CSTS

Center for the Study of Traumatic Stress

Understanding the Effects of Trauma and Traumatic Events to Help Prevent, Mitigate and Foster Recovery for Individuals, Organizations and Communities
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Psychological and Behavioral Issues Healthcare Providers Need to Know when Treating Patients Following a Radiation Event

Introduction

An attack using radiation will create uncertainty, fear, and terror. Following the detonation of a Radiation Dispersal Device (RDD) the management of acute psychological and behavioral responses will be as important as the treatment of RDD-related injuries and illnesses.

Radiation is a dreaded threat, usually seen as catastrophic and fatal. Radiation is invisible, odorless and unknown. These ingredients stimulate worst-case fantasies. People must rely on health care providers and scientists to determine whether or not a person has been contaminated. Radiation exposure may not be manifest immediately. The health effects of radiation can be delayed in time, not only affecting those exposed but also future generations. Those who have been exposed or anticipate possible exposure feel a sense of vulnerability, anxiety, and a lack of control. The common lack of consensus among experts can increase public fear and anger.

After a terrorist event there are three groups of psychological responses: those who are distressed; those who manifest behavioral changes; and those who may develop psychiatric illness. Distress following a radiation release will be common and manifest as sadness, anger, fear, difficulty sleeping, impaired concentration, and disbelief. Psychological distress after a radiologic icident may also manifest as somatic complaints for which no diagnosis can be found (often referred to as "MIPS" — Multiple Idiopathic Physical Symptoms. These patients should be managed by general health care providers. Some individuals will manifest changes in their behavior such as decreasing travel, staying at home, refusal to send children to school as well as increased smoking and alcohol use. For the vast majority of people, distress and psychological and behavioral symptoms related to the traumatic event exposure will diminish over time.

For others, however, symptoms will persist and affect function at home and work, and may result in psychiatric illness. While Acute Stress Disorder (ASD) and Post-Traumatic Stress Disorder (PTSD) are the disorders most people think of in connection with trauma, major depression, increased substance use, family conflict, and generalized anxiety disorder are also encountered.

It is important to remember that people with no prior history of psychiatric illness are vulnerable to psychiatric illness after a terrorist exposure. In the aftermath of the Oklahoma City bombing, nearly 40% of those who developed PTSD and depression had no previous psychiatric disorder. Those at high risk of developing psychiatric disorders include:

- those directly exposed (e.g., people near the blast and those participating in rescue and recovery operations of people and remains),
- those who were more vulnerable before the event due to existing mental illness,
- those who suffered resource losses and disruption of their social supports after the event.

There have been a number of technological disasters, terrorist attacks, and use of novel weapons in the context of war which suggest that healthcare providers' offices, medical clinics, and hospitals will be deluged with symptomatic and asymptomatic patients seeking evaluation and care for possible contamination following a radiation event . Some of these patients will be diagnosed as having acute radiation sickness, others will have diagnosable conditions unrelated to radiation, and a large number will be found to have symptoms for which no etiology can be found. A very conservative estimate of unexposed: exposed patients seen in medical settings is 4:1. In the acute aftermath, many unexposed patients will fear that they have been exposed because they will misattribute signs and symptoms of autonomic arousal to radiation. In the longer term, patients will present to primary care providers with multiple somatic complaints for which no etiology can be determined. Attachment A suggests strategies for managing these patients.

I. Healthcare Providers and Mental Health Care after a Radiation Event

Following a radiologic event, people will likely turn to healthcare providers for information and guidance. For example, following the 2001 anthrax attacks, 77% of a representative sample of Americans reported that they would trust their own doctor most as a reliable source of information.

Healthcare providers play a key role in determining how patients and the general public respond to a radiological terrorist event. A well-organized, effective medical response will instill hope and confidence, reduce fear and anxiety, and support the continuity of basic community functions.

Healthcare providers are also subject to fear and terror. Absenteeism, flight, refusal to see patients, and other fear-organized behaviors have been reported following infectious disease outbreaks (such as the outbreak of pneumonic plague in Surat, India) and other instances of new or unfamiliar, life-threatening agents.

Some healthcare providers are prompted by concerns for their personal safety. At times health care providers, like others, have fled their health care responsibilities. Many of those who abandon their responsibilities do so because they feel they need to protect their families, often by evacuation.

Ensuring that health care providers understand radiation and countermeasures for protection can minimize role abandonment. Perhaps most importantly, health care providers are more likely to provide patient care if they believe that their families will be taken care of in their absence – e.g. are given potassium iodide, etc. The availability of ongoing telephone contact with families and dedication of personnel to assist health care provider's families will be reassuring to health care providers and help them focus on their mission.

II. Triage and Initial Disposition

Triage and disposition is challenging. For example, in the 1987 Cs-137 accident in Goiânia, Brazil, 8.3% of the first 60,000 people screened, presented with signs and symptoms consistent with acute radiation sickness: skin reddening, vomiting, diarrhea, etc. although they had not been exposed.

The term "worried well" and similar disparaging terms should never be used. When labels suggesting "it's all in your head" are used, patients feel stigmatized and that their health concerns have not been taken seriously. The use of such labels contributes to mistrust of the medical community and a loss of its credibility. A non-stigmatizing triage labeling system such as "high risk", "moderate risk", "minimal risk" conveys continued concern and monitoring which is reassuring to patients.

Mental Health professionals, ideally psychiatrists due to their background as physicians, should be an integral part of the teams that perform initial screening and triage. Referral to a mental health specialist is usually experienced as stigmatizing. The patient may feel that the physician has missed some important clue of contamination and is dismissing him prematurely.

The establishment of an "Emergency Services Extended Care Center" (ESECC) offers an important means of monitoring patients, who remain fearful and are not reassured by negative findings. In the event that a patient is misdiagnosed, the patient can be accompanied back to the Emergency Department. Patients with minor physical problems who cannot return home can be referred here. Ideally, there would be simple tasks that the patients can perform while in the ESECC will help them transition out of the patient role and restore their sense of control.

III. Early Psychological Interventions

Early psychological interventions (psychological first aid) are provided in the first hours, days, and weeks after exposure to a terrorist event. The most important element of psychological first aid is good medical care. In addition, psychological first aid includes:

Psychological First Aid

- Reduce physiological arousal – encourage rest, sleep, normalization of eat/sleep/work cycles
- Provide food and shelter in a safe environment
- Orient survivors to the availability of services/support.
- Facilitate communication with family, friends, and community.
- Assist in locating loved ones
- Keep families together and facilitate reunions with loved ones
- Provide information and foster communication and education.
- Observe and listen supportively to those most affected
- Decrease exposure to reminders of the traumatic event
- Advise decreasing watching/listening to medial coverage of overly traumatic images and sounds (e.g., people jumping out of buildings, victim stories)
- Educate patients to check rumors with available information resources
- Use established community structures to encourage social conduct and education (e.g., faith-based institutions and businesses
- Distribute flyers and host websites
- Encourage talking to and involvement with the patients natural social supports such as families, friends, neighbors, and coworkers. This will encourage discussion of fears, interpersonal support, and early detection of persistent symptoms.

- Offer reevaluation if symptoms persist.
- Educate about the expected natural recovery that occurs for most people over time.
- "Debriefing" is a controversial acute intervention. Appendix B discusses it in more detail.

IV. Health Care: Evaluation and Diagnosis

- Psychological and behavioral issues of a radiation release from an RDD will generally far outweigh the physical illness management problems.
- Depression, bereavement, family conflict, and somatization will be the more common psychiatric presentations than posttraumatic stress disorder (PTSD).
- Increased smoking and increased alcohol use can be expected, at least in the short run.
- Sleep disturbance, hypervigilance, decreased concentration, and uncertainty will be common early psychological distress symptoms. These should be managed by education, counseling and perhaps brief use of hypnotic medication for sleep.
- Uncertainly about health effects should be recognized and not minimized in communicating to patients and the public.
- The principles of medical care and management of the patient present with medically unexplained symptoms (MUPS) include:
  1. Carefully assess and record the specifics of the patients' concerns.
  2. Establish follow-up/appointments rather than "return if there's a problem".
  3. Consult medical management as appropriate.
  4. Listen for patient fears and concerns.
- Patients do not process or remember information well when they are very frightened. Handouts on radiation that summarize key points and instruct on how to get follow-up should be used.
- Many people will be unsure if they have radiation-related illness (up to 50% of those in contaminated areas).
- Both men and women will be worried about damage to their genetic material and potential harm to future generations.
- Negative life events occurring after an attack increases risk for psychiatric illness, illness, and injury.
- Distress is decreased by reinforcing self-efficacy and providing information that can be used to protect oneself and ones family.
- The psychological value of distributing potassium iodide and other protective mechanisms can be substantial.
- Patients presenting with multiple somatic complaints to primary care provider may have physical illness, or this may be an expression of distress, depression or demoralization. Accurate differential diagnosis and management of these individuals will require education of primary care providers.
- Lack of baseline health data in exposed populations will lead to the misattribution of illness to radiation exposure by individuals and communities.
- Those with the additional negative life events, either before or after an RDD event, will have more psychological distress and psychiatric illness.

V. Patient Education

- Repeated education about risks and protective countermeasures will help diminish fear, concern, and distress.
- Health care providers should anticipate questions about the safety of their food and water supplies and whether homes are contaminated.
- Educate patients that distress is universal and that they may experience common responses such as sleep disturbance, loss of appetite, and diminished concentration that should resolve over the next several weeks. If these symptoms persist or begin to affect their function at work or home, they should return to their health care provider.
- Fears and preoccupation with cancer will remain high for years. Responding accurately, empathetically and recognizing what is not known is important.
- Many people fear radiation. The images and history attached to the issues of radiation and nuclear power enhance these fears.
- Patients should be counseled to expect to hear conflicting views by experts and, ideally, how to sort through it.
- Health care providers should understand the basic areas of disagreement about radiation's health consequences and be ready to explain them to patients in a very straightforward and simple manner. Uncertainly about health effects should be acknowledged and not minimized in communicating to patients and the public.
- The concept of a "threshold dose" of radiation below which risk is not changed is difficult for many to understand. Similarly the concept of "half life" is not easily transmitted to communities. Simple metaphors or other messages to explain these complex scientific ideas (such as liquids evaporating at different rates) must be developed for healthcare providers to use

with their patients (as well as appearing in mass media campaigns.)

- Stigmatization of those exposed or traveling from contaminated areas can be expected. This will affect the relocation and entry of new students into school systems.
- Outreach health education to school systems, parent-teacher education programs and through school nurse training can allay community anxiety.

VI. Special Issues (Children and Pregnant Women)

- Parental concern for children will be high. This will be true for children exposed and not exposed.
- Reports by parents of child distress, fears, and worries contain both accurate observations and the fears of the parent.
- Direct assessment of children and adolescents is important to determine the child's mental health because of the high levels of distress in the parents.
- Pregnant women and women with small children will have high concern following a radiation incident. Pregnant women may seek abortion to avoid expected or feared possible child malformations. Special education and counseling will be needed.

VII. Public Health and Mental Health

- Establishment of a clinical registry and appropriate health surveillance are important psychological interventions. Patients who have their contact information recorded in a database will feel more assured that follow-up will be available.
- Smoking cessation programs can be an important public health intervention.
- Handouts on stress and fear management techniques and activities should be available for distribution.
- Public health outreach to senior citizens will be important since their distress may heighten their withdrawal and staying at home. Door-to-door contact programs for this group and those with chronic medical needs who stay at home will be needed.
- Family concerns about genetic effects on future generations will be high.
- People will want to move away from contaminated areas both acutely and over time.
- Many will believe the federal government should pay for their relocation and the cost of lost property.
- Who delivers risk information is as important as, or more so, than the content for whether the information is believed and trusted.
- Contamination of food supplies, in particular milk and ethnically important foods (e.g., reindeer in Norway following the Chernobyl disaster) create acute and long-term education needs and potential health surveillance needs.
- Contaminated communities may manifest cohesion or anger, low morale, and decreased social service due to distress and economic losses.
- Relocation of families is complicated and requires particular attention to familial needs and social justice. Maximizing the choice of families is important. Some (perhaps 10%) will not want to move.
- Expect concern over whether there is equitable distribution of health care resources to those affected or believed to be affected (food, healthcare, etc). A perception of inequity will stress social fault lines and may divide communities.
- The rationale underlying prioritization of services must be explained to the public and must be reasonable to those designated as lower priority.
- Expect and plan for ongoing health surveillance for months to years.
- Fears of radiation will mobilize both heroism and avoidance in first responders. Both can have important positive or negative effects on performance.
- Distribution of protective mechanisms including potassium iodide must be closely watched for abuse and exploitation.
- Stress in and around contaminated areas is increased by the often present need to stay in the location due to jobs or inability to sell one's home. This will have long-term psychological and possibly physiologic health costs.

APPENDIX A

Communication Between Primary Care Providers and Patients: Education Strategies after an RDD Event

Background

- The virtual imperceptibility of low-level radiation exposures may cause many to develop persistent health concerns or to arbitrarily link idiopathic symptoms to benign or improbable exposures.
- Over 90% of the general population will visit their primary care provider each year, making primary care a crucial setting for dissemination of accurate health risk information following suspected community radiological exposures.
- Even under usual circumstances, a third of primary care patients present for assistance with medically unexplained physical symptoms (e.g., idiopathic fatigue and pain).

- Therefore, communication and education plans for primary care health care providers working with health care seeking populations are needed to ensure appropriate medical care and assistance.
- This is one part of the public health response after an RDD.

Primary Care Communications Triage

- After suspected exposure, it is useful for primary care clinics to routinely assess the degree of concern about exposure-related illness, separate from actual exposures, "Is your visit today related to terrorism or radiation concerns?" at the beginning of every visit.
- It is important for all patients visiting primary care, regardless of the reason, that their exposure to the radiation or other toxic agents be determined. In some settings this will be by using technology, and more commonly it will be by the patient's history of time and place/location over a critical period of time.
- Patients who respond 'yes' or 'maybe' to the questionnaire on their concern about exposure-related illness should receive extra primary care assessment to elucidate the nature of the patient's concerns and his/her expectations of and goals for the medical visit. These concerns and expectations guide medical triage and the intensity of risk communication efforts.
- Assessment of symptoms and possible disease after an RDD event will include physical and psychological symptoms and disease. Assessment for Posttraumatic Stress Disorder (PTSD), depressive or anxiety disorders, and altered alcohol or smoking are important.
- Based on this initial primary care assessment of exposure, concern, presence or absence of symptoms, and the presence or absence of disease (medical and psychiatric), patients may be assigned to categories for treatment, follow-up, education, and counseling on risk, symptoms, concern, and/or disease findings.
- Often the primary care provider has the most difficulty in communicating with those who are:
    1) possibly exposed but unconcerned and with no symptoms or disease
    2) either exposed or unexposed with a high level of concern but asymptomatic (no symptoms or disease)
    3) either exposed or unexposed with a high level of concern and unexplained symptoms (e.g., no disease). These patients are often categorized as having MIPS (Multiple Idiopathic Physical Symptoms).

Communication Interventions for Critical Primary Care Groups

- Possibly exposed but unconcerned with no symptoms or disease – Many patients will deny or neglect personal medical needs. Assuming medical needs are subacute, careful contact information should be obtained and entered into a local registry to facilitate follow-up to ensure patient has attended appropriately to injuries and exposures.
- Either exposed or unexposed with high levels of concern but asymptomatic – Some patients amplify concerns and repeatedly resist clinician reassurances. In a mass casualty situation, these patients can disrupt delivery of critical medical care; plan for these patients by dedicating staff and an area to their care. Development of a careful contact registry with dedicated efforts to provide follow-up contact and care is one way of communicating compassion and concern without succumbing to risky or unnecessary testing. Research suggests that a negative test offers only transient (i.e., days to a week or two) reassurance and can sometimes increase illness concerns, especially when false positive results occur. Discussing the basis for patient concerns and exploring what tests the patient thinks he or she might need prevents many patients from feeling that the clinician has "blown them off". Time contingent follow-up (planned rather than "PRN" visits) reduces illness worry, increases satisfaction with care, and may mitigate downstream litigation conflicts and concerns.
- Either exposed or unexposed with high levels of concern and unexplained symptoms (no disease, MIPS) – As with the asymptomatic concerned patient, the patient with idiopathic symptoms can disrupt delivery of critical medical care. These patients may invoke more clinician anxiety because unlike the patient with isolated concerns, these patients are often visibly suffering and their symptoms may sound potentially catastrophic (e.g., chest pain and sweating).

    In addition to a dedicated area, staffing, contact registry, and redoubled primary care follow-up efforts, intervention for patients concerned with unexplained symptoms should involve brochures, fact sheets, and literature about self-management approaches to medically unexplained symptoms. In the acute crisis, it is helpful to triage these patients to an area distinct from the area used to care for acutely ill individuals, but the area should not be labeled or perceived as a "psychiatric care" area for "worried well" patients so it remains maximally acceptable. Many of these patients fear their symptoms represent a harbinger of impending medical catastrophe. Patient resentment can lead to resentment and result in a "contest" in which patients may "up the illness ante" until afforded medical legitimacy. Therefore, patients with unexplained symptoms should receive early and frequent validation from the clinician that symptoms are important and will be followed up quickly and carefully. The care of patients with unexplained symptoms is frustrating for primary care physicians, especially if the physician feels that "minor problems" are distracting them from more acute care.

The use of an onsite "ombudsman" or "advocate" who can help patients with unexplained symptoms overcome perceived barriers to care helps to defuse patient notions that "no one cares" and affords clinicians' a "program" to reduce the pressure to meet these patients' needs. The ombudsman can make special efforts ensure that symptoms are acknowledged, "embraced", and carefully discussed. As with concerned but asymptomatic patients, time-contingent follow-up is key. If symptoms persist and explanations for symptoms remain unclear, some of these patients may mistrust clinician motives and develop improbable "conspiracy theories". Advocacy for these individuals may reduce the likelihood of eventual litigation including class action lawsuits.

APPENDIX B

The Debriefing Debate

The magnitude of death and destruction in disasters and the extent of the response demand special attention. Physical safety and security of victims and relief workers must take first priority.

After safety is assured, other interventions such as debriefing may begin. Debriefing is a popular, early intervention following disasters in which small groups of people involved in the disaster, such as rescue workers, meet in a single lengthy session to share individual feelings and experiences. The effectiveness of debriefing in preventing later mental health problems is much in debate. As a minimum the following should be considered if you include debriefing as part of an intervention plan.

- Rest, respite, sleep, food and water are the primary tools of early intervention.
- It is important to encourage natural recovery processes such as participants talking to fellow workers, spouses and friends. This can decrease isolation and therefore facilitate identification of persistent symptoms and increase the chances of early referral.
- Debriefing has not been shown to prevent PTSD. For some, it may relieve pain, restore some function and limit disability, however, further study is needed.
- There are a number of early approaches other than debriefing (e.g., continue to follow and reevaluate, case management and problem solving, couples emotional support training, sleep medication, intermittent psychotherapy, advice giving/education). These should be considered in an intervention plan.
- Debriefing during an ongoing traumatic event may be particularly problematic.
- Debriefing is an opportunity for education about responses to trauma such as emotional reactions to disaster, somatic reactions, violence, substance abuse, and family stress.
- During a debriefing there is an important opportunity to identify and triage people who are in need of additional assistance/intervention.
- Ongoing groups are more helpful than a one-time meeting.
- Talking in homogeneous groups (e.g., firefighters) may be more helpful than in heterogeneous (stranger) groups.
- Individuals dealing with the death of a loved one may have difficulty if placed in a group with others who have survived a death threat. Therefore it is generally important not to mix those who have experienced a loss and those who have experienced life-threatening exposures.
- Debriefing groups with individuals having different levels and types of exposures may "spread" exposure from those with high trauma exposure to those with low trauma exposure resulting in more symptoms in low exposure individuals.
- Different people have different stories and concerns. Groups often tend to want to all agree on a single perspective. In a heterogeneous group this may lead to isolation and stigmatization of some participants.

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