - The treatment goal is blood pressure reduction by 10% in the first hour with an additional 15% reduction in the next 2-3 hours.
67. Which of the following statements is true of transient hypertension?
- The most common causes are pain, anxiety, hypoxia, alcohol withdrawal, bladder distention, and drugs.
 - Treatment of the primary underlying process or discontinuation of the offending agent generally results in resolution of blood pressure.
 - End-organ damage is highly unlikely.
 - Blood pressure rarely requires specific intervention.
 - All of the above
68. Which of the following is a cause of resistant hypertension?
- Non-compliance
 - Tobacco
 - Obesity
 - Inappropriate drug combinations
 - All of the above
69. Which of the following statements is *false* regarding physical examination of a patient with hypertension?
- Often, elevated blood pressure is the only abnormal finding on examination of patients with hypertension.
 - Blood pressure needs to be verified by appropriate measurement in only one arm.

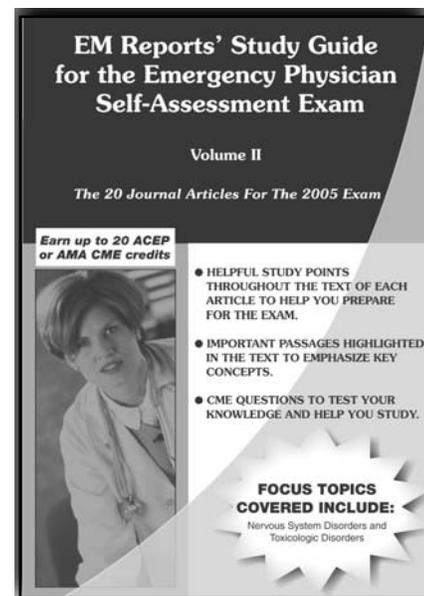
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- C. The mercury sphygmomanometer is the gold standard device for blood pressure measurement.
 - D. The cuff size is critical to accurate measurement of blood pressure.
70. Which of the following statements is *false*?
- A. There are no strong data to corroborate that lowering blood pressure acutely in the patient with hypertensive urgency improves prognosis.
 - B. Hypertensive urgency is defined as a significantly elevated blood pressure in the absence of acute, severe end-organ damage.
 - C. In patients with accelerated malignant hypertension, the renal vasculature no longer may respond to vasodilators.
 - D. The typical patient with accelerated malignant hypertension is an older, Caucasian patient with long-standing hypertension.

In Future Issues:	Hypertension, Part II
--------------------------	------------------------------

CME Answer Key

- | | |
|-------|-------|
| 61. C | 66. D |
| 62. E | 67. E |
| 63. A | 68. E |
| 64. C | 69. B |
| 65. A | 70. D |

CME Instructions

Physicians participate in this continuing medical education program by reading the article, using the provided references for further research, and studying the questions at the end of the article. Participants should select what they believe to be the correct answers, then refer to the list of correct answers to evaluate their knowledge. To clarify confusion surrounding any questions answered incorrectly, please consult the source material. *After completing this activity, you must complete the evaluation form that will be provided at the end of the semester and return it in the reply envelope provided to receive a certificate of completion.* When your evaluation is received, a certificate will be mailed to you.

Emergency Medicine Reports

CME Objectives

To help physicians:

- quickly recognize or increase index of suspicion for specific conditions;
- understand the epidemiology, etiology, pathophysiology, and clinical features of the entity discussed;
- apply state-of-the-art diagnostic and therapeutic techniques (including the implications of pharmaceutical therapy discussed) to patients with the particular medical problems discussed;
- understand the differential diagnosis of the entity discussed;
- understand both likely and rare complications that may occur.

The Practical Journal for Emergency Physicians
Emergency Medicine Reports

**Hypertension,
Part I**

Classification of Blood Pressure

CATEGORY	SBP MMHG		DBP MMHG
Normal	< 120	and	< 80
Prehypertension	120-139	or	80-89
Hypertension, Stage I	140-159	or	90-99
Hypertension, Stage II	≥ 160	or	≥ 100

Causes of Resistant Hypertension

- Improper blood pressure measurement
- Volume overload and pseudotolerance
- Excess sodium intake
- Volume retention secondary to kidney disease
- Inadequate diuretic therapy
- Drug-induced
- Non-compliance
- Inadequate doses
- Inappropriate drug combinations
- Obesity
- Ethanol
- Tobacco

Causes of Isolated Systolic Hypertension

- Aging (increased aortic rigidity)
- Increased cardiac output
 - Thyrotoxicosis
 - Anemia
 - Aortic insufficiency

Diagnosis of Causes of Secondary Hypertension

Pheochromocytoma	Urinary catecholamines
Cushing's disease	Plasma cortisol
Hyperaldosteronism	Plasma aldosterone Plasma rennin

Causes of Hypertension

- Essential hypertension
- Anxiety
- Pain
- Hypoxia
- Bladder distention

SECONDARY HYPERTENSION

- Renal disease
- Endocrine
 - Primary aldosteronism
 - Congenital adrenal hyperplasia
 - Cushing's disease
 - Pheochromocytoma
 - Pregnancy-induced hypertension
 - Sleep apnea
- Neurologic
 - Increased intracranial pressure
 - Quadriplegia/dysautonomia
- Drugs
 - Amphetamines
 - Antidepressants
 - Cocaine
 - Cyclosporine
 - Ethanol
 - Glucocorticoids
 - Monoamine oxidase inhibitors
 - Mineralocorticoids
 - Non-steroidal anti-inflammatories
 - Oral contraceptives
 - Phenothiazines
 - Decongestants
 - Appetite suppressants
 - Tricyclic antidepressants
- Withdrawal of clonidine or beta-blocker therapy
- Coarctation of the aorta

Physical Examination Clues of Hypertensive End-Organ Damage

Fundi	Retinal hemorrhages, papilledema
Cardiovascular	Rales, jugular venous distention, S3, carotid, abdominal or femoral bruits
Neurologic	Level of consciousness, visual fields, focal sensory/motor deficits
Abdomen	Enlarged kidneys, masses, abnormal aortic pulsations
Extremities	Edema, pulse quality/symmetry

Supplement to *Emergency Medicine Reports*, March 21, 2005: Treating Hypertension in the Emergency Department: First, Do No Harm, Part I." Authors: **Lisa Freeman Grossheim, MD, FACEP**, Assistant Professor, Department of Emergency Medicine, University of Texas Medical School at Houston; **Monica Carvajal, MD**, Resident Physician, Department of Emergency Medicine, University of Texas Medical School at Houston; and **Heidi Knowles-Ely, MD**, Resident Physician, Department of Emergency Medicine, University of Texas Medical School at Houston.

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Emergency Medicine Specialty Reports

Supplement S05178

March 2005

Few things in emergency medicine provoke emotions as strong as notifying survivors of the death of a family member or loved one. However, sudden and unexpected patient death is a routine occurrence in emergency medicine. An emergency physician often is the first and only health care provider that families interact with after a loved one's death. Yet despite its regularity, emergency physicians often are uncomfortable and undertrained in delivering bad news. This is especially true when the death involves a child. Counseling families after a death needs to be performed properly and systematically to help manage the grief response of survivors. The emergency physician also must be well versed in the after care that is associated with a death in the emergency department (ED), such as organ donation. This issue of Emergency Medicine Specialty Reports offers the means to provide an effective and compassionate death notification in a variety of circumstances.

—The Editor

Introduction

Emergency physicians commonly are required to perform death notifications in the emergency department (ED). This can be a stressful task for the emergency physician who usually has no pre-existing relationship with the patient or survivors. Furthermore, deaths in the ED frequently are unexpected, giving survivors no time to prepare for the event. In addition, there is added pressure on the emergency physician who often simultaneously is evaluating several other patients as well as completing the paperwork and phone calls associated with a patient death, and may not be afforded a great deal of time to spend with the survivors of the deceased. Emergency physicians need to have a clear understanding of the importance of an effective and compassionate

death notification, as a poorly delivered notification may have a lasting negative impact on the survivors.^{1,2}

There also is a general dislike for delivering bad news among physicians that may arise from several fears about death. Many may feel a sense of failure upon the death of a patient. With advances in medicine, many see death as preventable in most cases and may regard death as a defeat or as a personal failure. In addition, it may be difficult for some physicians to accept not

being able to answer difficult questions posed by family members regarding their loved one's death. Physicians may fear being blamed by the family for the death, may have unresolved fears of death and illness in general, or may be uncomfortable with the reaction of survivors to death.^{3,4} Oddly enough, in courses such as advanced trauma life support (ATLS), advanced cardiac life support (ACLS), and pediatric advanced life support (PALS),

health care providers are taught how to save lives, but are not taught how to deal with the aftermath when they cannot save the patient.⁵ Fortunately, many of these fears can be addressed and alleviated with education on death and death notification.

In a survey of attending physicians and residents at The Medical College of Pennsylvania, physicians were asked about their perceptions of family needs in death notification and which topics were stressful to them. Physicians perceived that the issues most important to the family when delivering a death notification were the cause of death, the hospital care rendered, and preparing the family to view the body. Organ donation was perceived by physicians to be the least important topic for families. The issues felt to be most stressful were the grief responses of family (especially anger and hysteria), an unknown cause of death, and ask-

Death Notification and Grief Response in the Emergency Department

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ing families about autopsy and organ donation wishes.⁶

Death Notification Methods

Dealing with death can be an uncomfortable experience. For the general public, it is not a common occurrence, as compared those who work in an ED or other health care setting. The average person suffers the death of a loved one approximately once every 12 years.⁷ Society's discomfort with death is reflected in the use of euphemisms to describe it, such as "passed away" and "expired." The experience of the health care worker is somewhat different, considering that 70% of all deaths occur in a health care institution and usually are handled by the staff.⁷ Despite the number of deaths occurring in health care facilities, residents and practicing physicians often have a lack of confidence and skills to deliver death notifications. Many report a lack of formal training and have relied on trial and error or observation of peers to learn how to deliver bad news. In addition to the lack of training, physicians may have feelings of failure over a patient's death and carry a sense of responsibility that makes notifying families difficult.⁸ Recognition of this tendency by physicians may place into perspective the death of one's patient when making death notification to the family.

The SUNY Downstate Medical Center performed a survey of resident and attending physicians in 1984. The survey evaluated

the use of a critical notification over the telephone to summon family members to the hospital (where the death notification was given), compared to giving a direct death notification by telephone. In unexpected deaths, physicians responded that giving the family a critical notification was preferable to giving a death notification (72% compared to 25%). If the physicians were the recipients in an unexpected death, they preferred a critical notification (60%) to a death notification (33%). In expected deaths, 13% of physicians responded that critical notification would be better to give a family, and 83% preferred giving a death notification. The numbers were similar (14% for critical notification and 82% for death notification) if the physician was the recipient of the bad news. With regard to the announcement, 58% preferred to give an immediate announcement and 33% preferred a gradual one. If the physician was being told of a death, 67% preferred an immediate announcement vs. 27% preferring the gradual one. This was compared to a Gallup poll of the general public in which 64% would prefer a critical notification and 27% a death notification. When told of a death, 74% prefer immediate notification compared to 17% preferring gradual. The Gallup poll asked only about situations involving unexpected deaths.⁹ The physician perception was not far off when comparing their preference for giving a critical notification rather than a death notification over the phone to the public's preference. However, it seems that physicians may prefer to give an immediate notification less often than the families would desire.

Understanding the preferences of families hearing the news of a loved one's death should help shape the method in which physicians make death notifications. This also implies the importance of physicians possessing proper notification skills. Knowing what behaviors lead to a negative experience for the family assists in developing skills that allow for a positive experience during a difficult time.

In a survey of families, the most common complaints about their ED experience with the death of a loved one were: not being kept informed, not having a method for answering questions after leaving the hospital, not speaking with a physician (or realizing that they had), being unclear on the details of pre-hospital and ED care, long periods without contact from ED staff, and patient belongings being handled improperly.¹⁰ In a survey of surviving family members of deceased trauma patients, qualities felt to be most important were: attitude of the person delivering the bad news, clarity of the message, delivering the news in a private area, answering questions, and providing sympathy.¹¹

The importance of using a standard method for death notification has been tested and shown to be beneficial. Ottawa General Hospital (a tertiary care hospital with an ED) completed survivor surveys with families of patients who died in the ED before and after the implementation of a structured, multidisciplinary protocol for death notification. After implementation, there was an increase in the percentage of families who felt adequately informed of the events leading up to death and that there was sufficient support from the ED staff. There also was a decrease in lengthy delays of receiving information and death notification.¹²

A survey through Crittenton Hospital in Rochester, Michigan was conducted using one of a four-member team to complete a

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Table 1. Framework for Death Notification^{25,26}

1. Choose an appropriate setting
2. Contact the family
3. Prepare to speak with family
4. Arrival of family
5. Death notification
6. Reaction to grief response
7. Viewing of the body
8. Conclude the care of the deceased and arrange follow-up

51-item questionnaire with 26 survivors of 22 deceased patients. In general, families stated that they wanted to be greeted on arrival to the ED and be updated on the condition of their family member often. Specifically mentioned was a desire to not be asked to complete paperwork on arrival, especially while waiting for news about their critically ill family member. Families wanted periodic contact from ED staff who knew where to find them, preferably in a comfortable room, rather than being sent to the waiting room in random fashion. How the family was informed of the death was more important than who actually told them. An important quality desired by families was that the notifier be warm and caring. When viewing the body, families want to be accompanied by a staff member who remains present but is not intrusive. Additionally, most felt viewing the body was beneficial. The things families remembered months later were small things, such as not being left alone, being offered coffee or water, appropriate touch, and staff assisting with phone calls and other tasks. Among family members not adjusting well to the death, a feeling of poor treatment was expressed, such as staff using harsh, non-caring voices or treating them as an imposition. The author of the report recommended training ED staff to provide the appropriate emotional support for family members of the deceased.¹³

Education

Due to the importance of providing an effective and compassionate death notification, and the comments of physicians in surveys suggesting that training on death notification would be beneficial, many medical school and residency programs are developing educational programs to teach death notification delivery. Examples from several institutions are included below. This illustrates the variety of ways in which the subject can be addressed and taught. Some institutions also have studied the effectiveness of their educational programs. The volume of literature on education provides ample material for any academic institution to create and implement an effective teaching module for medical students and residents. Even brief programs can have an impact by making the effort to discuss a topic that is uncomfortable for many.

A 1990 survey of emergency physicians in Oregon illustrates the overall need for formal education on death notification. Seventy percent of physicians in the survey reported that notifying survivors of a death was emotionally difficult at least half of the time. The degree of difficulty did not differ based on the age of physician or the number of deaths reported. Of interest, physi-

cians were likely to spend more time with families in a death they found more emotionally difficult. Only 32% had training in residency that dealt with patient death, and 48% had such training in medical school. Forty-one percent had attended continuing medical education courses, and 77% reported independent study on the topic. An overwhelming majority of 94% felt that there was a need for death notification education.¹⁴

A complete review of articles specifically describing the delivery of bad news is summarized by Rosenbaum et al. This is a thorough reference of the various techniques used to teach death notification and delivery of bad news in general. As would be expected, each method (lectures, small group discussions, peer role playing, simulated patient scenarios, and direct clinical observation) has both advantages and disadvantages. Didactic sessions require the least amount of resources, can accommodate large groups, and allow for the presentation and demonstration of information. However, they do not facilitate discussion, allow for practice, or provide feedback. Role playing, while helpful by allowing for practice of skills, is an artificial setting that clearly has an effect on the participants. The author's final recommendation was to tailor the process to adult learners, which ideally would include a brief focused lecture on techniques, discussion in groups, practice opportunities, and feedback on performance.⁸

A prospective, randomized study performed at York, Pennsylvania followed a cohort of 36 residents during an ACLS course. Half of the residents had a one-hour death notification lecture and half did not. Then, all residents had a 12-minute simulated death notification, which was evaluated by two trained evaluators blinded to lecture attendance. Those who attended the lecture had a better performance in death notification.¹⁵ This was followed up by a prospective observational study of emergency medicine residents evaluating their death notification skills. All residents received training in ACLS during the first week of residency. A 60-minute lecture and 10-minute simulated death notification scenario were included in the ACLS program. Then, over the three-year residency, they were observed in the ED by trained evaluators. Evaluators were not aware of the training level of the resident giving the notification. Fifty-five percent received excellent ratings, 40% satisfactory, and 5% unsatisfactory. Third-year training level and being female predicted a higher percentage of excellent rating. The two tasks less likely to be done well were comforting the family and appearing comfortable during the notification.¹⁶

Emory University uses standardized patients to train residents to deliver death notifications. The residents attended a large group didactic session, small group didactic sessions, and two standardized patient exams. Pre-test and post-test comfort levels were surveyed, and these improved with the completion of the course.² Emory also evaluated the effects of a didactic session and a standardized patient on fourth-year medical students enrolled in an emergency medicine elective. The classroom session improved written test scores. However, a self-assessment made by students after standardized patient encounters showed a decline in level of confidence to perform a death notification.¹⁷

Oregon Health Sciences University describes a program that combines a presentation of skills, videotapes of well-done notifi-

Table 2. Death Notification Checklist

- Make the notification in person, if possible
- Do not delay notification
- Set aside adequate time for notification and questions
- Gather history and other necessary information
- Make sure family members are in a private, comfortable room
- Identify that you are speaking to the correct family
- Seek assistance of chaplain or social services
- Introduce yourself and your role in patient's care
- Give warning that you have bad news
- Sit down with family
- Talk slowly and calmly
- Make every effort to avoid looking uncomfortable or awkward
- Find out what the family knows
- Use the patient's name
- Give a brief synopsis of events
- Tell family of death in first 1-2 minutes of conversation
- Do not use euphemisms, use the terms "dead" or "died"
- Give opportunity for reaction and accept the reaction
- Do not nullify family members' grief or minimize their reaction
- Offer sympathy and concern and show your support
- Once family has reacted, provide appropriate details of the resuscitation
- Answer any questions
- Be aware of survivor guilt and address it
- Ask about autopsy and organ donation
- Arrange for family to view body if desired
- Prepare family for what to expect when viewing body
- Have staff clean room and prepare body to be viewed
- Notify coroner, if necessary
- Notify primary care physician
- Provide method for family to follow-up
- Return personal belongings
- Conclude with appropriate closure
- Debrief staff if needed
- Take care of your own emotional response
- In appropriate situation, consider family presence at resuscitation

cations, and role-playing with trained volunteers. Feedback is given by the other residents observing, the volunteers, and faculty members to evaluate the performance of each resident and give suggestions on how to improve the encounter. In the article, sample scenarios are provided along with a table of guidelines for death notification.¹⁸

The University of Toronto has a third-year medical student program that uses video, discussion periods, small group didactics, and standardized patient scenarios. Questionnaires to evaluate the program revealed that 68% of students had thought about the task of breaking bad news often. Those with a plan or approach to delivering bad news rose from 49% to 92% after the course. The students who felt competent to deliver bad news rose from 23% to 74% after the session.¹⁹

Notification Process

Much of the literature on death notification provides recommendations on how to provide an appropriate delivery.^{3,20-26} Often the same suggestions are seen in many different sources. Despite the fact that there are many seemingly small details, they are repeatedly mentioned in the literature and will be summarized and described below in this section and in the sections on grief and aftercare. In the high stress situation of processing the death of a patient and then notifying the family, it is easy to overlook details that make a large impact on the family.

There are many steps in providing a proper death notification. To assist in organizing this into a workable format, six- and eight-step frameworks have been described. These two are similar and have been combined in Table 1.^{25,26} This template provides a starting place for organizing a well planned death notification into which important details can be added.

The first action is to prepare for the notification. The notification should be done in person, if possible. It should be done only over the phone if the family is more than 1-2 hours away. Many of the prepa-

rations usually are handled by ED staff members, though ED physicians ultimately are responsible for making sure that their departments are adequately caring for the families of those patients who are critically ill or dead on arrival. When the family arrives, they should be escorted directly to a room set aside for families of deceased or critically ill patients. The room should be non-clinical in appearance and should more resemble a living room, being warm and comfortable. There should be a phone available for families to use and plenty of comfortable chairs. Ideally, someone should stay with the family and provide updates periodically. If someone from social services or a chaplain is available, he or she should be summoned to be with the family. Chaplains can be a tremendous resource for the family of the deceased. They are highly skilled at providing support regardless of a denominational match with family. Additionally, chaplains often have more time available to spend with the family than the ED staff. They also have practical experience with funeral arrangements and, most importantly, counseling those in emotional turmoil.²⁴ Offering coffee or water to family members is a small gesture that families may appreciate. When it is time for the notification, a member of the staff should assemble all family present into the room so that one notification can be made.

Physicians also have their own tasks in preparing for a death notification. Time must be set aside to spend with the family to answer questions and provide support. This is especially difficult in a busy ED, but it is important not to appear rushed when speaking with the family. It also is important to tell the family in a timely manner, once the patient has been pronounced dead. The family eagerly is waiting to hear what has transpired, and it is very important not to prolong their anxiety and anticipation. Before entering the room, it is essential to gather all the information necessary to talk to the family. If someone has been providing updates to the family, ascertain from that person what the family already knows and how the family is handling the situation. Be sure to know the patient's name and a brief synopsis of

Table 3. Steps of Critical Incident Stress Debriefing²⁷

1. **Introductory Phase:** Explain purpose and goals
2. **Fact Phase:** Description of event
3. **Feeling Phase:** Emotional reaction to event
4. **Symptom Phase:** Physical, mental, and stress response to event
5. **Teaching Phase:** Symptoms to watch for and coping/stress management skills
6. **Re-entry Phase:** Reassurance and follow-up arrangements if needed

what happened leading up to the death. Remove any soiled items such as gloves, gown, and mask before entering the room. The nursing staff should begin preparations for the family to view the body while the notification is being made.

Once prepared, enter the room and introduce yourself and your role in the care of the deceased. Confirm that the correct family is present. Identify the nearest relative and address that person directly, especially if there is a large group present. Sit down with the family and assume an open posture and try to appear as comfortable and at ease as possible. It is important to avoid looking anxious or uncomfortable as the family will notice this and may react negatively. Maintain eye contact as much as possible and speak clearly and slowly in a kind tone of voice.

If it is unclear what the family knows, establish this first. It is advisable to warn the family that you have bad news. If they are aware that the patient may be dying and appear anxious to know, quickly proceed to the notification with minimal introduction of the details. If the family is not aware of what has transpired, then give a brief summary of the circumstances and events leading up to death, including efforts made. Regardless of which approach is taken, the actual notification should occur within 30 seconds to 2 minutes of starting a dialogue with the family. Details can be provided later, based on what the family desires to know.

When telling the family that the patient has died, euphemisms such as “passed away,” “didn’t make it,” or “no longer with us” should not be used. It is important to state the words “dead” or “died.” This avoids any confusion and facilitates the grief process. The patient always should be referred to by name and never as “the patient,” “the deceased,” or “the body” as these terms are very impersonal and are offensive to the family. Once notified, the family should be allowed a pause to react to the news. This grief response should be allowed and accepted by the physician. If the family responds with anger, allow them to vent and do not argue or become defensive. Do not minimize their reaction or attempt to nullify their grief. Comments such as “it was God’s will” or “it was their time” or other similar remarks should not be used. At this time, sympathetic comments such as “you have my deepest condolences” or “I am sorry that his happened to you and your family” or other similar language are appropriate. Do not be apologetic or guilty, but do express your sorrow for the family. It is acceptable in the appropriate situation to provide a comforting touch such as touching a shoulder or hand gently. Do not feel obligated to hide all of your own

Table 4. Death of a Child in the Emergency Department, A Joint Statement by the American Academy of Pediatrics and the American College of Emergency Physicians³¹

The death of a child in the emergency department (ED) is an event with emotional, cultural, procedural, and legal challenges that often distinguish it from other deaths.

The American College of Emergency Physicians and the American Academy of Pediatrics support the following principles:

- Emergency physicians should use a family-centered and team-oriented approach when a child dies in the ED.
- Emergency physicians should provide personal, compassionate, and individualized support to families while respecting social, religious, and cultural sensitivity.
- Emergency physicians should notify the child’s primary care physician of the death and, as appropriate, work with the primary care physician in follow-up of post-mortem examination results.
- EDs should incorporate procedures to organize resources and staff to provide a coordinated response to a child’s death. These include:
 - Working with the primary care physician to ensure notification of subspecialty physicians of the death of their patient.
 - Educating staff as to the resources available to assist families.
 - Facilitating identification and management of a medical examiner’s case and identification and reporting of cases of child maltreatment.
 - Promulgating liaisons with other individuals and organizations that may assist families, communities, and staff.
 - Assisting ED staff, out-of-hospital providers, and others who are experiencing critical incident stress.
 - Facilitating organ procurement and obtaining consent for postmortem examinations when appropriate.

emotions—just keep them controlled. It even may be appropriate to cry with a family in highly emotional situations, such as the death of a child. The extreme of shielding one’s emotions completely should be avoided as it may make a physician appear cold and callous.

After allowing for a grief reaction and supporting the family, it is a good idea to provide a brief summary of the efforts used to attempt to resuscitate the patient. Be clear and simple and avoid use of medical terms or jargon. If appropriate, let the family know the patient did not suffer. At this time the family should be allowed to ask questions. Answer honestly, and if it is unclear as to why the patient died, “I do not know” is an appropriate response. A means of follow-up should be provided, either referral back to the primary care physician or contact information for the ED physician in case the family has questions later.

One of the final steps is allowing the family to view and be with the deceased. This is an important step that greatly can

facilitate the grieving process. The room should be cleaned of blood and debris from the resuscitation. All but essential items should be removed from the body and it should be covered with a clean sheet, leaving only the hands and face exposed. A staff member should accompany the family to view the body after preparing them of what to expect (such as tubes, lines, cold, pale or blue color). They need to be aware of how the deceased will appear, especially if severely injured and deformed. The staff member should stay with the family while viewing the body and be supportive, but not intrusive. The family should not be pressured to view the body if not desired. A brief summary of the notification tasks can be found in Table 2.

Grief Response

There are a wide variety of responses to death in survivors. Commonly, families or loved ones will react with disbelief, guilt, or anger. Some will appear surprisingly calm. If the death was expected or anticipated, as with a terminally ill patient, relief may be expressed. The normal grieving process can take from six weeks to one year. Usually most people are improving in six to 10 weeks. It is the job of the emergency physician to facilitate a healthy initiation into this process. Viewing and being with the deceased can facilitate the grief process. If time allows, the physician should encourage the family to express their feelings and review memories of the deceased. Above all things, being a good listener, allowing the family to cry and grieve, and showing appropriate touch and/or sympathy is the best way for the physician to assist the family. Family members should not be sedated except in the most extreme cases.

The one aspect of the grieving process and initial reaction that emergency medicine physicians greatly can impact is survivor guilt. Many families express feelings of guilt over the loss of their loved one and often will scrutinize their action or lack thereof that they feel may have prevented the death of their loved one. This can and should be addressed immediately by the emergency physician and put to rest. For example, a wife may state that she shouldn't have let her husband drive to work in the snow, blaming herself for his motor vehicle accident and death. The emergency physician should reassure the wife that the motor vehicle accident and her husband's death were not her fault.

Tasks after Notification

After notifying the family of the patient's death, there are many other tasks that the emergency physician must do. Once the family has viewed the deceased, they should be notified of the coroner's involvement if necessary and asked if an autopsy is desired. Social services or chaplains can provide assistance with funeral home notification, completing paperwork, and other final details. The deceased's belongings and clothing should be returned to the family, if not part of a criminal investigation. This should be handled delicately, especially if clothes are soiled or bloody from trauma.

Organ donation also should be offered as an option. Many organs, such as the heart, lungs, kidneys, liver, and pancreas, require tissue perfusion to be recovered and generally are harvested only from ICU patients declared brain dead. However

ischemia-resistant organs and tissues such as corneas, bone, skin, tendons, fascia, cartilage, veins, and heart valves can be harvested within 24 hours of death if the body has been refrigerated within four hours of death. Any patient younger than 80 years of age can be a donor, except those with significant infectious or oncologic disease. If death is from a toxic exposure, consult a toxicologist for guidance. Most hospitals have organ procurement teams that can speak at length with the family and make all of the arrangements. At some hospitals, they can approach the family to determine if they are interested in donation.³

The patient's primary care physician (PCP) should be notified, both as a professional courtesy and as a means of follow-up for the family. The PCP can follow up with autopsy and coroner's reports as well as provide support and referrals to grieving relatives. Specialists and other care providers can be notified through the PCP's office as well.

The physician also should attend to his or her own emotional needs pertaining to the death of a patient and the needs of the ED staff. This is particularly true after pediatric death, which can be especially emotional for all staff involved. In cases where the staff clearly is affected, a critical incident stress debriefing should take place. The background and process are described below.

Critical incident stress is the psychological and emotional trauma that occurs in response to an unusually stressful or life-threatening event such as a disaster, act of violence, or death. Factors that affect development of critical incident stress are having advanced warning of an event, the nature and severity of the event, proximity to the event, degree of loss, baseline stress level and psychological makeup, prior experience, and support available. Critical incident stress management began during the World Wars as a method to help soldiers cope with the realities of war and return to combat sooner. This was adapted for use with emergency medical services (EMS) and medical personnel in the 1980s. A critical incident stress debriefing is the formal process of resolving emotional impact of an incident to prevent the development of post-traumatic stress disorder (PTSD). The focus of the process is to help normal people with normal reactions to abnormal situations. The steps of a formal debriefing are shown in Table 3.²⁷

Though many situations in the ED will not require a formal critical incident stress debriefing, an informal meeting with staff may be useful. The emergency physician can briefly review what has happened with staff members involved in the event, and all parties can offer suggestions and feedback on how the event was handled. Additionally, this can serve as an opportunity for staff members to discuss their emotional responses and offer support to each other. This informal meeting may provide a transition for returning to the emergency department routine.

Special Circumstances

If the patient's nearest relative is in the military and no one else can be reached, the International Red Cross has a network for notifying next of kin in the military. It is necessary to try and obtain full name, date of birth, branch of service, and location if known.⁷

Pediatric death in the ED is perhaps the most emotional and difficult situation emergency physicians encounter. Many physi-

cians find it the notification itself very stressful. In a survey of 122 emergency physicians, 66% reported notifying the parents of a dead child to be the most stressful task they have to perform, 64% admit to feeling guilty or inadequate when dealing with a pediatric death, and 47% felt impaired for the remainder of their shift after experiencing a pediatric death. Only 8% were aware that there are published guidelines for managing pediatric death in the ED.²⁸

The University of Illinois at Chicago Emergency Medicine Residency Program has developed a teaching module dedicated especially to pediatric death notification. The program emphasizes attempts to prevent and alleviate survivor guilt, in addition to being very sensitive in choosing language to use with parents. The module also includes discussion with parents who are members of the Illinois Chapter of the Sudden Infant Death Alliance. They discuss with residents what was done well and poorly when they were told of their own child's death. The program focuses on dealing with the emotional aspects of pediatric death notification.²⁹

In addition to the difficulty physicians face when dealing with a pediatric death, there are the families to consider. A poor notification can have a profoundly negative impact on the family, and great care must be taken when notifying a family of their child's death. A survey of families who suffered the death of a child, identified through the Illinois Chapter of the Sudden Infant Death Alliance, was conducted to ascertain what aspects of their experience could be used to improve death notification in the ED. Most responders preferred that the physician provide the actual notification. Of the parents who were able to view the body, most found it helpful in accepting that their child had died and also wanted a memento from the child to keep such as a lock of hair, handprint/footprint, mold of hand/foot, or picture. The majority also reported that they would not find it offensive to be asked about autopsy and organ donation.³⁰

A joint statement from the American Academy of Pediatrics and the American College of Emergency Physicians was released in 2002 is included in Table 4.³¹

Another topic for consideration is family presence at resuscitation efforts. One study at Foote Hospital Emergency Department in Jackson, MI, allowed families to view resuscitation attempts during cardiac arrest. These families were sent surveys. Of the 47 that responded, 44 (94%) said that they would participate again. Thirty-six (76%) felt that watching the resuscitation facilitated their adjustment to the death, and 30 (64%) felt their presence benefited the deceased.³² A study out of Parkland Hospital in Dallas surveyed families of recently deceased patients to ascertain if they would have wanted to have the option to be present in the resuscitation. Eighty percent of respondents stated they would have liked to be present, and 96% believed that families have a right to be present.³³

A review article/editorial in the *New England Journal of Medicine* addressed the question of families at resuscitations as well. It cited the Foote Hospital Program and Parkland Hospital in Dallas and advocated that the option be given to families. The article cites the 2000 guideline of The American Heart Association that states: "Parents of family members seldom ask if they can be present unless they have been encouraged to do so. Healthcare providers should offer the opportunity to family members whenever possible." The author challenges the common perceptions that family

members will be disruptive, that the healthcare providers will face additional stress, and that there would be medicolegal conflicts, citing evidence to the contrary.³⁴ Thus it is an important consideration each ED should make and each should have a policy in place so that emergency physicians will have guidance in the matter.

Summary

Death notification can be a stressful and difficult task for emergency physicians. Training medical students and residents may alleviate anxiety and improve the skills of physicians to complete this duty. Following an organized approach will help ensure that all essential tasks are done in a manner that is professional and compassionate. Understanding the grieving process and assisting families in the initiation of this process is important to survivor well-being. Appropriate aftercare, including many administrative tasks, should be attended to. Special considerations, especially for pediatric deaths, must be taken into account. The key to an effective and compassionate death notification is a prepared and caring emergency physician.

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Physician CME Questions

1. Which of the following is an appropriate statement of death notification?
 - A. "Your father didn't make it."
 - B. "As a result of his injuries, John died."
 - C. "The patient coded and we couldn't get him back."
 - D. "I'm sorry to inform you that Bill passed away."
2. Which of the following statements is *false* regarding pediatric death notification in the emergency department?

- A. It is appropriate to allow parents to hold the child.
 - B. A memento such as a lock of hair should be offered to parents.
 - C. Emergency department staff should be offered critical incident stress debriefing if needed.
 - D. Parents should be questioned thoroughly about possible abuse and/or neglect because their child has died.
3. Which of the following statements about death notification education is true?
 - A. Physicians learn how to deliver a death notification best by direct observation and trial and error.
 - B. Simulated patient scenarios are not helpful in providing training in death notification
 - C. Residents who have received formal instruction on proper death notification perform better on simulated patient death notification scenarios.
 - D. There is a lack of literature to describe how to provide an appropriate death notification
4. When responding to survivor reaction after death notification, which of the following is an appropriate response?
 - A. When a survivor gets angry and begins to question if all efforts were made, the emergency physician should call risk management to come see the family and defend the physician's actions.
 - B. Family members should be advised that not performing CPR lead to the death of the patient.
 - C. Listen to and tolerate the survivor's initial response, even if hysterical or angry. Do not argue with family or become defensive in response to their reaction.
 - D. Inform parents that they are at fault for their son's death because they allowed him to drive while intoxicated.
5. Why is it important to notify the primary care physician after a patient's death?
 - A. It is a professional courtesy and essential to ensure follow-up for survivors.
 - B. The primary care physician needs to come to the emergency department to notify the family.
 - C. The primary care physician is responsible for notifying the coroner/medical examiner and completing appropriate paperwork.
 - D. They may be liable for the patient's death and need notice to retain legal counsel.

CME Answer Key: 1. B; 2. D; 3. C; 4. C; 5. A

CME Objectives

- At the conclusion of this activity, participants should be able to:
- Understand the unique role the emergency physician plays in death notification;
 - Utilize a framework for a standardized death notification;
 - List the important components of a proper death notification delivery; and
 - Describe the grief response in family and emergency staff.