The Inner Life of Physicians and Care of the Seriously Ill

Diane E. Meier, MD
Anthony L. Back, MD
R. Sean Morrison, MD

Persons living with serious chronic illness are psychologically vulnerable and subject to strong emotions. It is not surprising that physicians respond to these patients with emotions of their own. These emotions are many and include a need to rescue the patient, a sense of failure and frustration when the illness progresses, feelings of powerlessness against illness and its associated losses, grief, fear of becoming ill oneself, and a desire to separate from and avoid patients to escape these feelings. Although these emotions are common in the everyday practice of medicine, they can affect both the medical care that physicians provide and the well-being of physicians themselves. Here we provide a rationale for increased physician self-awareness through exploring the influence of the emotional life of physicians on patient care. We describe a model for detecting and working with emotions that may affect patient care. Our approach is based on the standard medical model of risk factors, signs and symptoms, differential diagnosis, and intervention. Although it is normal to have feelings arising from the care of patients, physicians should take an active role in identifying and controlling those emotions.

Theoretical Rationale and the Importance of Self-awareness

The need for physician training in the conscious recognition of their emotions is based on the professional obligation to care for the sick. The patient-physician relationship is fundamentally asymmetrical. In the idealized professional model, the needs and interests of the patient are intended to be the sole focus of the relationship and, with the exception of appropriate reimbursement and respect for rules and boundaries (showing up for appointments, paying bills), physicians’ feelings are extraneous. If, however, physicians’ inevitable emotions are not acknowledged, there can be unintended consequences. Although psychiatrists have long recognized the importance of transference (patients’ feelings about clinicians) and countertransference (clinicians’ feelings about patients) and have used recognition and naming of these emotions as a therapeutic modality, most nonpsychiatrists are not trained to use identification of the emotions generated in clinical encounters as therapeutic information. The following case illustrates the impact of unexamined physician emotion.

Dr R prided himself on his expertise at treating pediatric leukemia. One of Dr R’s patients, Alex, was 16 years of age and had acute myelogenous leukemia. Alex was close in age to Dr R’s son, and Dr R had become quite fond of him and his family. After a year of chemotherapy and a failed bone marrow transplant, Alex died. Dr R had lost several other young patients in recent months, and Alex’s death felt like the last straw. For a few months after Alex’s death, Dr R experienced feelings of hopelessness, hopelessness, and uncertainty about the purpose of his life’s work. He found it difficult...
BOX 1. Potential Impact of Unexamined Physician Feelings on Patient Care and Physician Well-being

Impact on Patient Care
Poor-quality patient care
Failure to identify patient-specific and family-specific values influencing decisions
Incoherent care goals
Increased health care use and inappropriate use of life-sustaining medical technologies because of failure to engage in time-consuming decision processes, lack of clarity about care goals
Patient and family mistrust of health care system and medical profession
Avoidance leading to increased medical complications and length of hospital stay

Impact on Physicians
Professional loneliness
Loss of professional sense of meaning and mission
Loss of clarity about the ends of medicine
Cynicism, helplessness, hopelessness, frustration
Physician anger about the health system and the practice of medicine
Loss of sense of patient as a fellow human being
Increased risk of professional burnout, depression

Box 1. Potential Impact of Unexamined Physician Feelings on Patient Care and Physician Well-being

Impact on Patient Care
Poor-quality patient care
Failure to identify patient-specific and family-specific values influencing decisions
Incoherent care goals
Increased health care use and inappropriate use of life-sustaining medical technologies because of failure to engage in time-consuming decision processes, lack of clarity about care goals
Patient and family mistrust of health care system and medical profession
Avoidance leading to increased medical complications and length of hospital stay

Impact on Physicians
Professional loneliness
Loss of professional sense of meaning and mission
Loss of clarity about the ends of medicine
Cynicism, helplessness, hopelessness, frustration
Physician anger about the health system and the practice of medicine
Loss of sense of patient as a fellow human being
Increased risk of professional burnout, depression

to go to work, noticed he was irritable with his family and colleagues, and felt burdened by the needs of his patients. His confidence in his medical skill and abilities was shaken, and for the first time in his career, he wondered if he was burned out.

Dr R’s story is familiar. A patient’s death following a long illness may be experienced by the physician as a personal and professional failure. Dr R’s inability to cure Alex, combined with his attachment to this young patient and his family, resulted in emotions that adversely affected both Dr R and his ability to care properly for his patients.

Consequences of Unexamined Physician Emotion on Patient Care
The most visible consequence of unexamined physician emotions is compromised patient care. A small body of research has examined the consequences of physician emotion on medical care (Box 1). Physicians’ feelings of medical ineffectiveness and strong emotion about the meaning of the diagnosis interfere with their abilities to assess human immunodeficiency virus (HIV) risk. Similarly, case studies and data suggest that requests for assisted suicide are so disturbing to some physicians that they disengage from or avoid their patients. Such reactions to expressions of suffering do little to respond to patients’ communications of distress and implicit requests for help.

Another consequence of unexamined emotion is that physicians themselves may experience chronic loss of engagement and satisfaction with work. Dr R’s case illustrates how this phenomenon can be associated with unexamined and sometimes overwhelming feelings of conflict between consciously mandated behaviors (taking care of the patient) and unconscious feelings (the care—and the physician—has failed). The consequences of unexamined emotions resulting from the care of seriously ill patients can include physician distress, disengagement, burnout, and poor judgment.

Does improving self-awareness influence care outcomes, such as better medical decision-making or reduced physician impairment? Although the available evidence is based largely on reports of experienced educators, these issues merit discussion because the impact of unexamined physician emotion on physicians and patients alike is self-evident, because it is consistent with limited data and observations of case studies, and because these issues are not part of routine medical training and are not commonly discussed among (nonpsychiatrist) physicians.

A Medical Model for Detecting and Working With Physicians’ Personal Emotions
It is both universal and normal for physicians to have feelings about their patients. Acceptance and awareness of this phenomenon are prerequisite to the self-knowledge and self-control required in a professional patient-physician relationship. Regulating the degree of emotional engagement between self and patient—not too close and not too distant—is one of the fundamental developmental tasks of physicians. Excess attachment and avoidance or disengagement are forms of abandonment of the physician’s primary mission, caring for the patient. One approach to helping physicians successfully regulate their degree of emotional attachment is to use the familiar medical model of identifying risk factors that predispose physicians to excess emotional engagement and disengagement, recognizing the signs and symptoms of emotion adversely affecting patient care, establishing a differential diagnosis, and engaging in corrective action.

Risk Factors
Certain clinical situations predispose physicians to emotions that increase the risk of overengagement or underengagement in the patient-physician relationship (Box 2). These situations may be influenced by internal factors that the physician brings to the encounter, external factors inherent in the patient or illness, or factors related to the clinical situation.

Dr P had cared for a close family friend for many years. After a years-long bout of lung cancer, her patient was hospitalized with dyspnea and renal failure. Dr P called in the best consultants she knew to care for her.
friend. Several weeks into the hospitalization, the patient’s daughter complained that no one—including Dr P—was coordinating the patient’s care or talking to him about his wishes. Subsequently Dr P called for a palliative care consultation to manage her friend’s symptoms and address the goals of further medical care. The patient’s now extreme dyspnea was controlled with opioids, and as a result the patient became more alert and comfortable. He then asked that dialysis be discontinued and that he be allowed to die, saying, “I just want to go to sleep.” Dr P felt incapable of discussing this request with the patient and withdrew from day-to-day involvement with the case. Both the patient and his family were disturbed by Dr P’s absence and wondered aloud if the request to stop dialysis had angered her. After psychiatric consultation, which determined that the patient had decisional capacity and no evidence of depression, and repeated discussions with the palliative care team, the patient chose to discontinue dialysis. He died of progressive respiratory failure several weeks later.

Dr P made sure that physicians addressed each of her patient’s organ systems, but no single professional took responsibility for his overall care, in Dr P’s case because of her close personal relationship with her patient. The prospect of her patient’s death and the fear that her medical decisions might play a role in it caused Dr P to withdraw emotionally and professionally. Dr P failed to perceive the ethical and legal difference between a patient’s right to choose to stop life-sustaining treatments vs a request for a physician-assisted suicide.2,23,33-37,41,44 Her inability to address the reasons for her patient’s desire to discontinue dialysis, combined with her rapidly worsening clinical condition, only heightened the patient’s sense that there was little reason to remain alive—even his long-term friend and physician appeared to have lost interest in him.

Illness characteristics may also be risk factors. Chronic illnesses and protracted dying may require a sustained level of attention over prolonged periods. Physicians can develop a sense of helplessness and frustration directly related to the patient’s increasing dependency and demands on the physician’s time.2,23,36,69 The patient’s unimproving health may lead the physician to feel guilty, insecure, frustrated, and inadequate. Rather than address these feelings, physicians may withdraw from patients.

Conflicts with family members or other physicians42,43,72 about the proper goals of medical care in the setting of a life-threatening illness may also be risk factors for disengagement. Mr J is a 35-year-old man with advanced acquired immunodeficiency syndrome (AIDS) and a history of multiple hospitalizations for recurrent opportunistic infections and multiple intubations for respiratory failure. He was admitted to the intensive care unit (ICU) after being intubated for pneumonia. Several weeks later, the ICU team recommended that the ventilator be withdrawn and he be allowed to die. His mother adamantly refused this request and would no longer speak with the doctors. She began to visit late at night after the ICU attending physician had gone home. The primary care physician, who had had a close and long-term relationship with the patient, began to make only brief visits to the ICU and leave notes stating that care should continue “as per the ICU team.” In chart notes and discussions with colleagues, the ICU physicians expressed the view that Mr J’s continued ventilatory support was futile, burdensome to the patient and family, and wasteful of scarce resources. The primary care physician, who also viewed ventilatory support as futile, had little time to engage in the needed discussions with the patient’s mother and was not optimistic that she would accept his advice. He had never discussed his patient’s wishes for care under these circumstances, an omission he regretted, since he was confident the patient would not want a protracted dying process on the ventilator. Because of the physician’s own guilt, fatigue with the repeated critical

### Box 2. Risk Factors for Physician Feelings That Can Influence Patient Care

#### Physician Factors
- Physician identification with the patient: similar appearance, profession, age, character
- Patient similar to an important person in physician’s life
- Physician has ill family member, is recently bereaved, or has unresolved loss and grief
- Professional sense of inadequacy or failure
- Unconscious reflection of feelings originating within and expressed by the patient or family
- Inability to tolerate high and protracted levels of ambiguity or uncertainty
- Fear of death and disability
- Psychiatric illness such as depression or substance abuse

#### Situational Factors
- Long-standing and close patient-physician relationship
- Physician has prior personal relationship with a patient (friend or family connection)
- Physician and patient/family disagree about the goals of medical care
- Physician disagreements with colleagues over patient management
- Conflicting professional obligations
- Time pressures
- Multiple hospital admissions within short periods
- Prolonged hospitalization
- High levels of ambiguity and uncertainty about prognosis
- Protracted uncertainty about medical care goals

#### Patient Factors
- Patient or family is angry or depressed
- Patient is a medical or health professional
- Patient is well known or in another special category
- Complex or dysfunctional patient-family dynamics
- Mistrust caused by short-term or multiple patient-physician relationships

©2001 American Medical Association. All rights reserved.
Box 3. Physician Feelings Influencing Patient Care: Warning Signs and Symptoms

Signs (Behaviors)
- Avoiding the patient
- Avoiding the family
- Failing to communicate effectively with other professionals about the patient
- Dismissive or belittling remarks about patient to colleagues
- Failure to attend to details of patient care
- Physical signs of stress or tension when seeing the patient or family
- Contact with the patient more often than medically necessary

Symptoms (Emotions)
- Anger at the patient or family
- Feeling imposed upon or harassed by patient or family
- Feeling of contempt for patient or family
- Intrusive thoughts about patient or family
- Sense of failure or self-blame, guilt
- Feeling a personal obligation to save the patient
- Belief that complaints of distress are manipulative efforts to seek attention
- Frequently feeling victimized by the demands of the practice of medicine

illnesses of this patient, workload, and sense of hopelessness about the patient’s outcome, he withdrew from participation in decision making and communication with the patient’s mother and the ICU team. At the same time, Mr J’s family, who had worked closely with this physician and had lived with the patients’ chronic illness, decommissions, and recoveries for years, struggled to come to terms with his fluctuating medical status and with their role as family members with the power to discontinue ventilatory support and, in their view, become the proximate cause of his death. These tensions led to mutual anger and irritation, and on the family’s part, to a sense of abandonment by the primary physician. In these instances, both family and professionals may have difficulty adjusting to changing goals of care: where once all shared the same aim, to save or at least prolong life, now uncertainty regarding changing goals inhibits communication between physician and family just when communication is most important.14,15,70-72

Finally, system-level conflicting obligations or interests may come between physicians and their ability to work in the best interests of patients. Managed care is the classic example of physician conflict of interest wherein physicians’ financial self-interest may be at odds with the interests of the patient.73,74 More quotidien examples of such competing obligations abound in many settings, including academic medicine where pressures to do research and publish conflict with clinical practice and in private practice where pressures to complete insurance documentation detract from time that might otherwise be spent caring for patients.173-75

Dr C is a successful academic physician. As a result of hospital financial difficulties, he and his colleagues have been required to substantially increase their clinical activities. Dr C is becoming frustrated at his inability to write and conduct research as a result of his patient care responsibilities. He often fails to return patients’ phone calls and refers patients to the emergency department rather than seeing them himself. He is relieved when patients cancel their appointments.

Dr C’s conflicting work obligations and academic pressures are compromising his care of patients. If he were more aware of his feelings of anger and resentment resulting from the conflicting demands on his time, his behavior and its effect on patient care could be exposed. Awareness of the impact of his emotions would make it possible for him to cope differently with the pressures he confronts: for example, he could arrange referral of his patients to someone who is more clinically focused and redouble his grant writing to make up the financial difference, or he could adjust his expectations so that he no longer places his academic productivity above all other considerations. In any case, his awareness of his emotions and their impact on patients precedes correcting the situation and ensuring appropriate medical care.

Becoming aware of clinical situations in which risk factors are present should help physicians recognize signs and symptoms indicating emotions that may harm patient care.14,15,23,46

Signs and Symptoms

Signs and symptoms of emotions affecting a patient’s care lead to recognition of the phenomenon and then prompt the search for a cause and an appropriate response (Box 3).

Mrs K was an 88-year-old woman with diabetes, hospitalized for recurrences of pneumonia and gangrenous foot ulcers. Her hospitalization was complicated by a protracted delirium and significant physical discomfort and pain. Mrs K’s daughter insisted on continued maximal application of technical life-sustaining therapies, saying to her doctor, “You’re her hero and you’ll save her. Don’t give up on her!” The daughter refused to allow adequate analgesia, fearing it might worsen her mother’s delirium and shorten her life. The physician felt helpless to intervene on behalf of his patient and began to avoid both her and her daughter. The patient died after a difficult 3-week hospitalization despite maximal life-sustaining treatments.

The behaviors and emotions listed in Box 3 and described above could be recognized if physicians were more aware of the accompanying signs and symptoms. The sign of emotions influencing patient care in this case was the physician’s avoidance of the patient and her daughter, which signaled his mounting sense of frustration and helplessness in being asked for something he was unable to give. If this physician had been able to recognize this avoidance and its impact, he might have maintained closer involvement in his pa-
tient's care and continued negotiations with Mrs K's daughter for appropriate analgesics.23,46,48,76

Another sign of unrecognized physician emotion affecting patient care is anxiety and distress about the patient's problems and an accompanying desire to avoid engagement with the situation.

Mrs T, a 55-year-old successful lawyer, had struggled with progressive renal cell cancer for several years and was increasingly distressed by her progressive dependency and feelings of isolation. She asked her doctor for advice on ending her life, saying that she “just [couldn't] take it any more.” Her doctor recalls feeling distressed by her request and her evident despair and ill equipped to explore the reasons for it with her. Instead, she tried to encourage her, saying that she didn't believe in helping her patients die and that now was not the time to give up hope. “You are a fighter and I know that you want to beat this.” She closed the visit by saying, “Hang in there,” and then gave the patient a pat on the back. Mrs T went home and took an overdose of sleeping pills 1 week later.

This physician's distress about her patient's desperation and her discomfort with the request for assistance in dying prevented her from exploring with Mrs T the reasons for her request and may have left the patient with the belief that she had few options and no place to safely explore her distress. Her physician later wondered whether hearing her reasons for wanting to die might have yielded a means of helping her decide to go on (such as a trial of treatment for depression) or at least allowed the patient to feel less alone in her despair.31-40,76 The physician involved in this case underwent a protracted period of distress and sadness in the aftermath of her patient's suicide.

Another common sign of unrecognized physician emotion affecting patient care is the unexamined Redoubling of therapeutic efforts as a patient's health declines and death nears.77

Mr I was a 52-year-old father of 3 from Kenya who had advanced hepatocellular carcinoma. Despite disease progression after several rounds of intrahepatic chemoembolization, he was rehospitalized for a third course of the same treatment. The oncologist did not promise a cure but told the patient it was all that he had to offer. He felt uncomfortable telling Mr I that his death was imminent, and Mr I did not ask. Mr I declined rapidly in the hospital and died. His family was devastated that they had missed the opportunity to take him home to Kenya to die because they felt he should have died on his native soil.

This physician's inability to discuss the patient's prognosis created false hope for both patient and physician, leading to an isolated hospital death and a family with permanent regret about their failure to bring Mr I home to die on his native soil.78 Although offers of heroic or last-ditch experimental therapies can signal the physician's persistent hope,79 there are costs associated with these behaviors.71,77,80 In Mr I's case, the physician's failure to inform the patient of his prognosis took from him a genuine choice about how best to spend his last weeks. Pursuing more chemoembolization also distracted his physician from offering appropriate palliative interventions.81

Box 3 lists some signs and symptoms of physician emotion that have the potential to affect patient care. These examples are broken down by feelings (symptoms) and behaviors (signs), since either can provide self-monitoring information to physicians.

### Differential Diagnosis

Once risk factors are identified and emotions and behaviors are recognized, the next step is to formulate a differential diagnosis of their possible causes. Such emotions can often be traced to a variety of causes rather than a single etiology, and the connections are not always explainable (Box 2).23,20,46,82 One important etiology stems from a patient or another physician unconsciously reminding the physician of an important relationship or difficult experience. Some attempt to understand the sources of the emotion may help the physician identify effective coping or compensatory mechanisms.

Dr B's father developed renal failure from toxic aminoglycoside levels associated with postoperative sepsis. Although Dr B's father recovered, he remains dialysis dependent. Feelings of anger and regret about the failure to appropriately monitor his father's gentamicin levels have prevented Dr B from communicating well with the infectious disease specialist responsible for his father's care. These feelings have resulted in a failure to communicate appropriately with this specialist about several mutual patients in the hospital. When Dr B recognized the effect of his feelings on the care of his patients, he was able to carry on an appropriate professional relationship with the consultant on behalf of their mutual patients.

In this case, Dr B's feelings about his colleague's medical error leading to his father's renal failure interfered with a professional relationship and compromised medical care. Other common root causes of physician feelings interfering with patient care include unachievable physician expectations for perfection in the care of patients; exhaustion, burnout, depression, and other personal problems; responses to strong emotions expressed by patients or families; and difficulty tolerating the uncertainty and ambiguity that characterize the practice of medicine.1

Ms B is a 27-year-old woman with HIV and was admitted to the hospital after candidal esophagitis was diagnosed. After 5 days in the hospital, she lapsed into a coma of unknown cause. After several weeks of extensive inpatient evaluation and increasing levels of life support, the patient's condition stabilized, although the etiology of her continued coma remained unclear. The patient's mother was repeatedly counseled as to the gravity of her daughter's illness, and the physicians caring for Ms B began to recommend that life support be discontinued, a recommendation that was consistently rejected by her mother. Chart notes described the mother as angry, highly unrealistic, and in denial. However, after a diagnosis of Wernicke encephalopathy, Ms B gradually recovered cognitive and motor function and was transferred to a rehabilitation center.

Several of the physicians caring for Ms B expressed anger in their written chart notes toward the patient's mother for what they perceived as her unrealistic hope for her daughter's recovery. The loss of hope and sense of frustration and helplessness felt by these physicians (as well as by the patient's mother) as they worked to care for this patient led to
2. Although etiology is often complex and multifactorial, awareness of common risk factors and contributors, their manifestations in feelings and behaviors, and their impact should help physicians engage in the routine process of reflection, self-monitoring, and coping necessary for the responsible practice of medicine.

**Approaches to Addressing Physician Emotions**

We have presented examples of common clinical situations in which we identify a relationship between unexamined physician emotion and adverse effects on patient care. We have argued that such emotions are normal and inevitable and have a significant influence on the practice of medicine. Physician emotions need not be treated as a disorder but do need to be acknowledged and understood so that the consequences of unrecognized physician emotion can be prevented. To help physicians use a professional process of reflection, self-monitoring, and coping, we offer the following steps.

1. **Name the feeling.** Recognizing and naming the feeling is the first and most important step in controlling the effect of the physician’s emotions on the patient’s care. Although much of what occurs between physician and patient involves unconscious processes, the act of separating enough from the feeling to be able to name it may lead to restoration of conscious control over, and rational choices about, how best to care for the patient, even if the root causes of the emotion remain unknown.

2. **Accept the normalcy of the feeling.** The discomfort or guilt associated with strong emotions can inhibit regaining control over their influence on patient care. Such feelings are usually normal—it is the resulting behaviors that may be maladaptive. Accepting the feeling allows the professional to make a conscious and therefore genuine choice about how to proceed in the relationship with the patient. This step allows physicians to think about the sources of the feeling, connect behaviors toward the patient with these feelings, and make conscious the therapeutic implications, either good or bad, of these behaviors.

3. **Reflect on the emotion and its possible consequences.** Considering possible connections between emotions and behaviors is a conscious effort. It allows physicians to step back from the situation’s immediacy and gain perspective needed to decide how to best take care of the patient. This reflection process may include conscious anticipation of alternative outcomes for the patient as a result of different kinds of professional behavior.

4. **Consult a trusted colleague.** Because strong feelings are inevitable in health professionals caring for extremely ill patients, a routine and structured mechanism for their identification has been recommended by a number of medical educators. Physicians in some training programs and many hospices schedule regular meetings for reflection and feedback about emotions occasioned by the care of patients. For most physicians, however, finding a trusted colleague with whom to discuss feelings and their consequences can be useful. Talking through a difficult situation can enable physicians to confront their own emotions and still provide excellent medical care. This process can reduce isolation and help build the network of support that is necessary for complex and demanding clinical work.

This process was successfully used by Dr B, whose father’s iatrogenic renal failure interfered with his professional relationship with the responsible infectious disease specialist. The sequence of events was initiated by a patient who had repeatedly asked Dr B to telephone the specialist about his antiretroviral therapy. The patient’s irritation with Dr B’s delay in accomplishing this small task allowed Dr B to become conscious of his reluctance to make the call. Dr B realized that he was avoiding the infectious disease specialist and compromising the care of his patient because of anger about his father’s bad outcome. He discussed his
behavior with a colleague, which allowed him to resume appropriate professional communication with the specialist.

COMMENT

Physicians work daily with patients and families struggling through devastating illness and loss. That such work has an emotional impact on health professionals is indisputable. Because feelings influence behavior and decisions, it is necessary for physicians to learn to identify and assess their feelings consciously. Taking a descriptive case-based approach to this syndrome of unexamined physician feelings influencing patient care, we propose a step-wise method for preventing and adjusting adverse physician behaviors: recognizing high-risk clinical situations and risk factors, monitoring signs and symptoms, developing a differential diagnosis, and determining a practical means of responding to these emotions (Figure).

Our approach has limitations. Although the medical model places awareness of physician emotions into a format familiar to physicians, we do not intend to imply that emotions arising in practice are problems that need treatment to be fixed. Rather, we wish to emphasize the importance of a nonjudgmental approach to detecting and examining emotions while maintaining that physician behaviors resulting from these feelings should be assessed critically. Our model does not attempt to provide guidance as to when physicians should seek professional counseling, although it is likely that unexamined and unaddressed physician emotions arising in the course of care of the seriously ill are contributors to the high rates of burnout, depression, and substance abuse reported in the medical profession.*

The foundation of our argument is that physician feelings are normal and inevitable and that these feelings influence behavior. The corollary of this ob-

servation is that it is a medical professional obligation to take responsibility for self-monitoring feelings to protect our patients (and ourselves) from the consequences of unexamined impulses. The key to successful self-monitoring is recognizing and symbolizing the feelings in words, accepting them, and reflecting on their potential consequences in a safe and confidential professional setting, such as during a conversation with a trusted colleague. This approach can enrich the experience of clinical practice and strengthen the profession’s commitment to care for patients.

Funding/Support: Drs Meier, Back, and Morrison are faculty scholars of the Project on Death in America, New York, NY. Dr Meier is recipient of an Academic Career Leadership Award (K07 AG00903) from the National Institute on Aging. Dr Morrison is the recipient of a Mentored Clinical Scientist Development Award (K08 AG00833) from the National Institute on Aging and is a Paul Beezen Faculty Scholar in Aging Research.

REFERENCES


*References 1, 18-20, 29, 30, 45, 47-55, 74, 82, 94, 95.

©2001 American Medical Association. All rights reserved.

(Reprinted) JAMA, December 19, 2001—Vol 286, No. 23

3013


