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## Burnout in Intensive Care

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We have undertaken a literature review based on 55 publications of occupational stress and burnout, with a particular focus on intensive care. Occupational stress is a common and complex problem amongst healthcare professionals and can adversely affect patient safety. Intensive care units are a high-risk area, requiring attention by all members of the clinical team and management support. Successful intensive care units may have desirable characteristics that can serve as important models for other areas in the organization.

### Introduction

The intensive care unit (ICU) and critical care services in general are a central component of any acute hospital, providing an important safety net for all acutely ill and emergency patients, as well as facilitating elective major complex surgery. Providing care for critically ill patients is an emotionally and physically challenging activity, and occupational stress-related illness amongst intensive care staff may have major adverse consequences, not only for the critical care service, but for the whole hospital. Staff support is thus an important responsibility for us all.


### What is 'Burnout'?

Burnout is a pathological syndrome, first described in relation to warfare, in which prolonged occupational stress causes emotional depletion and detachment (Fruedenberger 1974). It has been defined in terms of emotional exhaustion, depersonalization and a sense of reduced personal achievement (Glass et al. 1996; Hotopf et al. 1997; Maslach 1987). It may also present as depression, high absenteeism and sickness rates, drug and alcohol dependence or chronic physical complaints. Occupational stress and burnout are therefore important for the individual, and for work productivity and efficacy.


### Incidence and Importance

Occupational stress and burnout are common to all occupations and professions. Around 20% of individuals report high levels of stress at work, rising to over 40% for some occupations (AWIRS 1995; H&SE 2000). There is some evidence that this is an increasing problem (Croft et al. 2000; European Commission 2002; McCormick et al. 1995; Moncrieff et al. 2000; Stewart-Brown et al. 2000; Worrall et al. 2001). However, it is difficult to judge from these surveys whether this represents a more stressful work environment or the phenomenon of 'getting better but feeling worse' – a greater willingness to admit to stress, a diminished capacity for coping and a rise in expectations, despite improved social circumstances and better public health over the past century (Anon 1909; Barsky 1988; Verbrugge 1984). Indeed, some commentators have provocatively suggested that an excessive focus on stress may increase the problem and that the best approach might be to ignore it (Wessely et al. 2001). Common experience would suggest that some degree of stress is required for creativity and personal achievement. How various stressors result in burnout is, therefore, complex, involving interactions between individuals and the context in which they function: their work and home, their personality and coping strategies, their external supports and the nature of the stressor itself.

**Causation and Models**

Common associations with burnout include high psychological demands in the workplace combined with low control over work processes (Tennant 2001), illustrated by the Karasek model (Karasek 1979; see figure 1) and measured by the Maslach Burnout Inventory (Maslach 1986), a 22-item questionnaire with subscales for emotional exhaustion, depersonalization and lack of personal accomplishment. Job insecurity and long hours are important contributing factors (International Survey Research 2000; Worrall et al. 2001). Attribution is complicated by reciprocity between work and social environment, differences between symptomatologies and individual responsiveness to contextual factors, and by the concept of normality – a benchmark against which stress and the outcomes of stress can be compared. This is an important issue for employers both in terms of staff welfare and potential litigation.

**Stress in Healthcare Workers**

Nurses appear to be more susceptible to stressrelated disorders than the general population: a UK study found a relative risk of 1.5, more marked in front-line staff, especially women (Wall et al. 1997), who often have greater demands placed on them in achieving a balance between home and work (International Labour Organisation 2001). For doctors, there are differences determined by seniority (level of experience) and speciality, but the pattern of stressors can still be summarized as excessive work demands, inadequate control over work processes and work interference with home life (Cooper et al. 2000; Johnson 1995; Kapur et al. 1998; Revicki 1993; Rout et al. 1996). Doctors are also susceptible to alcohol and drug addiction, a common stress-related illness (McCarran 2003); figures for the USA suggest that up to 13% of doctors may have an addiction (Hughes et al. 1992).

The UK's recently established National Clinical Assessment Authority (NCAA) has reviewed 1,772 doctors, comprising 0.7% of the National Health Service's physician workforce, about whom performance concerns had been raised (Chief Medical Officer 2006). Of these, 10% required a full assessment. Of the first 50 cases so assessed, physical or mental health problems were identified in 28%, poor communication with colleagues in 76% and inadequate training or suboptimal continuing professional development in 48% (National Clinical Assessment Service).

**Burnout in Intensive Care**

Intensive care units (ICUs) are high-stress areas for patients, relatives and staff. Staff must contend with constant pressure on limited resources, rapid and usually irreversible decisions (e.g. rationing) and high mortality rates – not dissimilar to a theatre of war in some respects. Such severely ill patients require expert care from fully trained intensivists (Health Resources and Services Administration 2005); however, in the USA, the Committee on Manpower for the Pulmonary and Critical Care Societies (COMPACCS) study projected a growing shortfall of intensivists unless changes are made to increase the number of physicians trained in critical care (Pingleton et al. 2001). Young and Birkmeyer (2000) estimated that 360,000 deaths occur every year in ICUs that are not managed by intensivists, and that intensivist staffing might save 54,000 lives annually. Retention, training and supporting critical care staff will be essential for any hospital which hopes to retain its status as an acute admitting facility.

We searched MEDLINE and EMBASE for Englishlanguage publications (1996 to January 2007) on burnout and related terms, and linked these to critical care. From a large number of articles, we found nine citations linking doctors with intensive care and burnout, and 68 for nursing staff. Of these, 55 provided useful material: 3 were case reports, 8 review articles, 2 editorials, 40 surveys, and 2 articles on management and retention of staff (for a complete list, please contact editorial@icu-management.org).

**Nature of the Problem**

Occupational stress is more common in females than males (Fields et al.1995), younger, single or divorced nurses, and those working full-time (Chen et al. 2001). In doctors, stress is more likely to affect residents (Guntupalli et al. 1996; Thomas et al. 2004) and less experienced doctors (Nyssen et al. 2003). Personality, life-style intentions, isolation and coping mechanisms influence resilience to stress (Gopal et al. 2005; Lederer at el. 2006; Lorin et al. 2005; Wright et al. 1993). Long hours of work have a variable effect: some report an increase in stress with long hours (Fletcher et al. 2005), others little effect (Goitein et al. 2005; Martini et al. 2004). Lack of control over work (Hever et al. 1996; Poncet et al. 2006), conflicts, patient deaths (Poncet et al. 2006), isolation, compromised standards of care, management styles (Coomber et al.; Doering et al. 1990) and burnout affecting colleagues (Bakker et al. 2005) all have an impact. Workplace violence (Alexy-Eileen et al. 2006) and bullying by senior managers substantially reduce reported job satisfaction (Quine et al. 1999). Staff working in burn ICUs (De Pew et al. 1999; Murji- Ally et al. 2006) and medical ICUs (Cubrilo et al. 2006; Pelosi et al. 1999) may be more at risk for burnout than other ICU personnel.

**Impact on Patients**

A case report by Shojania et al. (2006) and reviews by others (Gawron et al. 2006; Goitein et al. 2005; Penson et al. 2000; Tillett et al. 2003; West et al. 2006) illustrate how high workload, poor supervision and inadequate teaching time lead to medical errors and suboptimal patient care. There is a complex interplay between these factors: high anxiety levels impair performance and increase error rates (Smith et al. 2001), while self-perceived medical errors worsen aspects of burnout, including anxiety (West et al. 2006). Surgical specialists are less likely to function as team-players and more likely to deny the effects of stress than anaesthetic consultants, residents and nurses (Sexton et al. 2000), despite the fact that recognizing the impact of stress reduces the likelihood of error (Helreich et al. 1984).

**Impact on Staff**

Cortisol levels increase with stress; however, the effect is less pronounced for more experienced ICU staff (Fischer et al. 2000). Burnout increases resignations and early retirement (COMPACCS survey; Fields et al. 1995; Quine et al. 1999; Shanafelt et al. 2002), which in turn affects ICU staffing patterns. Long working hours increase the risk of car accidents or near-miss incidents (Barger et al. 2005; Murray et al. 2005). The alternative of shift work may be no better (Murray et al. 2005).

Many staff are reluctant to admit to personal problems (Sexton et al. 2000; White et al. 2006), and may initially lack insight into the problem (Harrison et al. 2006). Symptoms may be worse for those at risk (Lederer et al. 2006): personnel with high workload (Lindfors et al. 2006), trainees (Chen et al. 2001; Oehler et al. 1991) and staff with sleep deprivation resulting from on-call duties (Lindfors et al. 2006).

**Methods of Amelioration**

Social support groups, bereavement teams and a supportive department are important elements in reducing stress (Heuer et al. 1996; Kerasiotis-Bernadina et al. 2004; Yam et al. 2001). Reduced working hours may diminish the risk of burnout (Gopal et al. 2005) and increase job satisfaction.

Variable benefits have been reported for didactic presentations on stress, constructive feedback and career counselling (Gardiner et al. 2004; Shanafelt et al. 2002). In addition, Lindfors et al. (2006) recommended shortening on-call periods and frequency, allowing more free time and removing oncall obligations after the age of 50 years as methods to reduce stress.

National Aeronautics and Space Administration (NASA) field studies have shown that short periods of sleep (a 40 minute nap) improve performance by 34% and physiological alertness by 54% (Rosekind et al. 1994). Teaching doctors how to cope with night work (methods of improving daytime sleep) can reduce medical error and improve safety (Murray et al. 2005), and physical exercise may be beneficial (Murji-Ally et al. 2006; Shanafelt et al. 2002).

How does this literature relate to critical care? It is evident that adequate staffing and resources, supportive and social colleagues and a collaborative, team-based approach to patient care will do much to minimize the stress associated with such challenging work. Hospitals with "problem" departments or clinics should look to their successful ICUs as models for improvement: if an ICU can be a happy place to work, it must be doing something right.

**Conclusions**

Occupational stress is common in all health care professionals, especially younger and less experienced staff. Burnout not only affects the care provider, but also the patient and the organization. Intensive care is a high-stress area, and given current staffing problems and the need for expert clinicians, this discipline requires a particular focus by management to minimize risk factors and promote well-being both at work and home. Healthcare staff need to be aware of the risk factors for burnout and work with management to create effective organizational processes and a supportive work environment to minimize those risks. The responsibility for minimizing the risks and incidence of burnout lies with each and every one of us.

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