EENA Operations Document

Psychological support of 112 call takers

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EENA Operations Document – Psychological support of 112 call takers

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1   Introduction

The objective of this Operations document is to describe the main issues related to the psychological aspects, needs and support of 112 call takers, to assemble relevant, currently available information about this issue, to outline some of the 'best practices' and evidence based interventions from a system-focused as well as a call taker-focused perspective and inspire further improvements in the systematic creation of a supportive working environment for call takers, whose performance pre-determines the quality and ultimate effectiveness of the potentially life saving 112 services.

2   Abbreviations and Glossary[1]

ALS or Advanced Life Support - is a set of life-saving protocols and skills that extend Basic Life Support to further support the circulation and provide an open airway and adequate ventilation (breathing).
AVL – automatic vehicle location
BLS or Basic life support - is the level of medical care, which is used for patients with life-threatening illnesses or injuries until the patient can be given full medical care at a hospital.
EC - European commission
EU – European Union
ICF - International Classification of Functioning
MS – Member states
PSAP - Public Safety Answering Points
UN - United Nations
WHO – World Health Organisation

3   Call taking from a psychological perspective

3.1   The role of the call taker – tasks and factors affecting performance

The emergency setting related to 112 call-taking brings a set of questions to the fore — how do workers in an emotionally charged setting, with features of vivid and interruptive experiences that possibly interrupt decision making, interact with standard operating procedures that are supposed to provide the necessary stability and support, so that recurring decisions can be made under similar conditions? How do the call takers relate to the emotional landscape of emergency call taking and the callers' emotional expressions? How do they cope with related stress? How do call takers make decisions, use intuitive and emotional capabilities to complement or challenge rational aspects of the available decision-support systems? How do they use rational and formal procedures as well as non-formal, intuitive and emotionally based, individual processes to make their decisions and how can they be effectively supported in the decision-making process? These questions require a reflection in an organisational context, in order to identify limitations to the development of situation-specific expertise, obstacles for organisational learning and tools for effective on-job call taker support.[2]

The 112 service chain defines the basic framework of tasks and thus the context, in which we can start searching for answers to these and other relevant questions - in modern dispatch systems, the call taker will fill a number of critical functions.[3] These functions are determined by and will vary in relation to the defined service chain at organisational level.[4]

The Emergency Alarm Sequence:[5]

> The response interval of the public:
> > 1) The incidence occurs

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[1]   All definitions of terms and acronyms related to 112 are available in the 112 Terminology EENA Operations Document   http://www.eena.org/view/en/Committees/112operations/index/generalframework.html

[2]   Source: *Svensson, Martin (2012), Routes, Routines and Emotions in Decision Making of Emergency Call Takers, Blekinge Institute of Technology, Doctoral Dissertation Series No. 2012:04.*

[3]   Source: http://en.wikipedia.org/wiki/Emergency_medical_dispatcher

[4]   Source: http://www.eena.org/ressource/static/files/2011_06_10_1_1_1_servchain_v1.0.pdf

[5]   Source: Castrén et al., 2008

2) The emergency call is made

The emergency response interval:
3) The call is answered by the service
4) A need is identified
5) A priority is decided
6) A response is defined
7) The response/resource is dispatched
8) Assistance may be given online if indicated
9) The call is terminated

In most systems, the telephone remains almost a singular point of access for those needing assistance, but the deployment of new alerting mechanisms such as public access defibrillators, personal safety alarms and vehicle monitoring systems represent new challenges for call takers processing incoming emergency calls at the PSAPs.

The responsibility of the call taker involves the triage of incoming calls, providing expert systematised caller interrogation, in order to determine the likely severity of the problem, illness or injury, so that the most appropriate type of response by emergency services is triggered. All calls are prioritised, in the case of injuries or illness by the medical symptom/condition acuity. This process may be further complicated by panic-stricken callers who scream, cry, or make unreasonable demands. The trained call taker uses interpersonal and crisis management skills to sort through these distractions, taking control of the conversation, calming the caller, and extracting the necessary information. This inquiry begins with the obvious questions regarding the situation or the patient. The questioning will continue until the call taker is able to qualify (a potentially life-threatening) condition, to which the closest appropriate response can be triggered, dispatching required emergency service's resources (such as a paramedic-staffed ambulance service, fire and rescue service or police units).

When this occurs, the call taker will continue the questioning, attempting to gather additional relevant information, useful to determine response speed, the type of resources dispatched, or the type of equipment that the rescue services units will bring to the site when they arrive. In most cases, this 'pre-alert' function will not be required, and the resource will simply be dispatched when all of the required information has been gathered. Ultimately, the decision on how to proceed, or when to interrupt the established process, requires the judgment of the call taker handling the call. Otherwise, the manner in which this questioning proceeds is often governed by protocols, or by decision-support software.

The third function, relevant in some selected cases (depending on the specific emergency services organisation and its service chain), is the selection and assignment of the most appropriate type of response resource, (such as an ambulance), from the closest or the most appropriate location, depending on the nature of the problem, and ensuring that the crew of the response resource receive all of the appropriate information. The call taker is responsible for the management and work assignment (in some cases physicians and supervisors provide the work direction) for all of the response resources in the system. In many cases, the call taker is responsible for managing multiple response resources simultaneously and providing first aid guidance (basic or advance life support) or other potentially live saving advice to the caller. This requires a constant level of awareness of the location and status of each resource, so that the closest available and appropriate resource may be sent to each call, but also effective communication skills, a sound knowledge base (training) enabling the call taker to provide active support to the caller facing an emergency.

The call taker is generally also responsible for providing information support to the responding resources. This may include call-backs to the call originator to clarify information. It may involve clarifying the exact location of the emergency/patient, or sending a bystander to meet the ambulance and direct paramedics to the patient. It may also include requests from the onsite rescue services crew to provide support resources, such as additional ambulances, rescue equipment, or a helicopter. The call taker also plays a key role in the safety of staff onsite. They are the first with the opportunity to assess the situation that the crew is responding to, will maintain contact on the scene in order to monitor crew safety, and are frequently responsible for requesting emergency police response to 'back up' paramedics when they encounter a violent situation. PSAPs are often responsible for monitoring the status of local hospitals, advising paramedics on which hospitals are accepting ambulance patients, and which are on 're-direct' or 'divert'. In many cases, they may also be responsible for notifying the hospital of incoming patients on behalf of the response resource crew.

Finally, the call taker ensures that the information regarding each call is collected in a consistent manner, for both legal and quality assurance purposes. In most jurisdictions, all records, including both patient care and dispatch records, and also recordings of dispatch radio and telephone conversations, are considered to be legal documents. Dispatch records are often a subject of interest in legal proceedings, particularly with respect to the initial information obtained, statements made by the caller, and response times for resources. The gathered information may be at some point demanded by a criminal court or civil court or a public inquiry and may have to be produced as evidence. It is not uncommon in some jurisdictions for call takers to be summoned to court, in order to provide evidence regarding their activities. As a result, there is frequently a legal requirement for the long-term storage of such information, and the specific requirements are likely to vary by both country and jurisdiction. As a direct result of these two factors, there is a requirement for all call information to be collected and stored in a regular, consistent, and professional manner, and this too, will often fall to the call taker, at least in the initial stages.

Multi-tasking is the central feature of call taking and dispatch work. Numerous factors and barriers can affect the realisation of these tasks, including decision-making under time constraints, quality of available support in management of resources and decision-making, effective communication, coordination, cooperation and mutual awareness within a broader team of involved specialists. As a result, the psychological factors at an individual level such as interpersonal skills, adaptive behaviour and coping strategies play an important role.[6]

Decision Making in Emergency Settings

Making fast decisions at the same time as making complex analytic decisions may imply quality tradeoffs. Moreover, fast and analytic decision making draws on different assumptions of how information is processed. Even though reason-based and non-reason-based conceptualisations may be grossly oversimplified depictions of these phenomena, they have earned attention across research programs (cf. Kahneman, 2003; Sloman, 1996) and it has also been brought up in the emergency room context (cf. Coget & Keller, 2010).[7]

Decision-making can be hampered and stress-levels increased by lack of available resources and institutional support (call overload, insufficient staffing, decisions about priority status, shortage of ambulances, precision imperative, absence of down time)[8] and these factors are more closely analysed in the section 4 of the document related to the ergonomics of the call taking.

3.2   Psychological aspects of emergency call taking

Emergency call takers listen to callers describing mundane problems but also to callers describing severe accidents, agony and deaths.

The emergency setting is further complicated by having to perform triage quickly, but without the possibility of seeing the patient. The setting rests on an imperative of speedy management—there is little possibility of postponing or reconsidering a decision. At the same time, the model of communication (telephone) may cause an overflow or lack of information, resulting in an uncertain and ambiguous decision-making setting.

Thus emergency call takers need to possess multiple competencies in terms of medical, technical, and emotional skills but also have access to continuous education (training) and psychological support. A Swedish study[9] described the setting of emergency call taking as an uncertain setting, filled with communication difficulties and insufficient resources.

Further related research found that individual skills, knowledge, experience, sensitivity, insight, empathy and intuition helped bridge the difficulties related to the call taking tasks.[10]

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[6] Source: Julie Dudgale, Bernard Pavard, Jean Luc Soubie, The Ergonomic Analyses of an emergency call centre and the subsequent design of a computer based simulation

[7] Source: Svensson, Martin (2012), Routes, Routines and Emotions in Decision Making of Emergency Call Takers, Blekinge Institute of Technology,Doctoral Dissertation Series No. 2012:04.

[8] Source: Frontline stress behind the scenes: Emergency medical dispatchers www.tema.ca/Dispatcher_Stress.pdf

[9] Source: study conducted by Forslund, Kihlgren and Kihlgren (2004)

[10] Source: Svensson, Martin (2012), Routes, Routines and Emotions in Decision
  Making of Emergency Call Takers, Blekinge Institute of Technology, Doctoral Dissertation Series No. 2012:04.

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The tasks of the call taker consist of interconnected processes, administered in a cooperative work situation, with an awareness of dealing with clients in potentially life threatening situations, which ultimately results in an increased sense of responsibility and higher pressure to perform.

Processing of an emergency call requires a sequence of complex cognitive, emotional and behavioural reactions by the call taker collecting key information about the emergency, often in an emotionally and socially complex situation. The situation analyses require a process of synthesis, abstraction, specification and prioritization of acquired information in the context of a decision-making process.

A seemingly simple task of call taking requires a fast, effective and flexible coordination of mental processes. Each call places a rather high demand on the exact perception of the sensory systems (mainly hearing and sight), good coordination of sensory perception and fine motor skills, which are used in listening and the parallel work with the computer, concentration and quick division of attention, spatial orientation (in working with maps), imagination, ability to memorise quickly, the ability to differentiate heard facts from own interpretations. Synthetic and analytical thinking as well as logic are required for the mentioned tasks.

The task of call taking integrates several professions and places high demands on the mental processes, condition and personality of the call takers. The complexity factors of the call taker tasks [11] can be divided into 3 groups:

1. mental workload and decision-making, based on possibly unreliable information, potentially conflicting requirements, realising activities with potentially damaging effect on other people, the employer (own organisation) or the call taker,
2. interpersonal complexity, due to the necessity of obtaining trust and cooperation of various agents (stakeholders), emotional distress,
3. demand factors related to time and energy, especially related to tasks with very limited time available for their completion and limited or no space for correction of mistakes.

Stress factors in call taking can include:

1. feelings of helplessness in critical situations with limited ability to influence the situation of the caller facing an emergency and emotional strain of extreme situations (such as incidents with children dying, mass emergencies and incidents with many severely injured, incidents involving own family members),
2. competing demands for executing rapid and precise assessments while working with a limited environment in relation to the decision-making autonomy and information availability, with constrained decision-making capacity by working within a frequently unsupervised, non-visual access environment, relying on secondary (potentially inaccurate) information delivery, (a common experience is "being reprimanded for dispatching too little or too much help"), [12]
3. frequent emergency line abuse, conversational difficulties with callers with limited capacity for conveying accurate information, complicated by rapidly shifting features of the emergency scene,
4. frequently disrupted functioning of support systems (such as communication lines, call centre software) without back up options, outdated equipment
5. lack of necessary resources (such as ambulances) available to be deployed to an emergency,
6. problems in the organisation of work, overload of tasks, perceived inadequate working conditions, perceived inadequate remuneration, compromised work place relationships, physically confining and isolating workspace (and the resulting inability to relieve stress physically and socialise with colleagues) and lack of available quiet space,
7. inadequate formal training and preparation for tasks and the arising insecurity and problems in decision-making,
8. enduring lack of public acknowledgment for the work of emergency call takers (media attention is usually focused on rescue units onsite) and the resulting less robust social support (demonstrated for example by negative citizen responses) as well as perceived underestimation of the degree of stress that dispatchers face and lack of recognition in the part of management (sometimes based on the assumption, that call taker-dispatcher stress is negligible to paramedics or other onsite rescue services staff stress).

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[11] Source: Herbert in Hladký, 1993, Slovakia
[12] Source: Frontline stress behind the scenes: Emergency medical dispatchers *www.tema.ca/Dispatcher_Stress.pdf*

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Literature on occupational stress among emergency personnel emphasizes the direct contact with distress, injury, violence and death as central causes of stress.[13] The tension between competing exigencies of call takers (dispatchers) to act instantaneously while simultaneously not overstepping decision-making power, combined with inadequate resources contribute to escalating powerlessness and cumulative stress levels. [14] The sense of responsibility is complicated by their role as intermediaries between the distressed, frequently panicked and incoherent public and paramedics.

Based on these factors and research results[15] its possible to conclude, that the work of emergency call takers represents a set of complex tasks, challenging the endurance of call-takers and carry along relatively high stress factors and thus a risk of burnout.[16]
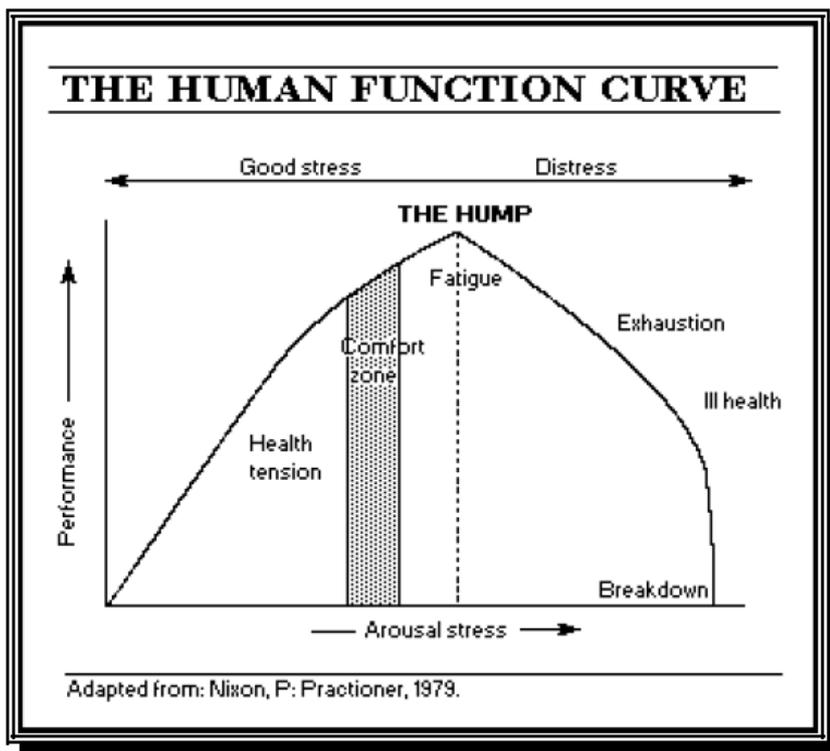
As illustrated on the left, increased stress results in increased productivity – up to a point, after which things go rapidly downhill.
However, that point or peak differs for each of us, so one needs to be sensitive to the early warning symptoms and signs that suggest a stress overload is starting to push him/her over the hump.
Such signals also differ for each individual and can be so subtle that they are often ignored until it is too late. Not infrequently, others are aware that one may be headed for trouble before the affected person. [17]

Given the demands of the job, the common experience is that call takers are being much more comfortable providing help than requesting it or making use of it once it's offered. Therefore it is recommendable to include relevant topics such as recognition of signs of depression and burnout but also the difference between critical incidents related stress and cumulative stressors which are characteristic of the call takers' daily work environment into the formal training programme.

In order to avoid unwanted impact on human resources and institutional capacities, these identified stress factors require systematic attention at institutional level of PSAPs. In an ideal setting, they should translate to the development, implementation, evaluation and maintenance of stress management programmes in work settings (of the PSAPs), with a clearly defined purpose of the programme, delineated individual and organisational goals and defined mechanisms of organisational support to the programmes, which are to be integrated into existing occupational health and safety strategies.

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13 Source: Jenkins 1997
14 Source: Frontline stress behind the scenes: Emergency medical dispatchers www.tema.ca/Dispatcher_Stress.pdf
15 Source: Research conducted by Baštecka, 2005; Šeblova,2005 and Franěk, 2005, Slovakia
16 Source: Katarina Cajkovicova, Psychological load and stress in EMS call takers, Trnava 2008, Slovakia
17 Source: http://www.stress.org/topic-definition-stress.htm

Stress management methods at individual level can include methods like muscle relaxation, meditation, biofeedback and cognitive strategies, taught to employees as a means of reducing psycho-physiological and subjective distress providing the individual with skills for recognising and coping with work related stress.[18]

The Croatian experience shows that call takers should be qualified to manage the stress to which they are exposed. It is important for every call taker to have a psychological baseline data (psychological test results). In Croatia, once a year, testing of call takers is conducted to determine how they manage with stress. They are taught different relaxation techniques that can be applied at work and at home. Quality supervision is significantly affected by the reduction of stress. The Croatian PSAP management recommends, based on gained experiences, conducting analyzes of the impact of stress on the call takers after each demanding stressful event in the presence of a psychologist and that each centre 112 should have a Stress management plan. Psychologist should also be available to each call taker.

The development of stress management programmes at (PSAPs) institutional level should be based on a complex analyses of the exposure of employee target groups (such as call takers) to stress factors in the defined settings and task context, the work setting ergonomics and result in comprehensive actions, embedded in the institutional human resources management strategies.[19]

3.3   Psychological load in the work performance of emergency call takers

The role of the 112 call takers and dispatchers is critical to the outcome of emergency calls and thus the psychological load related to their work performance requires systematic attention. If we assume the psychological load refers to the subjective (mental and emotional) responses of employees (call takers) to the requirements of their job, the level of this load depends on the difficulty of task, the impact of both the internal and the external working environment and individual capabilities. [20]

112 call takers are exposed to various factors increasing the psychological load of their work including:
- The essence of their tasks, processing dozens of emergency calls per working shift, carrying legal responsibility and the resulting increased pressure not to make mistakes;
- Work place related factors like noise, inadequate circulation of air, work place set up;
- Socio-pathological factors in social interaction, conflicts and frustrating experiences with callers (for ex. abusing the emergency line and thus increasing the work load of call takers, abusive, intoxicated or vulgar callers) or with team members (with conflicting agenda or expectations, such as frequent and/or inadequate questioning the relevance of the call takers dispatch decisions by rescue units crews sent onsite);
- Limited or no availability of adequate outlets for the expression of difficult emotions, effective, proximal and non-intrusive supervision as well as lack of social support in general.

Individual capabilities, including motivation, and the ascribed value to the role/performed tasks influence performance, both in positive and negative ways.[21]

3.4   Most common psychological problems of call takers
Given the unique features of call taking (dispatch) work as compared to paramedic work (e.g. its status as the first point of entry for emergency calls; its role as the conduit for information between civilians and emergency workers; its limited intervention status and its sedentary nature), there are implications for both empirical explorations of call taker stress and intervention development.

Despite the numerous similar stressors faced by both paramedics and dispatchers, chronic and/or traumatic stress may be experienced differently in the context of dispatch work. For instance, while paramedics might struggle with lingering visual images from a difficult call, call takers might be left with auditory reminders. That is, involuntary recollections resulting from calls might take the form of auditory reverberations.

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[18] Source: Job related stress, http://www.cdc.gov/niosh/pdfs/87-111.pdf
[19] Source: Stress management in work settings, DHHS (NIOSH) publication n.87-111
[20] Source: Gawel G. Analyses of psychological workload in nursing positions, In: Ksykiewicz-Dorota A., editor, Management in nursing, Lublin 2005, p.434-8
[21] Source: Timko, 1986, Slovakia

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Moreover, visual images that may be elicited by listening, in the absence of verifiable visual information, may lead to different symptoms and may require different intervention possibilities. A recent unpublished UK project comparing paramedics and call takers (dispatchers) has begun to explore some of these issues. Similar levels of intrusive visual imagery were reported by dispatchers and paramedics, and dispatchers who presented with post-traumatic symptoms exhibited false visual re-experiencing symptoms[22]. Notably, visual imagery ability was a moderator of the relationship between post-traumatic symptoms and call-related visual imagery among dispatchers in particular. This suggests potential differential intervention pathways for paramedics versus dispatchers.

The lack of control imposed by the call taking (dispatch) role in providing on-the-scene, hands-on help, may also elicit a specific type of second-guessing about decision accuracy or sense of helplessness that may be different from the kind of struggles paramedics report in relation to retracing their decision-making for a call.

Moreover, the self-selection process that might be operating in choosing to become a paramedic versus a dispatcher may also have implications for how emergency work-related stress is experienced and managed. Although some have performed both roles at different points in their career, for the most part these are discrete positions.[23]

3.5   Individual coping strategies

The difference between experiences that result in stimulating stress and those that result in distress is determined by the disparity between an experience (real or imagined) and personal expectations and resources to cope with the stress. Reactions to call taker load and stress can be adequate, inadequate or pathological and can, under certain circumstances, result in acute stress reaction, post-traumatic stress disorder or burn-out syndrome.

Call taker coping strategies in disaster management context[24]

Disasters may range from severe to minor and having an awareness of the potential deployment environment, conditions, duties, and constrains (including possible limits to the ability to communicate to or assist own family members) can prepare a call taker to cope more effectively in these mentally challenging situations.

The working conditions in a disaster area may vary depending on the type of disaster, the length of time that has passed since the disaster, and the magnitude of the emergency response effort. The nature of the disaster deployment and the role assumed by the call taker will vary, as will the degree of coping skills necessary to overcome stress and fatigue. Stress and fatigue may easily progress to depression and, in some cases post-traumatic stress disorder.

Research into the coping strategies used by and found effective by emergency responders has generally focused on law enforcement and fire department responders. An important factor related to call takers is their dynamic working conditions, with adaptability and flexibility identified as the key considerations in working effectively in disaster areas.

Nevertheless, research has found the following general strategies have been effective in relieving and preventing stress in disaster management context: [25]

- <u>Sleep/work schedule</u> – Maintain these schedules as best as possible. If you are "off" take advantage of the time to rest, exercise, or to otherwise relax.
- <u>Nutrition</u> – Eat at regular intervals and eat healthy to the most extent possible.
- <u>Exercise</u> – Walk or engage in some other form of exercise to "de-stress".
- <u>Avoid Alcohol/Drugs</u> – These not only jeopardize job performance, but also increase stress after intoxication.

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[22] Source: Bevan & Wild, 2007

[23] Source: Frontline stress behind the scenes: Emergency medical dispatchers www.tema.ca/Dispatcher_Stress.pdf

[24] *Source: Disaster Preparedness for TERT Members - Participant Guide v5.0*

[25] Source: Keane, T.M. & Piwowarczyk, L.A. (2006). *Trauma, terror, and fear: Mental help professionals respond to the impact of 9/11 – an overview.* In L.A. Schein, H.I. Spitz, G..M. Burlingame, and P.R. Muskin (Eds). Psychological effects of catastrophic disasters. Binghamton, NY: Haworthpress.
Beaton, R., Murphy, S., Johnson, C., Pike, K., & Cornel, W. (1999). Coping responses and posttraumatic stress symptomatology in urban fire service personnel. *Journal of Traumatic Stress, 12*(2), 293-308.
McCammon, S., Durham, T.W., Allison, E.J., & Williamson, J.E. (1987).

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- Humour – The use of humour is often a natural expression to relieve stress and to make the best of a situation. However, there may be times when humour is inappropriate.
- Breaks – Take adequate breaks with your team and other call takers. The diversion from work and the opportunity to talk with others in a similar situation will help relieve stress.
- Think About Other Things – Take a "mental vacation" and think about non-work-related and pleasant events.
- Take a Deep Breath and Relax – Take a deep breath and remember you have the strength, training, and experience to handle the situation. If you act calm, you will start to feel calm.
- Remember, It Could Be Worse – Regardless of how bad things may seem, it could always be worse. As a result, this perception may enable you to reduce the stress and to appreciate the situation better.
- Talk to Others – Talk to others in your team or from the PSAP. Discuss what has occurred, what is occurring, and what will happen.
- Out of Place, Out of Mind – Some people deal with stress better alone and by withdrawing from others, while others may need to talk to someone. Others can simply ignore the current situation and dedicate their efforts to helping more.

Professional and Peer-Assistance

Depending on the nature of the deployment and disaster, the emotional impact of active engagement in disaster management may necessitate professional and/or peer assistance. Under some disaster related circumstances, it might be necessary for call takers to assist another temporary, alternate, or permanent PSAP when assistance is needed and this represents an extra challenge. The mental preparation for disaster deployment is an integral component of pre-deployment. The ability to recognize the characteristics of disaster areas and the associated stress typically resulting from working in these areas, as well as different coping strategies can have a significant impact on a call takers ability to function in a disaster area.

Changes in sleep, appetite, relationships, recurring dreams, or other indicators of depression may be signs of long-term emotional trauma and should be seen as signals to seek support. The long-term consequences for failing to seek help, if necessary, can lead to a number of physical and mental illnesses. Unfortunately, rescue services professionals (including call takers) are often very independent and rarely acknowledge the need for help.[26]

3.6 Psychological intervention possibilities

Most commonly used tools of intervention include:

- **Critical Incident Stress Management**, which is an intervention protocol developed specifically for dealing with traumatic events. It is a formal, highly structured and professionally recognized process for helping those involved in a critical incident to share their experiences, vent emotions, learn about stress reactions and symptoms and given referral for further help if required. It is not psychotherapy. It is a confidential, voluntary and educative process, sometimes called 'psychological first aid'. First developed for use with military combat veterans and then civilian first responders (police, fire, ambulance, emergency workers and disaster rescuers), it has now been adapted and used virtually everywhere there is a need to address traumatic impact in people's lives. [27]

There are several types of Critical Incident Stress Management interventions that can be used, depending on the situation. Variations of these interventions can be used for groups, individuals, families and in the workplace and include:

Debriefing is a proactive intervention involving a group meeting or discussion about a particularly distressing critical incident. Based on core principles of crisis intervention, the CISD is designed to mitigate the impact of a critical incident and to assist the persons in recovery from the stress associated with the event. The CISD is facilitated by a specially trained team which includes professional and peer support personnel. Also called Critical Incident Stress Debriefing (CISD). Ideally it is conducted between 24 and 72 hours after the incident, but may be held later under exceptional circumstances.

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[26] Source: Kilburg, R.R., Nathan, P.E., & Thoreson, R.W. (1986). *Professionals in distress*. Hyattsville, MD: APA.
[27] Source: http://www.criticali ncidentstress.com/what_is_cism_

Defusing is an intervention that is a shorter, less formal version of a debriefing. It generally lasts from 30 to 60 minutes, but may go longer and is best conducted within one to four hours after a critical incident. It is not usually conducted more than 12 hours after the incident. Like a debriefing, it is a confidential and voluntary opportunity to learn about stress, share reactions to an incident and vent emotions. The main purpose is to stabilize people affected by the incident so that they can return to their normal routines without unusual stress. Where appropriate, a formal debriefing also be required.

Grief and Loss Session is a structured group or individual session following a death and assists people in understanding their own grief reactions as well as creating a healthy atmosphere of openness and dialogue around the circumstances of the death.

Crisis Management Briefing is a large, homogeneous group intervention used before, during and after crisis to present facts, facilitate a brief, controlled discussion, Q & A and info on stress survival skills and/or other available support services. May be repeated as situation changes.

Critical Incident Adjustment Support provides multi-faceted humanitarian assistance to individual, families or groups for coping with the aftermath of an incident and overcoming the ongoing impact of a death or injury.

Pre-Crisis Education provides a foundation for CISM services. It includes incident awareness, crisis response strategies and develops stress management coping skills that can prevent major problems should an incident occur. It takes the form of an employee handbook, e-book and/or workshops and training seminars.

Individual crises intervention - while dealing with crisis, both personal and societal, there are five basic principles outlined for intervention. Those affected by crises are initially at high risk for maladaptive coping or immobilization, thus intervening as quickly as possible is imperative. Resource mobilization should be immediately enacted in order to provide them with the tools they need to return to some sort of order and normalcy, in addition to enable eventual independent functioning. The next step is to facilitate understanding of the event by processing the situation or trauma. This is done in order to help the victim gain a better understanding of what has occurred and allowing him or her to express feeling about the experience. Additionally, the counsellor should assist the victim(s) in problem solving within the context of their situation and feelings. This is necessary for developing self-efficacy and self-reliance. Helping the victim get back to being able to function independently by actively facilitating problem solving, assisting in developing appropriate strategies for addressing those concerns, and in helping putting those strategies into action. This is done in hopes of assisting the victim to become self-reliant. An example of an intervention program based on crises intervention principles is the **A**ssessment **C**risis Intervention **T**rauma Treatment (ACT) model of crisis intervention developed by Roberts as a response to the September 11, 2001 tragedy.[28]

- **Trainings, workshops**
  The potential benefits of crises related training include:

  - staff members becoming more confident in their ability to manage crisis situations, increasing their confidence as a team in handling crisis situations;
  - staff members and supervisors adopting a more consistent approach to callers in crisis, thus providing higher quality support/service;
  - staff members obtaining increased knowledge of crisis intervention and management techniques;
  - selected supervisory staff members obtaining basic and sophisticated techniques to conduct effective and long-lasting training programs, benefiting the human resources of the PSAP.

- **Peer and supervision support programmes**
  The concept of psychological support based on peer assistance is relatively new, and one which has developed from industrial settings. In essence, assistance is offered by a group of specially trained

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[28] Further reference to be found: Roberts, A. (2006). Assessment, crisis intervention, and trauma treatment: the integrative act intervention model. Brief Treatment and Crisis Intervention, 2(1), 1-22. A.R. Roberts, Crisis Intervention Handbook 2005 p.157

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employees so to assist their co-workers in coping with personal or job related problems. While peer support programs may seem similar to the earlier developed self help movement, in fact they are quite different. Peer support programs focus on everyday experiences of everyday typical people. The helpers are themselves employees who can relate to other employees of their common trade, profession or working environment. Peer support programs are preventative in their orientation and they encourage people to seek assistance in the early stages of a problem. Peer programs are ultimately based on the premise that people who experience a common circumstance or find themselves in a common predicament can, by virtue of their understanding, facilitate recovery in others. [29]

The mission of a peer support programme is to provide fellow PSAP personnel psychological and emotional support through pre-incident education, spousal/family support, on-scene support and demobilisation intervention, post-incident defusing or one-on-one interaction. The peer support team would/should be comprised of agency members who have been specially trained in crisis intervention and stress management techniques and who work in conjunction with mental health professionals who specialise in providing support to emergency service personnel. [30]

- **Mental health services**
  Like other members of the general population, emergency call takers (similar to first responders of onsite rescue services) may have pre-existing mental health conditions that are exacerbated by emergencies or they may develop new mental health conditions as a result of constant exposure to emergencies. Yet, the emergence or aggravation of mental health conditions may occur at higher rates when compared to the general population, because of the stresses associated with their duties. [31] If emergency call takers have access to mental health screenings, they may be more likely to receive timely diagnoses and treatment. Therefore, mental health screening should, ideally, be offered, especially after exposure to situations or emergencies perceived as potentially traumatising for those involved.

The barriers to such resource utilization may stem both from perceived or actual stigma associated with revealing specific symptoms such as anxiety, depression or intrusive thoughts and from a belief that their disclosure would undermine one's ability to perform the job.[32] Research results advocate for integrated models for dealing with occupation stress that addresses both personal and organisation features. Rather than viewing stress management as an individualized, privatized problem of the employee, coping can be conceptualized as an organisational or joint venture. [33]

This approach is also compatible with the finding that resilience in response to even deeply disturbing events is the rule rather than the exception for the majority of individuals. [34] It is important to underscore, however, that this propensity for natural recovery can be either facilitated by appropriately-timed and calibrated, supportive responses or undermined by their absence. Intrusive interventions or those incongruent with the recipient's needs may be potentially even more damaging than the doing nothing.[35]

Work-related stress can be both exacerbated and mitigated by institutional factors. Issues such as decision-making latitude, scheduling, stress-leave policies, and peer and management support repeatedly emerge as central and frequently outweigh concerns over specific critical incidents[36]. The organisational structure can, thus, be appropriately galvanized to build prevention and intervention approaches that foster both individual and organisational resilience.[37]

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[29] Source: http://www.kingcounty.gov/healthservices/health/ems/community/~/media/healthServices/publichealth/docum ents/ems/peer_support_development.ashx
[30] Source: A guide for developing a peer support programme, www.kingcounty.gov/health
[31] Source: S. DeWolfe, Field Manual for Mental Health and Human Service Workers, DHHS Publication No. ADM 90-537 (2000)
[32] Source: McCammon, Durham, Allison, & Williamson, 1988
[33] Source: Fineman, 1996; Newton, 1995
[34] Source: Bonanno, 2004
[35] e.g., Lilienfeld, 2007; McNally, Bryant, & Ehlers, 2003
[36] e.g., Beaton & Murphy, 1993; Bevan & Wild, 2007; Shuler, 2001
[37] Source: Frontline stress behind the scenes: Emergency medical dispatchers www.tema.ca/Dispatcher_Stress.pdf

4 Ergonomics of call taking

4.1 Call taker perspective

The profession of call takers is being taken up by staff with varying educational profiles across Europe. Scope of experiences, the knowledge base and professional skills of a call taker have a direct impact on the performance of the complex set of tasks and the quality of support provided to the callers and rescue services involved in intervention.

Their tasks are carried out in a sheltered environment of (restricted access) call centres with special regime and 24h/365 day per year operations. They work in 8 or 12 hour shifts, followed by a defined period of rest (which varies from 12, 24 to 48 hrs). According to general experience (data collected in research activities in Slovakia), the defined periods of rest are often shortened due to participation on educational activities, other jobs or overtime needs due to other staff illnesses.

According to some studies[38] addressing the relation between the length of the working shift and performance indicators, it is not generally recommended to exceed an 8 hours shift of call takers, as 40 working hour weeks showed lowest impact on absences, highest level of performance and employee satisfaction. The practice in defined length of call taker shift varies across European PSAPs. Breaks during working hours vary in length and frequency, according to the general experience they are rather short and tend to be sporadic.

The tempo of the task performance can not be defined by the call taker him/herself as it depends to a large extent on the frequency and type of emergency calls, specifics of the situation to be managed and the interaction of the call taker with the caller and other stakeholders involved in the response.

The most immediate work settings of the call takers are defined by the computer work station and the physical organisation of the emergency call centre (its operations room). The work station usually consists of an ergonomic chair and table, a computer station with multiple screens and specialized computer software, tele-and radio-communication equipment, hard copy manuals and maps.

According to research the call takers most often complain about problems associated with increased noise, long-term use of headsets, swelling feet due to lengthy sitting and complicated interaction (communication) with other team members due to the working stations placement.[39] Thus call centre ergonomics are another crucial factor determining the well/being and performance of call takers.

4.2 Call centre ergonomics

Call centres have a unique working environment characterised by working practices that can present hazards, and systems of work that differ from those of other computer-based office jobs and can potentially influence the wellbeing and performance of call takers. Creating an ergonomically correct call centre can help workers avoid such discomforts and injury. Ergonomics can be used to improve the well-being and productivity of workers by ensuring that workstations and work methods are designed to meet their needs and capabilities and thus conducting ergonomic analyses of the emergency call centre and addressing potential hazards and risks systematically is highly recommendable.

Ergonomics match the task, tool and environment to fit the needs of people and the work they do, with the endeavour to adapt the working environment to the anatomical and physiological requirements of the body of a working individual by the utilization of all available measures. The performance of ergonomic analyses for workplaces is justified by the fact that the safe and comfortable conditions for employees are required and crucial for their performance and thus the quality of provided services and ergonomic methods and techniques are also applied in the rationalization of work processes. The obtained results can be used to facilitate the implementation of organisational changes in the PSAPs.

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[38] Conducted by Daniel, Pikala and co. (Slovakia)
[39] Survey conducted by Branikova, Beňuškova, Sopka, Heretik jr., Slovakia 2007

Psychological load together with fatigue resulting from physical discomfort are important factors of work performance. [40]Call centre workers usually need to sit for extended periods of time doing several tasks on the computer and phone. The advent of technology in call centres has brought speed and accuracy, however, with all its benefits, technology in the call centre can also take a toll on workers in the form of physical ailments, such as muscle soreness, lower back pain, eye fatigue and more serious conditions like repetitive strain injuries (such as the carpal tunnel syndrome) and work stress related psychological problems.[41]

4.3   Policy context

Basic framework is provided by the national legal frameworks (such as Occupational Health and Safety Acts) and human resources management standards, setting out the legal and institutional obligations for various parties (in particular, employers and employees) in the workplace.[42]   The purpose of the legislation is to prevent injury and illness in the workplace.

Examples of the regulations include the obligation of employers to ensure that:
* Sufficient workspace is provided to allow persons to work safely;
* Floors and surfaces are constructed and maintained to minimise the possibility of slips, trips and falls; and
* Persons are not hindered and able to move safely around a place of work.

In relation to employees:
* A safe workplace, and safe means of entry to and exit from the workplace
* Use of equipment, machinery or chemicals that are safe, when used properly
* A safe and healthy working environment, and safe and healthy methods and procedures (systems) for working
* Adequate information, instruction, training and supervision to be provided for all workers
* Adequate facilities and first aid for employees made available
* A process for consultation with workers
* Processes for identifying hazards, assessing risks and eliminating or controlling those risks put in place.

4.4   Potential Hazards

Any workplace may present hazards to a worker's physical and/or psychological health and safety. Although the following list does not address every hazard within call centres, it provides a framework for identifying and managing workplace hazards. Each workplace may present hazards unique to that workplace. It was developed through consultation with industry and a review of call centre literature, reflects the nature of the work carried out by call centre operators, the work environment of call centres, and workers compensation claims data. The list identifies factors that may give rise to hazards in the workplace, due to poor design or other causes. They include:

* Workstation design and ergonomics (including problems related to shared work stations)
* Working space
* Lighting
* Ventilation
* Telephone headset use
* Background noise
* Manual handling tasks (including repetitive keyboard tasks)
* Psychological environment.[43]

4.5   Risk management process[44]

The risk management process provides employers with the information they need to make decisions about how best to avoid or control the impact of workplace hazards. The process is comprised of a four-step cycle:

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[40] Szczurak T., Kaminska B., Szpak A. (2007), Estimation of the psychological load in the performance of nurses' work based   on subjective fatigue symptoms, Poland

[41] Source: Paul Allie, Call Center Ergonomics, November 1996 issue of Telemarketing & Call Center Solutions ©1996

[42] More information at http://unionsafe.labor.net.au/hazards/109106749528582.html#Heading28

[43] Source: http://unionsafe.labor.net.au/hazards/109106749528582.html#Heading28

[44] Source: http://unionsafe.labor.net.au/hazards/109106749528582.html#Heading28

1. Identification of hazards in the work place

   Hazards associated with call centres can arise in many broad contexts and can be related to:
   - Manual tasks (e.g. working postures, repetition and duration)
   - Work environment (e.g. workstation, psychological factors, lighting)
   - Noise (e.g. background noise, headset use)
   - Plant (e.g. equipment, machinery, appliances)
   - Substances (e.g. chemicals)
   - Energy (e.g. Electricity, electro-smog exposure)

   When looking for hazards employers should consider:
   - The suitability of workers' equipment and their work location
   - How people use equipment and materials
   - How people might be affected by noise, fumes, lighting, and other environmental factors
   - The potential for people to be hurt by equipment, machinery or tools
   - The potential for people to be affected by chemicals and other substances used in the workplace.

2. Assessment of risks

   Assessment is conducted to determine the likelihood of an incident arising from the identified hazard, and the severity (i.e. seriousness) of the outcome if an incident did occur.

   In assessing the risk, it is recommended to:
   - Review the available health and safety information relevant to the hazard
   - Identify the factors contributing to its risk, including:
     – The work environment
     – The capability, skill, experience and age of the people ordinarily doing the work
     – The system of work being used
     – Any reasonably foreseeable abnormal conditions
   - Identify what records are necessary.

3. Risk control

   This is achieved by deciding and applying what needs to be done to remove or control the risks to health and safety. Measures can include:

   - Elimination: In a call centre, excessive keying to record large amounts of data may give rise to the risk of musculoskeletal injury as a result of overuse of soft tissue in the neck, shoulders, back, hands and/or wrists. Employers may decide that this information can be entered in other ways that requires less keying, for example by using improved software design.
   - Substitution: Replace the hazard with a less hazardous option. For example, replace a work process, material or equipment. In a call centre, the chemical currently used to clean/disinfect headsets might be replaced with another cleaning fluid that gives rise to less risk than the current chemical being used.
   - Isolation/Engineering: Isolate the hazard from people by making changes to the work environment or practices so that exposure is minimised, or redesign equipment or work practices so that work can be done differently. For example, office resources such as photocopiers, printers and faxes may be creating excessive background noise affecting employees. The employer should relocate such office equipment to a separate area away from employees.
   - Administrative Controls: Reduce the risk by improved supervision, instruction, training, job rotation or adjusting rosters, etc. For example, employers should introduce regular breaks away from calls into call centre rosters to reduce the exposure of employees to risks of physical and psychological injury.

   In a call centre, you can apply 'substitution' to control 'prolonged static working postures' by redesigning the job and furniture or equipment to encourage changes in posture. This control measure should be supplemented by training (i.e. administrative control) to ensure employees have a good understanding of the risks associated with the identified hazard and how job redesign can control exposure to the risk.

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To ensure that control measures operate effectively, you should consider the following:

- Develop safe work procedures to ensure employees know how to do the job properly and safely
- Communicate and consult with employees and others about the control measures and the reasons for their implementation
- Provide training for employees, particularly where changes in work procedures occur as a result of the implementation of the control measures
- Supervise employees to verify that the control measures are effective and that they are following procedures
- Maintain the control measures to ensure their ongoing effectiveness. Also, specify review and maintenance procedures for the new control measures as part of routine work practices.

4. Monitoring and review of measures

Monitoring and review of the measures that were applied can be realised by consulting with employees to ensure they are working, and identify safer ways of doing things.

Here are some things employers need to consider when monitoring and reviewing control measures:
- Are they in place?
- Are they being used?
- Are they being used correctly?
- Are they working?

Hazards may change from time to time as the workplace and procedures change. Employers should thus set up a routine of periodic hazard checks (e.g. performing regular inspections and safety audits) and establish a date to review the entire risk management process. It is crucial to recognise the importance of organisational climate for both contributing to and mitigating the effects of occupational stress for emergency call takers. [45]
The emphasis on management and organisational features as significant and often more common sources of chronic stress than operational demand and acute stressful incidents is a further argument in support of systematic attention, focused on the workplace ergonomics and organisational management.

5   Challenges and issues for 112 services - Economic context

There is emerging evidence that emergency call takers (dispatchers) regularly experience a range of both daily stressors and critical incidents that are similar to those faced by their communications operator counterparts and other emergency frontline workers. They also report additional stressors that are specific to the nature and scope of their work. The occupational stress literature increasingly points to the centrality of organisational factors in both exacerbating and mitigating the effects of such stressors.

Given the individual and organisational costs, there is an urgent need to include this employee target group in empirical, theoretical and intervention efforts that address these issues. Suggestions drawn from research indicate that the organisational structure of PSAPs can be a powerful conduit for change in reducing distress and improving employee morale and performance and this is an important factor of institutional and economic sustainability of the 112 systems.[46]

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[45] Source: Frontline stress behind the scenes: Emergency medical dispatchers *www.tema.ca/Dispatcher_Stress.pdf*
[46] Source: Frontline stress behind the scenes: Emergency medical dispatchers www.tema.ca/Dispatcher_Stress.pdf

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6   EENA Recommendations to stakeholders

Recommendations for possible improvements at institutional/PSAP level [47]

The central question is what can be done to enhance support of the call takers, while the focal point for the organisation is the individual capability of conducting triage. The organisation thus seeks to help call takers by providing organisational routines, which are manifested in decision-support systems, to help them navigate this uncertain and ambiguous setting.[48]

Stakeholder	Action
Competent Authorities of Emergency Services	• Introduce non-intrusive supervision and peer support mechanisms at the PSAP • Enable participatory definition of performance targets for call takers • Establish a psychological intervention plan • Provide specially designed furniture, adjusted to emergency call taking specifics and ergonomic studies at PSAPs • Make stress management tools/programmes available • Establish risk management plans and critical incidents management support • Provide active support and focused psychological training for call takers • Ensure special security procedures are implemented to make the PSAP facility resistant to attack or threat, both physical and technological
Call takers	• Accept psychological support and training • Participate in the definition and setting of performance targets • Comply with security procedures • Actively developing own coping strategies • Provide feedback to management • Actively using decision-making support tools (protocols)

7   EENA Requirements

Requirements	
Employee safety checklist including ergonomic PSAP equipment	compulsory
Call taker supervision mechanisms	compulsory
Provision of psychological call taker training	compulsory
Provision of psychological call taker support	compulsory
System of critical incidents management support	compulsory

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[47] Source: http://mpdc.dc.gov/mpdc/cwp/view,a,1237,Q,547648,mpdcNav_GID,1554,.as
[48] Source: *Svensson, Martin (2012), Routes, Routines and Emotions in Decision Making of Emergency Call Takers, Blekinge Institute of Technology, Doctoral Dissertation Series No. 2012:04.*

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ANNEX

REFERENCES

- Alexander, D.A., & Klein, S. (2001). Ambulance personnel and critical incidents: Impact of accident and emergency work on mental health and emotional well-being. The British Journal of Psychiatry, 178, 76-81.
- Authors. (2007a). Interventions for critical incident stress in emergency medical services: A qualitative study. Submitted to Stress and Health.
- Authors. (2007b). Experience of critical incident stress and perceived need for intervention in emergency medical technicians. Manuscript in preparation.
- Authors. Emergency medical dispatchers rally resources to combat stress. Paper submitted for presentation at the 24th Annual International Society for Traumatic Stress Studies Meeting, Chicago, Il, November 13-15, 2008.
- Authors. Frontline Stress behind the Scenes: Emergency Medical Dispatchers. Paper presented to the Association of Public Safety Communications Officials. Toronto, Ontario, October, 2006.
- Authors. Frontline Stress behind the Scenes: Emergency Medical Dispatchers. Invited paper presented to Ontario Paramedic Association Conference, Niagara Falls, Ontario, September 18-20, 2007.
- Beaton, R. D., & Murphy, S. A. (1993). Sources of occupational stress among firefighter/EMTs and firefighter/paramedics and correlations with job-related outcomes. Prehospital and Disaster Medicine, 8, 140-150.
- Bennett, P., Williams, Y., Page, N., Hood, K., and Woollard, M. (2004). Levels of mental health problems among UK emergency ambulance workers. Emergency Medicine Journal, 21, 235-236.
- Bevan, A., & Wild, J. (2007). Imagery and PTSD in the ambulance service. Paper presented at the British Psychological Society's Division of Clinical Psychology Conference Annual Conference. December 13, London, UK.
- Bonanno, G. A. (2004). Loss, trauma, and human resilience - Have we underestimated the human capacity to thrive after extremely aversive events? American Psychologist, 59, 20-28.
- Bransford, J., Sherwood, R., Vye, N., and Reiser, J. (1986). Teaching and problem solving: Research foundations. *American Psychologist*, *41*, 1078-1089.
- Brown, J.M., & Campbell, E. A. (1991). Stress among emergency services personnel: Progress and problems. Journal of the Society of Occupational Medicine, 41, 149-150.
- Burke, T. (1995, October). Dispatcher Stress. FBI Law Enforcement Bulletin, October,1-6.
- Burke, T.W. (1991). The relationship between dispatcher stress and social support, job satisfaction, and locus-of-control (Volumes I and II). Unpublished doctoral dissertation City University of New York.
- Burke, T.W. (1993a). The correlation between dispatcher stress, burnout and occupational dissatisfaction. APCO Bulletin, February, 81-82.
- Burke, T.W. (1993b). The correlation between dispatcher stress, burnout and occupational dissatisfaction – second series. APCO Bulletin, March, 50-54.
- Burke, T.W. (1993c). The correlation between dispatcher stress and control. APCO Bulletin, April,39-41.
- Burke, T.W. (2005a). Computer aided dispatch (Vol. 1). In L. E. Sullivan & M. Simonetti (Eds.), Encyclopedia of law enforcement (pp. 87-89). California: Sage.
- Burke, T.W. (2005b). Dispatch (Vol. 1). In L. E. Sullivan & M. Simonetti (Eds.), Encyclopedia of Law Enforcement (pp. 137-139). California: Sage.
- Canadian Medical Association Journal, 168, 277-283.
- Carroll, J. M. (Ed.) (1995). *Scenario-based design: Envisioning work and technology in system development.*
- *Castrén, M., Karlsten R., Lippert, F., Christensen, E. F., Bovim, E., Kvam, A. M., Robertson-Steel, I., Overton, J., Kraft, T., Engerstrom, L., Garcia-Castrill Riego, L. (2008). Recommended guidelines for reporting on emergency medical dispatch when conducting research in emergency medicine: the Utstein style. Resuscitation, 79, 2, 193-197.*
- Clohessy, S., & Ehlers, A. (1999). PTSD symptoms, response to intrusive memories and coping in ambulance service workers. British Journal of Clinical Psychology, 38, 251-265.
- Crawford, J.R., Henry, J.D., Crombie, C., & Taylor, E.P. (2001). Normative data for the HADS from a large non-clinical sample. British Journal of Clinical Psychology, 40, 429-34.
- D'Angelo, C. (2006). The disconnect between ambulance communications and paramedic services in Ontario. Canadian Emergency News, Aug/Sept, 21-23.
- Doerner, W.G. (1987). Police dispatch stress. Journal of Police Science and Administration, 15(4), 257-261.

EENA Operations Document – Psychological support of 112 call takers

is a non-for-profit association

- Eliciting knowledge from experts: A methodological analysis. *Organisational Behavior and Human Decision Processes, 62*(2), 129-158.
- Figley, C.R. (1995). Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. New York: Brunner-Routledge.
- Fineman, S. (1996). Emotion and organizing. In S.R. Clegg, C. Hardy, & W.R. Nord (Eds.), Handbook of organisation studies (pp. 543-564). Thousand Oaks, CA: Sage.
- Forslund, K., Kihlgren, A., & Kihlgren, M. (2004). Operators' experiences of emergency calls. Journal of Telemedicine and Telecare, 10, 290-297.
- Gibbs, M., Lachenmeyer, J.R., Broska, A., & Deucher, R. (1996). Effects of the AVIANCA aircrash on disaster workers. International Journal of Mass Emergencies and Disasters, 14(1), 23-32.
- Gist, R. & Taylor, V.H. (2008). Occupational and organisational issues in EMS behavioral health. Unpublished manuscript.
- Gist, R., & Woodall, S. J. (1999). There are no simple answers to complex problems: The rise and fall of Critical Incident Stress Debriefing as a response to occupational stress in the fire service. In R. Gist & B. Lubin (Eds.), Response to disaster: Psychosocial, community, and ecological approaches (pp. 211-235). Philadelphia: Brunner/Mazel.
- Govindarajan, A., & Schull, M. (2003). Effect of socioeconomic status on out-of-hospital transport delays of patients with chest pain. Annals of Emergency Medicine, 41, 481- 490.
- Grand-Holsten, P. M. (1992). A descriptive study of the stress-related symptoms of public safety dispatchers. Unpublished master's dissertation. East Carolina University.
- Holzman, T. G. (1999). Computer-human interface solutions for emergency medical care. *Interactions, May/June*, 13-24. Jarke, M. (1999). Scenarios for modeling. *Communications of the ACM, 42*(1), 47-48.
- Idris, A.H.., & Roppolo, L. (2003). Barriers to dispatcher-assisted telephone cardiopulmonary resuscitation. Annals of Emergency Medicine, 42(6), 738-740.
- Imbens-Bailey, A., & McCabe, A. (2000). The discourse of distress: A narrative analysis of emergency calls to 911. Language & Communication, 20, 275-296.
- Jenkins, S.R. (1997). Coping and social support among emergency dispatchers: Hurricane Andrew. Journal of Social Behavior and Personality, 12(1), 201-216.
- Jones, R. E. T., McNeese, M. D., Connors, E. S., Jefferson, T. Jr., and Hall, D. L. *Proceedings of the 48th Annual Meeting of the Human Factors and Ergonomic Society*, Santa Monica CA: Human Factors and Ergonomic Society.
- Kirmeyer, S.L. & Dougherty, T.W. (1988). Work load, tension, and coping: Moderating effects of supervisor support. Personnel Psychology, 41, 125-139.
- Ksionzky, S. & Mehrabian, A. (1986). Temperament characteristics of successful police dispatchers: Work settings requiring continuous rapid judgments and responses to complex information. Journal of Police Sciences and Administration, 14(1), 45-48.
- Latter, R. (2003). Predicting burnout among emergency dispatchers: The role of coping strategies, vicarious trauma, and psychological distress. Unpublished doctoral dissertation. Alliant International University.
- Lilienfeld, S.O. (2007). Psychological treatments that cause harm. Perspectives on Psychological Science, 2, 53–70.
- Mann, S. (1997). Emotional labor in organisations. Leadership and Organisational Development Journal, 18, 6-14.
- Marmar, C.R., Weiss, D.S., Metzler, T.J., Ronfeldt, H.M, and Foreman, C. (1996). Stress responses of emergency services personnel to the Loma Prieta earthquake interstate 880 freeway collapse and control traumatic incidents. Journal of Traumatic Stress, 9, 63-85.
- McCammon, S. (1996). Emergency medical service workers: Occupational stress and traumatic stress. In D. Paton & Violanti J.M. (Eds.), Traumatic Stress in Critical Occupations: Recognition, Consequences and Treatment, (pp.58-86). Springfield, IL:Charles C. Thomas.
- McCammon, S., & Schmuckler, E. (1993). A descriptive study of stress-related symptoms of public safety dispatchers. Presented at the International Society for Traumatic Stress Studies, San Antonio, TX.
- McCammon, S., Durham, T.W., Allison, E. J.A., & Williamson, J.E. (1988). Emergency workers' cognitive appraisal and coping with traumatic events. Journal of Traumatic Stress, 1, 353-372.
- McNally, R. J., Bryant, R. A., & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? Psychological Science in the Public Interest, 4(2), 45-79.
- McNeese, M. D., Zaff, B. S., Peio, K. J., Snyder, D. E.,Duncan, J. C., & McFarren, M. R. (1990). An advanced knowledge and design acquisition methodology: and application for the pilot's associate (AAMRL-TR-90-060).

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- Mitchell, J. (1983). When disaster strikes...the critical incident stress debriefing process. Journal of Emergency Medical Services, 8, 36-39.
- Mitchell, J. (1984). The 600-run limit. Journal of Emergency Medicine Services, Jan, 52-54.
- Morris, J.A. & Feldman, D.C. (1996). The dimensions, antecedents, and consequences of emotional labor. The Academy of Management Review, 21(4), 986-1010.
- Newton, T. (1995). Managing stress: Emotion and power at work. Thousands Oaks, CA: Sage.
- NY: Wiley and Sons. Hoffman, R. R., Shadbolt, N. R., Burton, A. M., & Klein, G. (1995).
- Olynyk, C. Toronto Emergency Medical Services Steering Committee. Personal communication. October 16, 2007.
- Ørner, R.J., King, S., Avery, A., Bretherton, R., Stolz, P., Ormerod, J. (2003). Coping and adjustment strategies used by emergency services staff after traumatic incidents: implications for psychological debriefing, reconstructed early intervention and psychological first aid. The Australasian Journal of Disaster and Trauma Studies, 1.
- Patterson, B. (2005). Safety: A protocol priority. National Journal of Emergency Dispatch, 7(1), 21-23.
- Rentoul, R., and Ravenscroft, T. (1993). Managing post traumatic stress in the emergency services. Disaster Management, 5, 199-201.
- Rosson, M. B., & Carroll, J. M. (2002). *Usability engineering: Scenario-based development of human-computer interaction.* San Francisco CA: Morgan-Kaufmann Publishers.
- Salvo, M. J. (2001). Ethics of engagement: User-centered design and rhetorical methodology. *Technical Communication Quarterly, 10*(3), 273-290.
- Shepherd, M., & Hodgkinson, P.E. (1990). The hidden victims of disaster: Helper stress. Stress Medicine, 6, 29-35.
- Shuler, S. & Sypher, B.D. (2000). Seeking emotional labor: When managing the heart enhances the work experience. Management Communication Quarterly, 14, 50-89.
- Shuler, S. (2001). Talking community at 911: The centrality of communication in coping with emotional labour. In G.J. Shepherd & E.W. Rothenbuhler (Eds.), Communication and Community (pp. 53-77). Mahwah, New Jersey: Lawrence Erlbaum Associates Publishers.
- Schmuckler, E. (1991). Forgotten on the front line. In Unrecognized Trauma Risks: Duty/work Support Personnel. Symposium conducted at the meeting of the International Society for Traumatic Stress Studies, Washington, D.C. October.
- Schull, M. J., Morrison, L.J., Vermeulen, M., & Rederlmeier, D. A. (2003). Emergency department overcrowding and ambulance transport delays for patients with chest pain.
- Smith A., & Roberts, K. (2003). Interventions for post-traumatic stress disorder and psychological distress in emergency ambulance personnel: A review of the literature. Emergency Medicine Journal, 20, 75-78.
- Stein, M.B., Walker, J.R., Hazen, A.L., & Forde, D.R. (1997). Full and partial posttraumatic stress disorder: Findings from a community survey. American Journal of Psychiatry, 154, 1114-9.
- Steinglass, P. & Gerrity, E. (1990). Natural disasters and post-traumatic stress disorder: Short- term versus long-term recovery in two disaster-affected communities. Journal of Applied Social Psychology, 20, 1746-1765.
- Strauss, A. L. & Corbin, J. M. (1998). Basics of qualitative research: Techniques and procedures for developing grounded theory. Sage: London.
- Szczurak T., Kaminska B., Szpak A. (2007), Estimation of the psychological load in the performance of nurses' work based on subjective fatigue symptoms, Poland.
- Tesch, R. (1990). Qualitative research: Analysis types and software tools. London: The Falmer Press.
- Tracy, K., & Tracy, S.J. (1998). Rudeness at 911: Reconceptualizing face and face attack. Human Communication Research, 25(2), 225-251.
- Trauth, E. M. (2000). *The Culture of an Information Economy: Influences and Impacts in the Republic of Ireland*. Dordrecht: Kluwer Academic Publishers.
- Vaillancourt C., Verma A., Trickett J., Crete D., Beaudoin T., Nesbitt L., Wells G.A., Stiell I.G. (2007). Evaluating the effectiveness of dispatcher-assisted cardiopulmonary resuscitation instructions. Academic Emergency Medicine, 14, 877-883.
- van der Ploeg, E., & Kleber, R.J. (2003). Acute and chronic job stressors among ambulance personnel: predictors of health symptoms. Occupational and Environmental Medicine, 60 Suppl. 1), 40-46.
- Waldron, V.R. (1994). Once more, with feeling: Reconsidering the role of emotion in work. In S.A. Deetz (Ed.), Communication Yearbook (Vol. 17, pp. 388-416). Thousand Oaks, CA: Sage.
- Weaver, W.C. Jr. (1987). Stress and the EMS dispatcher. Emergency Medical Services, 16(7), 18-26.
- Weibel, L., Gabrion, I., Aussedat, M., & Kreutz, G. (2003). Work-related stress in an emergency medical dispatch centre. Annals of Emergency Medicine, 41(4), 500-506.

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- Wellens, A. R., & Ergener, D. (1988). The c.i.t.i.e.s. game: A computer-based situation assessment task for studying distributed decision making. *Simulation & Games, 19*(3), 304-327.
- Wild, J. King's College London. Institute of Psychiatry. Personal communication. November 21, 2007.
- Wright-Patterson Air Force Base, OH. Armstrong Aerospace Medical Research Laboratory.

Potentially helpful resources - Employer Safety Checklist for Call Centres[49]

This checklist is based on the potential hazards identified in the Guidelines. It is not a comprehensive list of all hazards within call centres.

If a box is not ticked, something should be done about that issue	**Tick if YES**

Training

Have employees been educated/trained to recognise poor ergonomic risk factors (i.e. awkward postures, repetitive and sustained movements, and forces) associated with Occupational Overuse Syndrome (OOS)?

Have employees been trained in the correct adjustment of workstation furniture to enable them to achieve neutral postures (as shown in Diagram 1)?

Chairs

Is the seat height adjustable for the range of users within the workforce?

From a seated position, can the height of the chair be easily adjusted?

From a seated position, can the backrest be easily adjusted for height and angle?

Is the seat pan width and depth adequate and comfortable when sitting?

Do employees' elbows avoid hitting the backrest and armrest (if provided) when performing their job?

Can the computer screen be adjusted for height and viewing distance from the seated position?

Desks

Is the desk height adjustable between 580mm & 730mm?

If 'no', is there a height adjustable chair and footrest available to achieve neutral postures (as shown in Diagram 1)?

Is the desk depth sufficient for the computer screen, keyboard, and document holder?

Is the desk wide enough for the task?

Is the top surface non-reflective?

Is there adequate leg space under the desk?

Other equipment

If necessary, do employees have the choice of using footrests to achieve correct lower limb postures?

If necessary, do employees have the choice of using document holders?

Telephone headset use

Is the background noise level low enough that operators do not have to turn up the volume of their headsets?

Are the operators' headsets free from sudden bursts of loud noise, such as line interference?

Are operators provided with individual headsets?

Is there a system of maintaining and exchanging faulty headsets?

Are the headsets cleaned on a regular basis, and cleaned prior to issuing to another operator

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[49]   Source http://unionsafe.labor.net.au/hazards/109106749528582.html#Heading28

EENA Operations Document – Psychological support of 112 call takers

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to avoid the spread of infections?

General

Are there clear procedures for employees to report defective equipment?

Is defective equipment promptly fixed or replaced?

Are employees allowed sufficient time to make correct adjustments to their desks and chairs before they start work?

Working space

Is there adequate space (e.g. for equipment/furniture used at workstations) for employees to work safely?

Are employees able to move unhindered and safely around the workplace?

Are the floors and surfaces constructed and maintained to minimise the risk of slips, trips and falls?

Manual handling tasks and keyboard work

Are the job tasks free from:

Awkward postures (static, non-neutral angles of body joints)

Repetitive movements (more than twice a minute)

Repetitive or sustained force (for more than 30 seconds at a time)

Long durations (more than 2 hours over a whole shift or continuously for more than 30 minutes)

Large force (e.g. lifting loads in excess of 4.5kg whilst seated)

Lighting

Is the lighting level at the workstation adequate for the task?

Is the workplace free of excessive glare or reflection?

Is adequate lighting provided to allow employees to work safely in the workplace?

Ventilation

Does the ventilation and air movement in the work environment provide adequate thermal comfort throughout the year for the majority of employees?

Psychological environment

Are employees provided with sufficient information, instruction, training, and supervision to allow them to do their job?

Does regular consultation occur with employees about aspects of their work (e.g. conduct of performance monitoring, shift work, etc) that may affect their psychological health?

Are operators provided with adequate and regular breaks from calls?

Are there systems in place for operators to deal with angry, dissatisfied clients?

Are the operators trained in the above system to deal with these clients?

Are employees provided with opportunities to discuss work tasks, performance and feedback issues with their supervisors?

Are employees given the opportunity to participate fully in setting achievable performance targets and the method of conducting performance monitoring?

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