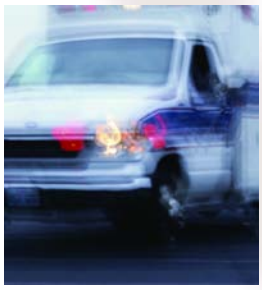
Terrorism and Disaster

WHAT CLINICIANS NEED TO KNOW




Smallpox Attack: Assessment, Communication, & Coping

RUSH UNIVERSITY MEDICAL CENTER

Terrorism and Disaster

WHAT CLINICIANS NEED TO KNOW

SERIES EDITORS

Rush University Medical Center Chicago, Illinois

Stephanie R. Black, MD*
Assistant Professor of Medicine
Section of Infectious Diseases
Department of Internal Medicine

Daniel Levin, MD*
Assistant Professor
General Psychiatry Residency Director
Department of Psychiatry

Gillian S. Gibbs, MPH*
Project Coordinator
Center of Excellence for Bioterrorism Preparedness

Linnea S. Hauge, PhD*
Assistant Professor
Educational Specialist
Department of General Surgery

AUTHORS

Rush University Medical Center Chicago, Illinois

Stephanie R. Black, MD*
Assistant Professor of Medicine
Section of Infectious Diseases
Department of Internal Medicine

Daniel Levin, MD*
Assistant Professor
General Psychiatry Residency Director
Department of Psychiatry

Uniformed Services University Health Sciences Bethesda, Maryland

David M. Benedek, MD, LTC, MC, USA*
Associate Professor of Psychiatry

Steven J. Durning, MD, Maj, USAF, MC*
Associate Professor of Medicine

Thomas A. Grieger, MD, CAPT, MC, USN*
Associate Professor of Psychiatry
Associate Professor of Military & Emergency Medicine
Assistant Chair of Psychiatry for Graduate & Continuing Education

Molly J. Hall, MD, Col, USAF, MC, FS*
Assistant Chair & Associate Professor
Department of Psychiatry

Derrick Hamaoka, MD, Capt, USAF, MC, FS*
Director, Third Year Clerkship
Instructor of Psychiatry

Paul A. Hemmer, MD, MPH, Lt Col, USAF, MC*
Associate Professor of Medicine

Benjamin W. Jordan, MD, CDR, MC, USNR, FS*
Assistant Professor of Psychiatry

James M. Madsen, MD, MPH, COL, MC-FS, USA*
Associate Professor of Preventive Medicine and Biometrics
Scientific Advisor, Chemical Casualty Care Division, US Army Medical Research Institute of Clinical Defense (USAMRICD), APG-EA

Deborah Omori, MD, MPH, FACP, COL, MC, USA*
Associate Professor of Medicine

Michael J. Roy, MD, MPH, FACP, LTC, MC*
Associate Professor of Medicine
Director, Division of Internal Medicine

Jamie Waselenko, MD, FACP**
Assistant Professor of Medicine
Assistant Chief, Hematology/Oncology
Walter Reed Army Medical Center
Washington, DC

Guest Faculty

Ronald E. Goans, PhD, MD, MPH*
Clinical Associate Professor
Tulane University School of Public Health & Tropical Medicine
New Orleans, LA

Sunita Hanjura, MD*
Rockville Internal Medicine Group
Rockville, MD

Niranjan Kanesa-Thasan, MD, MTMH*
Director, Medical Affairs & Pharmacovigilance
Acambis
Cambridge, MA

Jennifer C. Thompson, MD, MPH, FACP*
Chief, Department of Clinical Investigation
William Beaumont Army Medical Center
El Paso, TX

Faculty Disclosure Policy

It is the policy of the Rush University Medical Center Office of Continuing Medical Education to ensure that its CME activities are independent, free of commercial bias and beyond the control of persons or organizations with an economic interest in influencing the content of CME. Everyone who is in a position to control the content of an educational activity must disclose all relevant financial relationships with any commercial interest (including but not limited to pharmaceutical companies, biomedical device manufacturers, or other corporations whose products or services are related to the subject matter of the presentation topic) within the preceding 12 months If there are relationships that create a conflict of interest, these must be resolved by the CME Course Director in consultation with the Office of Continuing Medical Education prior to the participation of the faculty member in the development or presentation of course content.

* Faculty member has nothing to disclose.

**Faculty disclosure: CBCE Speaker's Core for SuperGen.

Smallpox Attack: Assessment, Communication, & Coping

CASE AUTHORS: David M. Benedek, MD, LTC, MC, USA

DISCLAIMER

This project was funded by the Metropolitan Chicago Healthcare Council (MCHC) through a grant from the Health Resources and Services Administration (HRSA).

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as representing the opinion of Rush University Medical Center, the Department of the Army, Department of the Navy, Department of the Air Force, Department of Defense, MCHC or HRSA.

FDA Approved Drug and Devices Assurance Statement

In accordance with requirements of the FDA, the audience is advised that information presented in this continuing medical education activity may contain references to unlabeled or unapproved uses of drugs or devices. Please refer to the FDA approved package insert for each drug/device for full prescribing/utilization information.

INSTRUCTIONS

The questions that appear throughout this case are intended as a self-assessment tool. For each question, select or provide the answer that you think is most appropriate and compare your answers to the key at the back of this booklet. The correct answer and a discussion of the answer choices are included in the answer key.

In addition, a sign is provided in the back of this booklet for posting in your office or clinic. Complete the sign by adding your local health department's phone number.

Smallpox Attack: Assessment, Communication, & Coping

CASE AUTHORS: David M. Benedek, MD, LTC, MC, USA

INTENDED AUDIENCE

Internal medicine, family medicine, and emergency medicine clinicians, and mental health care professionals, including psychiatrists, psychologists, and social workers who will provide evaluation and care in the aftermath of a terrorist attack or other public health disaster

EDUCATIONAL OBJECTIVES

Upon completion of this case, participants will be able to:

- Discuss the rationale and initial management of patients who believe they have been exposed to smallpox, including patient interview, risk identification, and triage.
- Outline strategies for communicating with the media about smallpox.
- Describe psychiatric illness that may occur in families confronted with death and disfigurement.
- Identify coping strategies for healthcare workers with excessive exposure to the dying and the deceased.

CASE HISTORY

Nine days ago, the diagnosis of smallpox was confirmed in a 37-year-old woman after she returned to your city from a holiday overseas. She was transferred from the local primary care clinic to the local medical center, a Type C facility (for a brief review, see Sidebar on isolation facilities), where you work as a physician. She is receiving supportive care and remains in critical, but stable condition. Her condition is only one of your worries. From the moment the diagnosis was suspected at the primary care clinic, the lobby was "locked down" and 8 additional patients who were waiting to be seen, including 2 young children and their mother, were vaccinated. The local health department and the Centers for Disease Control and Prevention (CDC) promptly located 2 of the 3 patients who had already left the clinic, and they too were vaccinated. Other passengers on the plane with the woman when she returned from overseas have been identified and are being observed closely for emergence of symptoms (see Table 1). A 29-year-old man, 4-year-old girl, and her mother, have been diagnosed with smallpox and are isolated at your facility. These 3 patients had no known contact with your patient, thus, the initial hope that the she represented the sole source of illness in your city has vanished—and you face an epidemic.

Table 1. Smallpox Risk Categorization and Diagnostic Criteria*

Diagnostic Criteria

Major Smallpox Criteria	**Minor Smallpox Criteria**
1. Febrile prodrome: occurring 1-4 days before rash onset; fever > 101˚F and at least one of the following: prostration, headache, backache, chills, vomiting, or severe abdominal pain 2. Classic smallpox lesions: deep-seated, firm/hard, round well-circumscribed vesicles or pustules; as they evolve, lesions may become umbilicated or confluent 3. Lesions in the same stage of development: on any one part of the body (eg, the face or arm) all the lesions are in the same stage of development (ie, all are vesicles or all are pustules)	1. Centrifugal distribution: greatest concentration of lesions on face and distal extremities 2. First lesions on the oral mucosa/palate, face, or forearms 3. Patient appears toxic or moribund 4. Slow evolution: lesions evolve from macules to papules to pustules over days (each stage lasts 1-2 days) 5. Lesions on the palms and soles

Medical Risk Categories

Low Risk	**Moderate Risk**	**High Risk**
1. No febrile prodrome OR 1. Febrile prodrome and 2. < 4 MINOR smallpox criteria	1. Febrile prodrome and 2. One other MAJOR smallpox criterion OR 1. Febrile prodrome and 2. > 4 MINOR smallpox criteria	1. Febrile prodrome and 2. Classic smallpox lesion and 3. Lesions in same stage of development

*Adapted from Centers for Disease Control and Prevention.[1]

As a previously vaccinated healthcare worker, you realize that you are extremely unlikely to become ill. You are impressed by the promptness of the CDC response and containment effort, but fear and uncertainty pervades the city. The CDC moves to identify the 2 new patients' recent personal contacts and to generate a "ring of immunity" through ring vaccination, isolation, and observation.[2] Your hospital noted an initial surge of patients as early word of the outbreak reached the media. The emergency room (ER) has been flooded with people concerned about infection, and the very few with prodromal symptoms have also been vaccinated. The hospital has admitted 7 people to insure close monitoring until the diagnosis can be ruled out. You have not left the hospital in 3 days as the ER continues to fill with people convinced they have contracted the disease, media people asking questions about the patients in isolation, and others seeking vaccination or medical advice. As one of the clinicians responsible for your hospital's disaster preparedness plan, you are asked to participate in a meeting of hospital leadership, CDC and health department personnel, and the deputy mayor, who continue to focus efforts on containing the disease and the level of public anxiety and panic.

ISOLATION FACILITIES[1]

Type C facility (C=Contagious): an isolation facility for confirmed, probable, and suspected smallpox cases that meets certain CDC requirements in order to minimize the exposure of susceptible individuals to contagious individuals.

Type X facility (X= Unknown): a facility for suspected smallpox cases (febrile). The individuals in this facility are observed for the development of symptoms of smallpox (rash).

Type R facility (R= Residential): a location for asymptomatic smallpox cases. A Type R facility can be the individual's home. Individuals in Type R facilities are monitored for fever.

ISOLATION AND QUARANTINE[1]

To contain the spread of a contagious illness, public health authorities rely on many strategies, including isolation and quarantine. Both of these strategies can be voluntary or mandated by public health authorities.

- Isolation is the separation and restriction of movement of people who have specific infectious illness from those who are healthy. Isolation allows for the focused delivery of specialized health care for individuals who are ill, while protecting those individuals who are not ill.
- Quarantine is the separation and restriction of movement of individuals who have been exposed to an infectious agent, and are potentially contagious, but who are not yet ill. Quarantine allows for the focused observation of individuals who may become ill, while protecting those individuals who are not ill.

COMMENT: Most state and local contingency plans recognize the need for a triage system that distinguishes between the acutely ill, the possibly ill, and those suffering symptoms/anxiety who incorrectly attribute their symptoms to infection. The term "worried well" is often used to describe this latter group, but this description unjustly implies that the concerns of this group should be taken less seriously so its use is discouraged. A term such as "low infection risk" or "low risk" may be more appropriate. The acutely ill require hospitalization for supportive care, the possibly ill need vaccination, isolation, and close observation. The "low risk" population will place additional surge burden on the health care system. This low risk population can be divided into 3 groups:

1. Those who experience symptoms of the disease in question (or generalized symptoms), but have not been infected. Their symptoms are manifestations of fear, heightened alertness, or feelings of helplessness.
2. Those who are anxious about becoming infected, but do not experience physical symptoms. Their anxiety may lead them to seek care as a preventive measure.
3. Those who experience emotional symptoms such as depression, anxiety, or despair in response to a traumatic event involving themselves or their loved ones.

In previous events such as the sarin gas attack in the subway in Tokyo, Japan, people within these 3 groups presented for emergency care in numbers approximately 4 times those actually exposed.[3] In other words, a majority of individuals who present for emergency care may not have been exposed. These groups may overlap, but primary concerns and presenting symptoms may assist in establishing the most effective triage process.

QUESTION 1

Your hospital CEO introduces you to the group as the disaster team leader and notes, "Most people who have been coming into the ER are actually increasing their risk of exposure. We need to stop the influx of low to no risk individuals. How should we proceed?" Which of the following is your response?

a. Each person must be individually screened at this location before we turn them away. Failure to diagnose another case will only worsen the problem.

b. We must initiate our plan to divert this population to other facilities where additional personnel can screen for symptoms, and monitor those who are uninfected, but concerned about becoming ill.

c. Let's continue to announce over our public address system that people without fever or rash will be asked to leave the ER and return home to permit care for those in urgent need.

Reminder: You can find the Answer Key & Discussion on page 10.

COMMENT: A message directing people away from the ER may be appropriate, but it must be accompanied by instructions to people who have symptoms not meeting threshold criteria for emergency treatment (ie, hospitalization and isolation). For example, these people should be advised to follow up with their primary care physician as soon as possible. Hotlines staffed by triage nurses could provide reassurance, if this is indicated, or those with low and moderate risk could be directed to appropriate facilities. Guidelines for this situation should be part of your disaster preparedness plan.

Identification of "holding environments,"[3] where those with acute psychological responses to crisis or disaster can be observed while removed from the surrounding urgent care facilities, allows for emergency and primary healthcare professionals to devote their attention to the critically ill. Holding facilities will require assistance of community mental health workers, pastoral care providers, and other trained volunteers to provide education and support while monitoring for other illnesses requiring urgent medical attention either smallpox-related or otherwise. Nearby facilities, such as churches or schools, may be utilized for this purpose.

As the leadership discusses methods to divert patients thought not to be at risk for smallpox and identifies alternate care facilities, a nurse interrupts the meeting to tearfully inform those in attendance that the 4-year-old girl isolated within your facility has died. The child's mother is also in isolation at your facility, and the child's father and she have been informed. The CEO notes that this event is taking an emotional toll on families and healthcare providers. He poses a question to the group about possible psychological effects on families, healthcare workers, and the public which may arise as a result of this outbreak. All eyes turn to you. Your reply to the group is summarized in the following comment.

COMMENT: Acute stress disorder (ASD) may be diagnosed when an individual is confronted with a traumatic event such as the death or life-threatening illness of a loved one and develops re-experiencing symptoms, such as nightmares or flashbacks, dissociative phenomenon, such as derealization or depersonalization, and avoidance symptoms which persist beyond 48 hours after the event and last up to a month.[4] If symptoms persist beyond 30 days, posttraumatic stress disorder (PTSD) is diagnosed.[4] However ASD and PTSD are by no means the only psychiatric illnesses associated with traumatic exposure. The death of a loved one is normally associated with bereavement, but sudden or violent deaths can precipitate a more serious constellation of symptoms that have been classified by some as "traumatic grief."[5]

Clinically significant mood or anxiety symptoms may become manifest in the aftermath, and major depressive disorder, panic disorder, and generalized anxiety disorder are among the primary psychiatric disorders that may first appear, or in previously diagnosed individuals re-occur, in the context of exposure to critically ill or dying loved ones.[5] Many healthcare workers may be naïve to the grossly disfiguring effects of smallpox, and excessive exposure to disfigurement and death may precipitate symptoms in people without familial relationships to the gravely ill. Table 2 lists some of the differential diagnoses applicable to populations exposed to traumatic injury, disfigurement, and death.

Table 2. Psychiatric Diagnoses Often Applicable to Injured Trauma Survivors Treated in the Acute Care Medical Setting*

Diagnosis†	Symptomatic Criteria	Functional Criteria	Time Course
Posttraumatic stress disorder	A. Exposure to a traumatic event in which the person experienced or witnessed a life-threatening event that was associated with intense emotions (eg, physical injury) B. The event is persistently re-experienced C. Persistent avoidance of reminders of the event D. Persistent arousal symptoms	Symptoms are associated with clinically significant impairments in social, occupational, or even physical function	Diagnosis must be made at least 1 month after the event
Acute stress disorder	A. Exposure to a traumatic event in which the person experienced or witnessed a life threatening event that was associated with intense emotions (eg, physical injury) B. Either while experiencing the event or after, the person experiences 3 or more dissociative symptoms, eg, derealization, depersonalization, dissociative amnesia C. The event is re-experienced D. Avoidance of reminders of the event E. Symptoms of arousal	Symptoms are associated with clinically significant impairments in social, occupational, or even physical function	Diagnosis can be made between 2 and 30 days after the event
Major depressive episode	Five or more of the following‡: depressed mood, diminished interest in pleasurable activities, weight loss or gain, insomnia or hypersomnia, agitation or retardation, fatigue or energy loss, feelings of worthlessness, poor concentration, and suicidal ideation	Symptoms are associated with clinically significant impairment in social, occupational, or even physical function	Symptoms must be present for 2 weeks
Traumatic grief§	Distressing thoughts and experiences related to reunion, longing, and searching for the deceased loved one	Disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning	Duration of disturbance is at least two months
Adjustment disorder	A. Development of emotional or behavioral symptoms in response to an identifiable stressor — symptoms can include depression, anxiety, conduct disturbance, or other emotional disturbance B. Symptoms or behaviors are clinically significant as evidenced by marked distress	Emotional or behavioral symptoms are associated with marked impairment in social, occupational, or even physical function	Onset occurs within 3 months after the traumatic injury

* Adapted from DSM-IV[4] and Zatzick.[6]

†Posttraumatic symptoms may be present that are insufficient to meet criteria for the above diagnoses. In such cases DSM-IV V code diagnoses would be indicated, as would continued monitoring for the development of further psychiatric disorder(s). Other mood and anxiety disorders may occur or be exacerbated by traumatic exposures.

‡ At least one of the five symptoms must be either depressed mood or diminished interest in pleasurable activities.

§ Traumatic grief is currently not included in DSM-IV.

QUESTION 2

The child's father sees you 3 weeks after the initial presentation of his wife and child, complaining of emotional distress and psychological symptoms. Which of the following psychiatric disorders are possible syndromes among family members confronting the sudden and unexpected loss of a loved one from smallpox?

a. PTSD or ASD

b. Major depression or PTSD

c. Major depression or ASD

As you think about psychiatric symptoms in the young girl's parents, you grow concerned about the well-being of the nurses and physicians who, despite their experience with tragedy, have never been exposed to the horrific disfigurement associated with disseminated smallpox and who may soon be confronting death on a scale not before imaginable.

COMMENT: Considerable research has demonstrated that exposure to certain types of death has been associated with higher levels of PTSD and stress in healthcare workers, rescue workers, emergency care providers, and mortuary affairs workers.[7] The degree of distress experienced by providers is related to several factors including: the extent to which providers identify with victims, the degree of helplessness providers experience in delivering care, and the gruesomeness of the remains.

When smallpox becomes fatal in children, the ubiquitous lesions are generally grossly disfiguring and extremely painful. Those healthcare workers who are parents themselves may be at greater risk for identifying with the victims — not only dying children, but their grieving parents. Identification with victims is a risk factor for the development of psychiatric illness and distress among healthcare workers and body handlers.

Although palliative treatment may provide pain relief, a sense of hopelessness may overcome those charged with the task of delivering pain medications to a dying patient when that is all that can be done. In a catastrophe such as a smallpox epidemic, nurses and physicians who are unaccustomed to being relegated to the role of providing only palliative support to the dying child may be forced to do so. Bearing witness to pain, disfigurement, and death in children while facing uncertainty about one's own safety or the safety of family members, places healthcare workers at considerable risk for psychological distress, adjustment disorder, acute stress disorder, and ultimately PTSD. When parents are participants in these processes at the bedside or in close proximity as their children die unnatural and disfiguring deaths, parental bereavement may be prolonged or complicated by these mental disorders.[8]

Already, the few previously vaccinated nursing staff and physicians have been working double-shifts and sleeping in the hospital in an effort to keep up with the workload. Other providers will soon be vaccinated but they too will be called upon to work long hours and will be forced to confront tragedy on a daily basis. You realize that despite their training and professionalism, your colleagues will also reach breaking points.

COMMENT: Although recognition, triage, and treatment will be the most important aspects of emergency management, measures aimed at mitigating rage, helplessness, and hopelessness associated with the effects of an attack are also important. These efforts must also be directed toward hospital staff. While healthcare workers are, by virtue of occupational exposure, familiar with emotional aspects of death and dying, few are prepared for the volume of expectant patients and death that will likely

accompany a biological weapon attack with smallpox. Healthcare workers in such circumstances may experience psychiatric symptoms, and illness across the same spectrum of disorders as non-healthcare worker victims and their family members.[9] Much of the emotional response, even if it includes significant distress, may not be indicative of psychiatric disorder. However, extremes of distress will have a negative impact on the delivery of care.

Providing opportunities for staff to come to terms with their emotional responses to disfigured and dying patients can be accomplished at the worksite. For example, employees may voluntarily participate in a facilitated discussion of their thoughts and emotions stemming from triage and treatment activity. This participation in discussion will also allow rotating workers to prepare the next shift for difficult experiences.

Rotation of workers assigned to working with the dying or dead can limit total exposure to the most stressful assignments in individual workers and reduce the likelihood of acute distress. Since different aspects of working with the dead or dying may be difficult for any given individual (eg, some may have the most difficulty with collection of personal belongings after death, others may struggle with caring for exposed children) it is useful to rotate assignments. New responsibilities reduce the likelihood of task monotony precipitating distressful introspection or rumination.

Hospital leadership must plan for, and encourage appropriate cycles of duty, off-time, and sleep, even if containment measures do not permit personnel to leave the treatment facility when they are not working. It is also important for hospital leaders and supervisors to visit workers in areas of body handling and engage these workers in conversation. Since those working with the dead often feel that their efforts are under-appreciated (priority is necessarily given to life saving efforts), it is important for leadership to acknowledge the contributions of those handling disposition of bodies. Leadership visits demonstrate concern for the well-being of workers and allows for supervisors to monitor the emotional status of those working in morgue environments.

Providing support to staff members' families is also important. It is unrealistic to expect medical staff to respond with empathy to their patients if their own emotional needs are not being met, or if they believe their family's needs are neglected while they remain in the hospital.

QUESTION 3

Which of the following strategies would be most effective in reducing distress in healthcare workers during public health disasters such as a smallpox outbreak?

a. Facilitate discussions between professional staff members during shift changes and operational meetings that focus on events of the out-going shift and response to such events.

b. Schedule those caring for smallpox patients to work longer shifts in order to help them become conditioned to these patients and reduce the number of staff members exposed to this stressful task.

c. Mandate critical incident stress debriefings for workers as they complete shifts during the course of the disaster.

You realize that even though vigilance and prompt action may, to some degree, have contained this outbreak, the endpoint is not yet clear. The small number of cases that have come to clinical attention point to the possibility of a relatively limited outbreak. However, given the incubation period for the disease and the uncertainty surrounding the true source of infection, it is likely there are other cases that have yet to surface. You wince, take a deep breath, and turn your attention back to the meeting

where the mayor and hospital leadership continue to update a plan for engaging the public in this ongoing crisis. Delivery of consistent, updated information through trusted sources will minimize the extent to which misinformation shapes public response.[13] You consider the options for delivering information about this epidemic to your city.

QUESTION 4

Which of the following statements regarding risk communication is correct?*

a. Information should be withheld until consensus is reached between the CDC, state and local health officials, and political leaders, since conflicting governmental reports regarding the nature of an attack, current danger levels, or self-help recommendations can lead to anxiety and decrease public trust.

b. All people involved in the decision making process (community and public health leaders, physicians at the hospital, and CDC) should address media questions as they arise in order to reduce the sense that leadership is withholding information.

c. Information, even if incomplete, should be provided to the press on a consistent and periodic basis by a trained spokesperson designated in the hospital's emergency response plan.

d. During times of crisis, journalists should not be trusted to assist in the delivery of critical healthcare information. The media's emphasis on sensationalism renders them ineffective in reducing fear or anxiety in response to public health crises.

**For additional information on recommended methods of communicating with the media and public during a disaster, refer to another case in this series:* Anthrax *by Michael J. Roy, Steven J. Durning, and Molly Hall.*

The full extent of this disaster is not yet clear. Further potential exposures will be identified, and additional persons will require vaccination, close observation, or quarantine. Even with aggressive surveillance and preventive efforts, others within your community (and perhaps elsewhere) may suffer painful and disfiguring deaths, shaking the lives of family and friends and taking a tremendous toll on healthcare workers and leaders charged with response to this crisis. What remains for the future is frightening and uncertain, but you take solace in the fact that you can continue to make a difference.

Your hospital and your local health department, with the assistance of the Federal Emergency Management Agency (FEMA) and the CDC among others, have implemented a strategy for case identification, triage, effective risk communication, and surveillance and mitigation of the physical and psychological sequelae of this epidemic. The full repercussions of the outbreak will include incalculable economic, occupational, psychological, and public health implications for your city and for the nation. However, the steps you have taken represent important efforts to mitigate these phenomena.

ANSWER KEY & DISCUSSION

QUESTION 1

Your hospital CEO introduces you to the group as the disaster team leader and notes, "Most people who have been coming into the ER are actually increasing their risk of exposure. We need to stop the influx of low to no risk individuals. How should we proceed?" Which of the following is your response?

a. Each person must be individually screened at this location before we turn them away. Failure to diagnose another case will only worsen the problem.

b. We must initiate our plan to divert this population to other facilities where additional personnel can screen for symptoms, and monitor those who are uninfected, but concerned about becoming ill.

c. Let's continue to announce over our public address system that people without fever or rash will be asked to leave the ER and return home to permit care for those in urgent need.

ANSWER: The correct answer is b. It is likely that an ER will quickly become overburdened in this scenario and not be able to triage large numbers of non-infected people, provide initial assessment, and stabilize those who are symptomatic from infection. People without characteristic rash, but with fever and other non-specific symptoms, could be directed to alternate facilities where screening evaluation (see Table 1) could further identify those needing urgent care. While many people may comply with requests to leave the ER and return home, this approach lacks strategies for addressing people with acute psychological distress and may contribute to fear and anxiety. Any efforts to reduce the burden of the low risk patients must begin at the point of an individual's encounter with the health care system, even if they enter the system at an inappropriate point.

QUESTION 2

The child's father sees you 3 weeks after the initial presentation of his wife and child, complaining of emotional distress and psychological symptoms. Which of the following psychiatric disorders are possible syndromes among family members confronting the sudden and unexpected loss of a loved one from smallpox?

a. PTSD or ASD

b. Major depression or PTSD

c. Major depression or ASD

ANSWER: The correct answer is c. Although PTSD is associated with symptoms of hyper-arousal, avoidance, and re-experiencing precipitated by exposure to an event to which one reacts with fear or horror, this condition is not diagnosed unless and until symptoms persist beyond 30 days. Transient fear, anxiety, or depression not sufficiently severe to warrant the diagnosis of major depression, generalized anxiety disorder, or other anxiety disorders, temporally linked to a stressful event may be classified as adjustment disorders. Patients with ASD suffer symptoms commonly associated with PTSD, such as hyper-arousal, avoidance, and re-experiencing precipitated by exposure to an event to which one reacts with fear or horror, as well as a component of dissociation (such as depersonalization or derealization). This diagnosis can be made between 2 and 30 days after the event.

Disruption or loss of social support, which may accompany acute or potentially fatal illness in loved ones, are stressors that may precipitate a first or recurrent episode of major depressive disorder. The

presence of certain symptoms that are not characteristic of a "normal" grief reaction may be helpful in differentiating bereavement from a major depressive episode.[4] These include 1) guilt about things other than actions taken or not taken by the survivor at the time of the death; 2) thoughts of death other than the survivor feeling that he or she would be better off dead or should have died with the deceased person; 3) morbid preoccupation with worthlessness; 4) marked psychomotor retardation; 5) prolonged and marked functional impairment; and 6) hallucinatory experiences other than thinking that he or she hears the voice of, or transiently sees the image of, the deceased person.[4]

QUESTION 3

Which of the following strategies would be most effective in reducing distress in healthcare workers during public health disasters such as a smallpox outbreak?

a. Facilitate discussions between professional staff members during shift changes, and operational meetings that focus on events of the out-going shift and response to such events.

b. Schedule those caring for smallpox patients to work longer shifts in order to help them become conditioned to these patients and reduce the number of staff members exposed to this stressful task.

c. Mandate critical incident stress debriefings for workers as they complete shifts during the course of the disaster.

ANSWER: The correct answer is a. Communication between care providers regarding emotional aspects of care allows for dissemination of "lessons learned" during evolving stages of crisis management and allows the out-going shift to help prepare the incoming shift psychologically for what lies ahead. In addition, before a disaster occurs, training and rehearsal of a coordinated healthcare facility emergency response plan will reduce chaos and disorder during an actual emergency.

Supervisors should rotate staff to allow them to rest and emotionally process the events. Because badly disfigured patients, particularly children, are often the most stressful population with whom to work, it may seem that limiting this work to a select group of personnel would be prudent. However, in mass casualty situations, setting up rotations where larger numbers of personnel share the experience of working with the most distressing is reasonable, since prolonged exposure to such patients — even for highly trained personnel — is a significant risk for acute distress or workplace dysfunction. Rotating personnel will decrease duration of exposure for individual workers and contribute to a sense of unified team efforts and sacrifice.

Although open and randomized trials of critical incident stress debriefing have demonstrated mixed results on various measures of psychological functioning (ranging from no benefit, to decreased anxiety, to decreased alcohol use), there is substantial evidence that single-session psychological debriefings in the immediate aftermath of traumatic exposure do not reduce psychological distress or prevent the development of PTSD.[10-12]

QUESTION 4

Which of the following statements regarding risk communication is correct?

a. Information should be withheld until consensus is reached between the CDC, state and local health officials, and political leaders, since conflicting governmental reports regarding the nature of an attack, current danger levels, or self-help recommendations can lead to anxiety and decrease public trust.

b. All people involved in the decision making process (community and public health leaders, physicians at the hospital, and CDC) should address media questions as they arise in order to reduce the sense that leadership is withholding information.

c. Information, even if incomplete, should be provided to the press on a consistent and periodic basis by a trained spokesperson designated in the hospital's emergency response plan.

d. During times of crisis, journalists should not be trusted to assist in the delivery of critical healthcare information. The media's emphasis on sensationalism renders them ineffective in reducing fear or anxiety in response to public health crises.

ANSWER: The correct answer is c. The delivery of clear, consistent, and concise updates helps the community develop a sense that the crisis is being addressed in an organized fashion. Redundancy in the delivery of important information increases the likelihood that important messages are heard by community members whose heightened level of distress might be interfering with their capacity to receive and synthesize new information. Without periodic updates, a sense that information is being withheld may exacerbate community fear and mistrust. Efforts should be made to provide information, verify suspicions, and investigate appropriate responses, rather than waiting for complete answers to be identified.

Public confidence is boosted and anxiety is reduced when messages are clear and consistent; therefore, it is better for people trained in responding to media questions to act as spokespersons for involved agencies. Care providers untrained in working with journalists may inadvertently provide information contradictory to consensus.

If select members of the media are identified and actively engaged in the emergency planning process, (eg, invited to meetings and emergency response exercises and included in decisions regarding the nature and frequency of media briefings) they may see themselves as allies in the information effort. By recognizing the important role they play in delivering messages to a community, in the event of a crisis, they may identify themselves as part of the solution.[14]

REFERENCES

1. Centers for Disease Control and Prevention. *Smallpox Response Plan and Guidelines Version 3.0, Annex 5: Generalized Vesicular or Pustular Rash Illness Protocol*. Available at: http://www.bt.cdc.gov/agent/smallpox/response-plan/index.asp#annex. Accessed January 13, 2005.

2. Parada JP. Bioterrorism preparedness: smallpox vaccination in the United States. *Federal Practitioner*. May 2004:93-102.

3. Benedek DM, Holloway HC, Becker SM. Emergency mental health management in bioterrorism events. *Emerg Med Clin N Am*. 2002;20:393-407.

4. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed, Text Revision. Washington, DC: American Psychiatric Association; 2000;463-464.

5. Prigerson HG, Shear MK, Jacobs SC, et al. Consensus criteria for traumatic grief: a preliminary empirical test. *Br J Psychiatry*. 1999;174:67-73.

6. Zatzick D. Posttraumatic stress, functional impairment, and service utilization after injury: a public health approach. *Semin Clin Neuropsychiatry*. 2003;8:149-157.

7. Brandt GT, Fullerton CF, Saltzgaber L, Ursano RJ, Holloway H. Disasters: psychologic responses in health care providers and rescue workers. *Nord J Psychiatry*,1995;49:89-94.

8. Rynearson EK. Psychological effects of unnatural dying on bereavement. *Psychiatric Annals*. 1986;16(5):272-275.

9. Ursano RJ, Norwood AE, Fullerton CS, Holloway HC, Hall M. In: Ursano RJ, Norwood AE, eds. *Trauma and Disaster: Responses and Management*. Washington DC: American Psychiatric Association; 2003:138-140.

10. Conlon L, Fahy TJ, Conroy R. PTSD in ambulant RTA victims: a randomized controlled trial of debriefing. *J Psychsom Res*. 1999:46;37-44.

11. Wessley S, Rose S, Bisson J. A systematic review of brief psychological interventions ("debriefing") for the treatment of immediate trauma related symptoms and the prevention of post traumatic stress disorder (Cochrane Review). *The Cochrane Library*. 1998(3).

12. Raphael B. *Psychological Debriefing: Theory, Practice, and Evidence*. Cambridge, UK: Cambridge University Press; 2000.

13. Kwik, G. So what can we learn about epidemics after recovering from SARS? *Biodefense Quarterly*. 2003;5(2):1-9.

14. Peters RG, Covello VT, McCallum DB. The determinants of trust and credibility in environmental risk communication: an empirical study. *Risk Anal*. 1997;17:43-54.

SUGGESTED READING

Preston R. *The Demon in the Freezer*. New York, NY: The Random House Publishing Group; 2002.

Gursky E, Ingleby TV, O'Toole T. Anthrax 2001: Observations on the medical and public health response. *Biosecurity and Bioterrorism: Biodefense Stategy, Practice, and Science*. 2003;(2):1.

Prior, Stephen D. The implementation of shielding. *Intl J Emerg Ment Health*. 2002;4(4): 271-278.

Brown BS, Prior SD. Public health and the public trust: the defining dyad for the 21st century. *Intl J Emerg Ment Health*. 2002;4(4):239-244.

Glass T, Schoch-Spana M. Bioterrorism and the people: how to vaccinate a city against panic. *Clin Infect Dis*. 2002;34:217-223.

YOU ARE THE FIRST LINE OF DEFENSE.

Recognize agents of terrorism
and emerging infections.
Respond by immediately contacting
your **local health department** at

( ) -

Phone number of local health department

You may also contact the
Centers for Disease Control (CDC)
Emergency Response Hotline (24 hours/day) at
1-770-488-7100.

Terrorism and Disaster

WHAT CLINICIANS NEED TO KNOW

Rush University Medical Center faculty, in collaboration with faculty from the Uniformed Services University of the Health Sciences (USUHS) authored a case series to provide continuing medical education (CME) for terrorism preparedness and other public health emergencies.

A series of 14 case studies was developed to provide innovative learning opportunities for health professionals to problem-solve issues related to terrorism or other public health emergencies. Due to the complicated and volatile nature of a terrorist event, the case studies were designed to expand outside the clinician-patient interaction and involve:

- deploying outside resources
- notifying appropriate officials
- coordinating a response team
- dealing with media and concerned public
- initiating emergency/disaster plans

Each case provides the CME user with decision-making challenges within his or her discipline, along with scenarios that address broader interdisciplinary issues. This interdisciplinary approach is particularly important in disaster preparedness, when health professionals will likely be called on to work outside their day-to-day experiences.

Authored by experts in the field, each self-paced case includes a thorough case history, questions to test your knowledge, a resource list of additional readings and relevant websites. One-hour CME and CEU credit is available for each case, following the successful completion of the CME questions included with each case.

The cases in the series include:

MEDICINE

The medicine cases address recognition of the agent, diagnosis, treatment, and medical case management.

- **Pneumonic Plague**
- **Radiation Attack**
- **Sarin**
- **Smallpox: Recognition, Management, & Containment**
- **Staphylococcal Enterotoxin B**
- **Viral Hemorrhagic Fevers**

PSYCHIATRY

The psychiatry cases address issues of disaster psychiatry.

- **Emergency Mental Health After a Suicide Bombing**
- **Psychiatric Sequelae in a Survivor of 9/11**
- **Psychosocial Management of a Radiation Attack**

INTERDISCIPLINARY

The interdisciplinary cases address basic medical management,general disaster planning, communicating with the media and concerned public, and psychosocial case management.

- **Anthrax**
- **Chemical Attack: Airway and Anxiety Management**
- **SARS**
- **Smallpox Attack: Assessment, Communication, & Coping**
- **Pandemic Influenza**

For more information or to order your free copy of any of the cases in this series, please contact:

Office of Continuing
Medical Education
Rush University Medical Center
Suite 433 AAF
Chicago, Illinois 60612
Telephone: (312) 942-7119
Facsimile: (312) 942-2000
E-mail: cme_info@rush.edu

RUSH UNIVERSITY
MEDICAL CENTER