NENA Standard to Protect the Wellbeing of 9-1-1 Professionals

Abstract: This standard, being a revised version of NENA-STA-002 of 2013, the *Standard on Acute/Traumatic and Chronic Stress Management*, defines the potential impacts of 9-1-1 work on the wellbeing of the emergency telecommunicator and directs PSAP leaders to build Comprehensive Stress Resilience Plans empowering their personnel for wellness by preventing, managing, and healing from these impacts, using Resource Documents provided in the Appendices and available from NENA (see https://www.nena.org/page/WellnessContinuum).

1. Executive Overview

1.1 Purpose and Value of This Standard

This revised standard supersedes and improves upon the 2013 NENA Standard on Acute/Traumatic and Chronic Stress Management (STA 002 of 2013). It directs the leaders of North American Public Safety Answering Points (PSAP) to implement Comprehensive Stress Resilience Plans (CSRP)[1] in their 9-1-1 Emergency Communication Centers (ECC) to address workplace stressors and the stress impacts defined below. Readers can take heart in knowing this revised standard not only declares the importance of PSAP adoption of CSRPs; it also includes *Resource Documents* as Appendices to provide PSAP leaders and their personnel with deeper understanding of key 9-1-1 risk factors and the concrete steps they can take to build and implement their CSRP. This Standard calls for all PSAPs to establish these CSRPs addressing the following areas essential to upholding the wellbeing of 9-1-1 Professionals and the PSAP as an organization:

- Optimizing 9-1-1 Workplace Conditions
- Stress Resilience Training
- Effective use of Critical Incident Stress Management (CISM)
- Provision of Peer Support and Peer Support Program Development
- Employee Assistance Programs (EAP)
- Evidence-Based Treatment (EBT)
- Sleep Optimization for 9-1-1 Professionals
- Support for Preventing and Overcoming 9-1-1 Obesity
- Comprehensive and Ongoing Training for Call Mastery
- Management of Exposure to Incident-Related Imagery
- Long-Term Support to the 9-1-1 Workforce after High Impact Events

These elements SHALL be addressed by the PSAP in their CSRP due to the significant stress experienced by 9-1-1 Professionals discussed in the next section.

1.2 The 9-1-1 Stress Problem and Impacts

(NOTE: All key terms used below are defined in section 5.11: Abbreviations, Terms, and Definitions.)

9-1-1 Emergency Telecommunicators (also referred to herein as 9-1-1 Professionals) commonly experience four categories of stress on the job:

1) Acute traumatic stress during incident-related exposures to stressors including callers and field responders in perceived life-death scenarios, or scenarios involving potential serious harm. Exposure to such stress can lead to Acute Stress Disorder (ASD), Post-

---

[1] These resilience plans were referred to in the 2013 version of this Standard as "Comprehensive Stress Management Programs."

Traumatic Stress Disorder (PTSD), or if experienced indirectly, Secondary Traumatic Stress (STS), known also as Vicarious Traumatization.

2) Acute, frequently recurring stress *without traumatic elements* in response to lesser yet still demanding stressors (e.g., non-emergent calls from citizens, conflicts with co-workers, and difficult work conditions). Both forms of acute stress can contribute to Compassion Fatigue and Chronic Stress Response.

3) Compassion Fatigue, a combination of vicarious traumatization and burnout, results from the cumulative psychological impacts of acute stress (see 1 and 2 above) over time. To understand more about Compassion Fatigue and for help addressing it, see *Appendix F: Addressing the Challenges with Compassion Fatigue, Secondary Traumatic Stress, and Vicarious Traumatization in the 9-1-1 Industry*.

When experienced for long durations in the workplace, these stress experiences can lead to the Chronic Stress Response (see below):

4) The Chronic Stress Response involves the repeated and excessive activation of the body's acute stress response leading to biochemical/hormonal changes that may result in metabolic syndrome, seriously impaired health and problems in performance and quality of life. These risks depend on the individual's history, resilience, resources, and available support.

A 2015 study of 808 9-1-1 Telecommunicators in the United States identified symptoms reported among this population consistent with diagnoses of clinical depression at a rate of 24% and a rate of PTSD also at 24%, (the latter calculated based on use of civilian cut-off scores for applied PTSD screening tools)[2]. These rates are four to five times greater than the rate for adults in the general U.S. population. Additional studies support these findings about PTSD and depression among 9-1-1 Professionals and suggest the incident rate may be even higher[3,4]. Newer research points to more extensive stress impacts including obesity and other

---

[2] Lilly, M.M., & Allen, C.E.* (2015). Psychological inflexibility and psychopathology in 9-1-1 telecommunicators. Journal of Traumatic Stress, 28, 262-266. doi: 10.1002/jts.22004

[3] Baseman, J., Revere, D., Painter, I., Stangenes, S., Lilly, M., Beaton, R., Calhoun, R., & Meischke, H. (2018). Impact of new technologies on stress, attrition, and well-being in emergency call centers: The Next Generation 9-1-1 study protocol. BMC Public Health, 18, 597. doi: 10.1186/s12889-018-5510-x

[4] Lilly, M. M., & Pierce, H. (2012). PTSD and depressive symptoms in 911 telecommunicators: the role of peritraumatic distress and world assumptions in predicting risk. Psychological Trauma: Theory, Research, Practice, and Policy, 1-7, doi: 10.1037/a0026850

physiological conditions[5,6,7]. As a group, 9-1-1 Professionals may be at high risk of chronic life-threatening diseases due to their commonly known struggle with chronic sleep deprivation and chronic stress. Adequate sleep is imperative to properly function in the ECC. Lack of proper sleep can be detrimental to the health of the 9-1-1 Professional and can also create liabilities for the ECC. While more research is needed, in the absence of adequate stress management resources and supports, 9-1-1 Professionals may self-medicate their distress at high rates, leading to abuse of and addiction to various substances[8]. The PSAP *Comprehensive Stress Resilience Plan (CSRP)* can empower PSAP leaders and their personnel to address each of these health risks.

In addition, 9-1-1 Professionals' wellbeing, performance, morale, and retention may be directly associated with leadership practices and how work conditions are created and managed in the PSAP. These conditions include what demands are placed on employees, the degree of control employees have over conditions impacting them, the support they receive to do their work, the health of relationships with personnel at all levels, the match between their roles and abilities, and how change in the organization is managed. Accordingly, workplace conditions SHALL be carefully addressed by PSAP leaders as part of their Comprehensive Stress Resilience Plans[9].

PSAP implementation of Next Generation 9-1-1 (NG9-1-1) technologies[10] will enable 9-1-1 Professionals to visually experience Incident-Related Imagery (IRI). IRI is defined as any form of visual information associated with an incident scene that is delivered via any medium to public safety personnel[11]. Examples of IRI include but are not limited to still images captured on a smartphone, pre-recorded video captured by CCTV, live streaming video from a wireless device or via an application on a wireless device, and live video from transportation traffic

---

[5] Lilly, M.M., London, M.J., & Mercer, M.C. (2016). Predictors of obesity and physical health complaints among 9-1-1 telecommunicators. Safety and Health at Work, 7, 55-62. doi: 10.1016/j.shaw.2015.09.003

[6] Meischke, H., Lilly, M., Beaton, R., Calhoun, R., Tu, A., Stangenes, S., Painter, I., Revere, D., & Baseman, J. (2018). Protocol: a multi-level intervention program to reduce stress in 9-1-1 telecommunicators. BMC Public Health, 18, 570, doi: 10.1186/s12889-018-5471-0

[7] Meischke, H., Painter, I., Lilly, M., Beaton, R., Revere, D., Calhoun, B., Seeley, KD., Carslay, Y., Moe, C., & Baseman, J. (2015). An exploration of sources, symptoms, and buffers of occupational stress in 9-1-1 emergency call centers. Annals of Emergency Dispatch & Response, 3 (2), 28-35.

[8] See Appendix G: Addressing 9-1-1 Addiction and Self-Medication for further information.

[9] See Management of 9-1-1 Workplace Conditions for further information.

[10] NG9-1-1 capability is proposed to "*…enable the public to send emergency communications to 9-1-1 Public Safety Answering Points (PSAPs) via text, photos, videos, and data and enhance the information available to PSAPs and first responders for assessing and responding to emergencies.*" Source: Federal Register Volume 76, Number 197 (Wednesday, October 12, 2011), [Proposed Rules], p. 63258. From the Federal Register Online via the Government Printing Office [www.gpo.gov/fdsys/pkg/FR-2011-10-12/pdf/2011-26258.pdf].

[11] DeMar, D. Jeremy. "Next Generation 9-1-1: Policy Implications of Incident Related Imagery on the Public Safety Answering Point." Masters Thesis. Naval Postgraduate School, 2017. http://hdl.handle.net/10945/52972

cameras. There are multiple possible benefits of telecommunicators' engagement with callers, responders, and the scenes where incidents occur, including greater sense of call mastery[12].

However, 9-1-1 Professionals may be at higher risk of potential traumatization when exposed to IRI involving callers and field responders in profound psychological distress, physical injury, or dangerous interpersonal conflicts. The same document reported such exposures may further increase the risk of incurring PTSD and other stress-related conditions and impacts.

Exposure to IRI is an example of "techno-stress." Techno-stress is defined as stress created by adoption of information and communication technologies which can impact worker productivity, job satisfaction, commitment to the organization, and retention[13].

Further, even indirect exposure to potentially traumatic events such as those experienced by supervisors and quality assurance managers who replay and review 9-1-1 calls, can lead to Secondary Traumatic Stress Disorder (STSD)[14].

1.3 Rationale for Addressing the 9-1-1 Stress Problem

Studies have found when these work conditions are not carefully managed, employees are at greater risk for poor health, wellbeing, and productivity with greater absenteeism and sickness[15]. Workplace stress has been linked to dangerous errors in judgment and lack of concentration in the medical professions[16]. Earlier in the history of the 9-1-1 industry, local and national leaders did not have the benefit of knowledge about the health and performance risks posed by 9-1-1 Professionals' exposure to acute, traumatic, and chronic stress. Fortunately, now science has made those risks known. The National Emergency Number Association's mission objective is to "protect human life"[17]. This Standard recognizes the ethical responsibility of all 9-1-1 stakeholders to uphold this mission by strategically protecting the lives and wellbeing of 9-1-1 Professionals.

---

[12] Marshall, J. (2018) Leading the Next Generation 9-1-1 PSAP: Managing the risks of real-time video interactions. In Marshall, J., & Laorenza, T. (2018). *The resilient 9-1-1 professional: A comprehensive guide to surviving and thriving together in the 9-1-1 center (pp. 324-336.* Petoskey, MI: South of Heaven Press.

[13] Baseman, J., Revere, D., Painter, I. *et al.* Impact of new technologies on stress, attrition and well-being in emergency call centers: the NextGeneration 9–1–1 study protocol. *BMC Public Health* 18, 597 (2018). https://doi.org/10.1186/s12889-018-5510-x

[14] Troxell R. "Indirect Exposure to the Trauma of Others: The experience of 9-1-1 telecommunicators." ProQuest Dissertations and Theses. 2009; May. http://pqdtopen.proquest.com/doc/304351154.html?FMT=ABS (accessed May 17, 2016).

[15] World Health Organization fact sheet: Protecting Workers Health: https://www.who.int/news-room/fact-sheets/detail/protecting-workers'-health

[16] Why you should prioritize stress during the pandemic: Workable tutorial. https://resources.workable.com/tutorial/workplace-stress-management-during-the-pandemic

[17] http://www.nena.org/?page=Mission

1.4 Benefits of Implementing Solutions

A preliminary study indicates implementation of PSAP resilience and wellness initiatives addressing the risks and conditions discussed above can produce significant improvements in major PSAP metrics including morale, performance, and financial health of the organization[18]. A robust body of research beyond the 9-1-1 industry supports these findings. In an innovative program originating from a joint venture between NIOSH and Corning, Inc., employees increased their skills to manage work-related stress and experienced significant reductions in stress levels[19]. Similar stress programs have also led to sharp reductions in health care claims among hypertensive employees. Studies also indicate significant impacts of stress management programs in hospitals including drastic reductions in medication errors and malpractice claims[20].

Other model programs have produced improved attendance records among highway maintenance workers and reduction in malpractice claims among hospital nurses. The stress reduction program elements set forth in this Standard are consistent with those proven successful in these other settings. Thus, participating PSAPs can expect comparable outcomes benefiting all 9-1-1 stakeholders if such programs, as set forth in this Standard, are designed to address the demands and conditions in each PSAP.

---

[18] Whitaker, I. How a 9-1-1 Leader Engaged his Employees to Boost Morale and His PSAP's Major Metrics of Success. In The Resilient 9-1-1 Professional, pp: 297-309
[19] http://www.eiconsortium.org/model_programs/stress_management_training.html
[20] Fact Sheet: workplace stress. Nonprofit Risk Management Center, 2010: http://www.nonprofitrisk.org/tools/workplace-safety/public-sector/topics/ws/stress-ps.htm

Table of Contents

NENA
STANDARD DOCUMENT
NOTICE

This Standard Document (STA) is published by the National Emergency Number Association (NENA) as an information source for 9-1-1 System Service Providers, network interface vendors, system vendors, telecommunication service providers, and 9-1-1 Authorities. As an industry Standard it provides for interoperability among systems and services adopting and conforming to its specifications.

NENA reserves the right to revise this Standard Document for any reason including, but not limited to:

- Conformity with criteria or standards promulgated by various agencies,
- Utilization of advances in the state of the technical arts,
- Reflecting changes in the design of equipment, network interfaces, or services described herein.

This document is an information source for the voluntary use of communication centers. It is not intended to be a complete operational directive.

It is possible that certain advances in technology or changes in governmental regulations will precede these revisions. All NENA documents are subject to change as technology or other influencing factors change. Therefore, this NENA document should not be the only source of information used. NENA recommends that readers contact their 9-1-1 System Service Provider (9-1-1 SSP) representative to ensure compatibility with the 9-1-1 network, and their legal counsel, to ensure compliance with current regulations.

Patents may cover the specifications, techniques, or network interface/system characteristics disclosed herein. No license is granted, whether expressed or implied. This document shall not be construed as a suggestion to any manufacturer to modify or change any of its products, nor does this document represent any commitment by NENA, or any affiliate thereof, to purchase any product, whether or not it provides the described characteristics.

By using this document, the user agrees that NENA will have no liability for any consequential, incidental, special, or punitive damages arising from use of the document.

NENA's Committees have developed this document. Recommendations for changes to this document may be submitted to:

National Emergency Number Association
1700 Diagonal Rd, Suite 500
Alexandria, VA 22314
202.466.4911
or commleadership@nena.org

NENA: The 9-1-1 Association improves 9-1-1 through research, standards development, training, education, outreach, and advocacy. Our vision is a public made safer and more secure through universally-available state-of-the-art 9-1-1 systems and better-trained 9-1-1 professionals. Learn more at nena.org.

Document Terminology

This section defines keywords, as they should be interpreted in NENA documents. The form of emphasis (UPPER CASE) shall be consistent and exclusive throughout the document. Any of these words used in lower case and not emphasized do not have special significance beyond normal usage.

1. MUST, SHALL, REQUIRED: These terms mean that the definition is a normative (absolute) requirement of the specification.

2. MUST NOT: This phrase, or the phrase "SHALL NOT", means that the definition is an absolute prohibition of the specification.

3. SHOULD: This word, or the adjective "RECOMMENDED", means that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.

4. SHOULD NOT: This phrase, or the phrase "NOT RECOMMENDED" means that there may exist valid reasons in particular circumstances when the particular behavior is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.

5. MAY: This word, or the adjective "OPTIONAL", means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option "must" be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same vein an implementation which does include a particular option "must" be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides.)

These definitions are based on IETF RFC 2119.

Intellectual Property Rights (IPR) & Antitrust Policy

NOTE – The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights. By publication of this standard, NENA takes no position with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details may be obtained from NENA by contacting the Committee Resource Manager identified on NENA's website at www.nena.org/ipr.

Consistent with the NENA IPR Policy, available at www.nena.org/ipr, NENA invites any interested party to bring to its attention any copyrights, patents or patent applications, or other proprietary rights that may cover technology that may be required to implement this standard.

Please address the information to:
    National Emergency Number Association
    1700 Diagonal Rd, Suite 500
    Alexandria, VA 22314
    202.466.4911
    or commleadership@nena.org

Reason for Issue/Reissue

NENA reserves the right to modify this document. Upon revision, the reason(s) will be provided in the table below.

Document Number	Approval Date	Reason For Issue/Reissue
NENA-STA-002.1-2013	08/05/2013	Initial Document
NENA-STA-002.1.1-2013	05/25/2015	Update web page links
NENA-STA-002.2-2022	03/14/2022	Additional knowledge from empirical studies have provided greater clarity about stress-related challenges and solutions calling for revisions to assure current and future applicability. Develop ANSI accredited standard.

2. Description of the 9-1-1 Center Comprehensive Stress Resilience Plan (CSRP)

Public Safety Answering Points SHALL establish Comprehensive Stress Resilience Plans to include each of the elements below. Note: Resource Documents (or references to external resources) to inform and empower PSAP personnel to take concrete steps to implementing these CSRP elements are found in the Appendices. Links to these documents are provided below.

2.1 Management of 9-1-1 Workplace Conditions

Management of 9-1-1 workplace conditions includes fostering a positive work environment and organizational culture by appropriately addressing the following:

- Leadership support and commitment
- Workplace civility
- Workplace demands and shift control
- Recruitment, retention, and turnover
- Mentoring, career coaching, support, and succession planning

PSAP leaders should also prepare strategically to assure immediate, intermediate, and long-term psychological support for their personnel in the aftermath of High Impact Events. See the *Post Tragedy Care Checklist* for complete guidance, below.

> **For more information and guidelines,** PSAP leaders are urged to utilize the following resources:
>
> - *Appendix A: Management of Workplace Conditions*
> - The *Post Tragedy Care Checklist at the NENA Wellness Continuum:* https://cdn.ymaws.com/www.nena.org/resource/resmgr/continuum_resc_imgs/continuum/Post_Tragedy_Care_Checklist_.pdf

2.2 Stress Resilience Training

Stress resilience training should include a minimum of eight (8) hours in length for all PSAP personnel addressing the following topics:

- The nature of stress, stress disorders (acute/traumatic, chronic), mental, and physical health impacts of unmanaged stress.
- Define 9-1-1 Professionals' exposure to work stressors specific to the role of the telecommunicator.

- Negative impacts of a traditional military and emergency responder mindset relating to emotional distress (e.g., depending primarily on psychological denial and minimization of emotional distress) on personal health and work performance; and the importance of acknowledging distress, seeking support, and practicing proactive stress management.

- Education on coping skills and strategies including Therapeutic Lifestyle Changes (TLC, See *Terms and Definitions* section).

- Utilization of empirically supported resilience skills.

- Benefits of utilizing other elements of the CSRP cited below.

- Principles and skills for management of emotion and thinking under duress.

- Principles and skills for effective PSAP communication and conflict resolution.

- Protective factors to avoid self-medication and addiction through development of healthy stress-reducing skills and mentorship.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- *Appendix G: Addressing 9-1-1 Addiction and Self-Medication*

2.3 PSAP Peer Support Programs

Proper Peer Support programs utilize ECC staff who are trained to provide confidential emotional support upon request of a PSAP employee without administering advice or solutions. Peer Support is not a substitute for professional counseling but serves to diffuse stress and staff conflicts while encouraging people to move toward responsible solutions and professional therapy assistance as needed. Small PSAPs with few employees may not be able to develop their own Peer Support Programs but are expected to ensure access for their personnel to peer support as by mutual aid with centers willing to provide this support.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- Peer Support Team, Development, Implementation and Oversight

2.4 Critical Incident Stress Management (CISM)

In coordination with the PSAP Peer Support initiative, develop and implement PSAP or agency-wide Standard Operating Procedures (SOP) ensuring participation of PSAP personnel in CISM activities including debriefing sessions when involved in traumatic events, and as needed in relation to such events. PSAP leaders are also strongly encouraged to promote CISM certification training by at least one PSAP employee to serve as the on-site CISM support person fostering effective use of CISM by PSAP employees. Printed materials and online

information should also be provided informing employees about how to access CISM resources and encouraging appropriate use. PSAPs are highly encouraged to utilize only training and CISM models provided by the International Critical Incident Stress Foundation to avoid improper training and implementation of CISM.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- NENA Wellness Continuum

2.5   Employee Assistance Programs (EAP)

Secure PSAP personnel access to the EAP established by your agency or governing body. If not currently provided, establish an EAP. Educate and encourage employee use of EAP services to include provision of confidential counseling for all PSAP personnel as a covered employee benefit. 9-1-1 dispatch authorities that do not have access to government-operated EAPs should seek to establish EAP contracts, ensuring they are staffed by clinicians with experience treating first responders, who are familiar (or will actively work to gain familiarity with) the 9-1-1 worklife and stressors, and who either specialize in treatment of traumatic stress disorders or have identified and are prepared to refer to such area clinicians.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- NENA Wellness Continuum

2.6   Stress and Traumatic Stress Disorders

Seek out local therapists specializing in the treatment of stress and traumatic stress disorders and utilize evidence-based therapies recognized by the Department of Defense and the Veterans Administration to be effective in the treatment of PTSD. These therapies include but may not be limited to: Cognitive Processing Therapy (CPT), Eye Movement Desensitization & Reprocessing, (EMDR) and/or Prolonged Exposure (see *Terms and Definitions* section for explanation of these therapies). Encourage proactive use of therapy by PSAP personnel. Lastly, identify local treatment centers specific to public safety professional culture.

For more information and guidelines, PSAP leaders are urged to utilize the following resources:

- *Appendix E: Managing Stress related to PSAP Personnel Exposure to Incident-Related Imagery*
- NENA Wellness Continuum

2.7 PSAP Resilience and Wellness Educational Materials and Resources

PSAPs should inform personnel of and provide access to onsite and online information about stress-related risks. This information should include local and online resources to manage stress including traumatic stress disorders, chronic stress and related health problems, and information on the role of nutrition, exercise, and sleep in prevention of stress disorders and stress-related diseases.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- *Appendix C: Sleep and Sleep Optimization*

- *Appendix D: 9-1-1, Obesity, & Eating Habits*

- *Appendix F: Addressing the Challenges with Compassion Fatigue, Secondary Traumatic Stress, and Vicarious Traumatization in the 9-1-1 Industry*

- NENA Wellness Continuum

2.8 Wellness and Mental Health Screening Resources

PSAPs should provide employee access to Screening, Brief Intervention and Referral to Treatment (SBIRT) instruments to aid in identification of risk factors that can result in self-medication and addiction.

For more information and guidelines, PSAP leaders are urged to utilize the following resources:

- Professional Quality of Life (ProQOL) screening tool and related tool for planning self-care

- *Appendix E: Managing Stress related to PSAP Personnel Exposure to Incident-Related Imagery*

- *Appendix G: Addressing 9-1-1 Addiction and Self-Medication*

- NENA Wellness Continuum

2.9 Comprehensive, Relevant, and Ongoing Training

PSAPs should provide such training for all PSAP 9-1-1 Professionals on structured call-taking processes for all emergency call types processed in their PSAP. PSAP leaders are encouraged to follow the *Recommended Minimum Training Guidelines for the Telecommunicator*[21]. While there is no recommended minimum hour requirement, PSAPs are encouraged to review

---

[21] https://www.911.gov/pdf/Minimum_Training_Guidelines_for_911_Telecommunicator_2016.pdf

training on the listed minimum training topics included in the Guidelines at least once every four years.

The basic telecommunicator training topics described in the Guideline provide minimum-level understanding of the profession and the types of situations 9-1-1 Professionals may be exposed to throughout their career. Additional training topics should also be addressed as part of continuing education rotation to manage the effect handling such calls can have on the 9-1-1 Professionals' wellbeing.

For more information and guidelines, PSAP leaders are urged to utilize the following resources:

- *Recommended Minimum Training Guidelines for the Telecommunicator*
- *Appendix B: Comprehensive, Relevant, and Ongoing Training*

2.10 Sleep Optimization

PSAPs should actively support Sleep Optimization for the 9-1-1 Professional.

For more information and guidelines, PSAP leaders are urged to utilize the following resources:

- *Appendix C: Sleep and Sleep Optimization*
- *Sleep Problems Handout*

2.11 Health Risks related to Obesity

PSAP leaders should actively support prevention and support in overcoming health risks related to obesity.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- *Appendix D: 9-1-1, Obesity, & Eating Habits*

2.12 Management of Potentially Traumatic Exposures to Incident-Related Imagery

PSAP Leaders should plan strategically to manage 9-1-1 Professionals' exposure to Incident-Related Imagery related to utilization of NG9-1-1 technologies making such exposures possible.

For more information and guidelines, PSAP leaders are urged to utilize the following resource:

- *Appendix E: Managing Stress related to PSAP Personnel Exposure to Incident-Related Imagery*

2.13 Personal Health Incentivizing Programs

PSAPs should promote employee investment in lifestyle changes and practices shown to prevent mental and physical diseases. Any health incentivizing program considered for adoption should be supported by research as effective and unharmful prior to selection and implementation.

> **For more information and guidelines,** PSAP leaders are urged to utilize the following resource:
>
> - NENA Wellness Continuum

3. Impacts, Considerations, Abbreviations, Terms, and Definitions

3.1 Operations Impacts Summary

PSAP adoption of this Standard will call for local staff to assume task responsibility for implementation and evaluation of all elements of the CSRP. Such tasks would include procuring CSRP funding, identification and coordination of CSRP resources, and facilitating access to related services including Peer Support, Critical Incident Stress Management, local mental health trauma therapists, and other elements of the CSRP (see Section 2 for description of CSRP).

3.2 Technical Impacts Summary

No new or special technologies are required by this Standard.

3.3 Security Impacts Summary

The participation of PSAP personnel in certain services included in the CSRP is to remain confidential. Examples include employee pursuit of Peer Support and off-site professional counseling (whether provided through Employee Assistance Program or elsewhere). Accordingly, agency procedures will need to be established to ensure maintenance of such confidentiality.

3.4 Recommendation for Additional Development Work

"Is standards development work needed for this topic?" Yes, since the stressors facing 9-1-1 Professionals operating the PSAP are predicted to increase with the adoption of NG9-1-1 technologies, specifically, capabilities enabling frontline personnel exposure via incident-related imagery to the public and the field responders serving them, ongoing and careful investigation of stress impacts of Incident-Related Imagery will be essential to further define the impact of this stressor and to provide optimal protection of frontline 9-1-1 Professionals.

Additionally, there is a growing concern in the 9-1-1 industry that 9-1-1 Professionals are struggling with addictions secondary to work-related stress. Few data are available to identify

addictive and self-medicating behavior as a coping mechanism to occupational stress in the 9-1-1 industry. Scientific research is needed in this area. For more extensive discussion of this issue, see *Appendix G: Addressing 9-1-1 Addiction and Self-Medication*.

3.5 Anticipated Timeline

The anticipated timeline for PSAP implementation of the CSRP will vary depending on the extent to which each PSAP currently employs elements of the CSRP. For example, PSAPs already implementing EAPs will likely require little additional efforts or time to strengthen or maintain these services. It is anticipated that other CSRP elements described in Section 3 of this Standard can be fully deployed within three to nine months upon adoption. Variations in this timeline will depend on availability of resources. Rural PSAPs within which mental health services are lacking may require additional staff time to identify treatment providers qualified to offer trauma therapy while more metropolitan PSAPs may complete setup of their CSRPs in as little as three months. This timeline assumes rapid assignment of CSRP oversight to a designated staff member who will oversee its implementation.

3.6 Cost Factors

Costs related to PSAP implementation of the CSRP defined in this standard will be incurred by those PSAPs without existing EAPs that provide financial coverage for a limited number of counseling sessions. PSAPs with existing EAPs may incur additional costs to secure services from clinicians qualified to treat traumatic stress if existing EAP contractual clinicians are not qualified. Additional costs may also be expected related to provision of stress management training for staff, staff participation in CISM on a paid-time basis, and to build Peer Support Programs. However, costs may be defrayed by partnering with other PSAPs in providing peer support as mutual aid.

3.7 Cost Recovery Considerations

PSAPs can predict financial costs of implementing the CSRP will be offset by cost reductions related to absenteeism, medical and personal leave time, resignations, recruitment efforts, legal liability, and by improved productivity. It is proposed that legislation enabling NG9-1-1 include provision for funding to support CSRPs. In addition, funding of CSRPs may be absorbed by pursuit of grants funded by charitable organizations that recognize the societal contributions of 9-1-1 Professionals. Since emerging technologies enabling NG9-1-1 capabilities will also place additional stress on PSAP members, industry vendors providing these technologies could consider contributing financially as corporate citizens to support local CSRPs.

3.8 Additional Impacts (non-cost related)

Beyond those impacts discussed earlier in this NENA document, the information or requirements contained herein are not expected to have operational or technical impacts based on the analysis of the authoring group.

3.9 Abbreviations, Terms, and Definitions

See the NENA Knowledge Base for a Glossary of terms and abbreviations used in NENA documents. Abbreviations and terms used in this document are listed below with their definitions.

Term or Abbreviation (Expansion)	Definition / Description
ASD (Acute Stress Disorder)	Clinically significant (causing significant distress or impairment in social, occupational, or other important areas of functioning) symptoms more than two days but less than one month after exposure to a trauma, as defined above (may progress to PTSD if symptoms last more than one month)[22].
CF (Compassion Fatigue)	Often used in mental health as a synonym for Secondary Traumatic Stress (STS, see term listed separately below). However, the definition of CF used herein recognizes it as a syndrome that involves both STS and the condition commonly referred to as "burnout." Burnout "…concerns things such as exhaustion, frustration, anger and depression…"[23]. This component of Compassion Fatigue emphasizes that the "…caregiver's experience of empathy with those that are served can reach a point where continued exposure to the stressor will overtax the abilities of the individual to effectively manage the stress. Exhaustion ensues"[24]. Thus, the caregiver, such as a 9-1-1 Professional, may cease feeling compassion for those he serves resulting in impaired work performance and experience diminished quality of life.
Chronic Stress Response	Ongoing activation of (or failure to resolve) the stress response. This chronic state can lead to impaired personal functioning and numerous physical diseases and psychological disorders.

---

[22] Source: *DoD/VA Practice Guideline: Management of Post Traumatic Stress*, p. 22. Developed by The Management of Post-Traumatic Stress Working Group, 2010, with support from: The Office of Quality and Performance, VA, Washington, DC & Quality Management Division, United States Army MEDCOM. http://www.healthquality.va.gov/PTSD-FULL-2010c.pdf Accessed 11.12.11

[23] Source: Beth Hudnall Stamm, Director, Institute of Rural Health, Idaho State University, Pocatello, Idaho, USA. See http://proqol.org/Compassion_Fatigue.html, last accessed 10.10.12.

[24] Troxell, R., 2008. Ibid.

CISD (Critical Incident Stress Debriefing)	A structured group discussion, usually provided 1 to 10 days post crisis, and designed to mitigate acute symptoms, assess the need for follow-up and, if possible, provide a sense of post-crisis psychological closure.
CISM (Critical Incident Stress Management)	A team comprised of peers and mental health professionals who train and work together to help personnel through traumatic and/or critical incidents. These teams play a crucial role following a critical incident by providing group defusing and debriefing meetings and coordinated conversations to mitigate stress reactions and provide guidance on coping. CISM Teams may be local, regional, or from different parts of the US, as it is strongly discouraged for peers to debrief their own personnel.
CPT (Cognitive Processing Therapy)	A specific type of cognitive behavioral therapy that helps patients learn how to modify and challenge unhelpful beliefs related to the trauma[25].
CSRP (Comprehensive Stress Resilience Plan)	A plan developed by PSAP leaders in accordance with expert guidance and resources provided by NENA addressing stress and all major factors impacting the well-being and performance of 9-1-1 Professionals to optimize their resilience and well-being.
Defusing	A three-phase structured small group discussion provided within hours of a crisis for purposes of assessment, triaging, and acute symptom mitigation[26]. Note that this is the complete definition offered by the International Critical Stress Foundation (ICISF). Other definitions may vary.
EAP (Employee Assistance Program)	An employee benefit program that assists employees with personal problems and/or work-related problems that may impact their job performance, health, mental and emotional well-being.
EBP (Evidence Based Psychotherapy)	An approach to therapy supported by research findings that provide evidence of its effectiveness[27].

---

[25] https://www.apa.org/ptsd-guideline/treatments/cognitive-processing-therapy

[26] https://icisf.org/a-primer-on-critical-incident-stress-management-cism/

[27] Arlo Pucci, 2005. http://nacbt.org/evidenced-based-therapy.htm. Accessed 11.12.11

EMDR (Eye Movement Desensitization and Reprocessing)	An evidence-based, trauma-focused psychotherapy recognized by the Department of Veteran Affairs and the Department of Defense as effective for the treatment of post-traumatic stress disorder[28]. A comprehensive, integrative psychotherapy approach. EMDR is an information processing therapy. It uses an eight-phase approach to address the experiential contributors of a wide range of pathologies. It attends to the past experiences that have set the groundwork for pathology, the current situations that trigger dysfunctional emotions, beliefs, and sensations, and the positive experience needed to enhance future adaptive behaviors and mental health[29].
Homeostasis	A property of cells, tissues, and organisms that allows the maintenance and regulation of the stability and constancy needed to function properly. Homeostasis is a healthy state that is maintained by the constant adjustment of biochemical and physiological pathways. An example of homeostasis is the maintenance of a constant blood pressure in the human body through a series of fine adjustments in the normal range of function of the hormonal, neuromuscular, and cardiovascular systems[30].
IRI (Incident-Related Imagery)	Any form of visual information associated with an incident scene that is delivered via any medium to public safety personnel[31].
PE (Prolonged Exposure) Therapy	An evidence-based, trauma-focused psychotherapy recognized by the Department of Veteran Affairs and the Department of Defense as effective for the treatment of post-traumatic stress disorder[32]. The goals of exposure therapy are to help reduce fear and anxiety and eliminate avoidance behavior.

[28] Source: *Ibid*, pp. 128-130. Developed by The Management of Post-Traumatic Stress Working Group, 2010, with support from: The Office of Quality and Performance, VA, Washington, DC & Quality Management Division, United States Army MEDCOM. http://www.healthquality.va.gov/PTSD-FULL-2010c.pdf Accessed 11.12.11

[29] Shapiro, F. (2002). EMDR as an Integrative Psychotherapy Approach: Experts of Diverse Orientations Explore the Paradigm Prism. Washington, DC: American Psychological Association Books

[30] Melissa Conrad Stoppler, Medical Definition of Homeostasis, Medicinenet.com: https://www.medicinenet.com/script/main/art.asp?articlekey=88522

[31] (DeMar, D. Jeremy. "Next Generation 9-1-1: Policy Implications of Incident Related Imagery on the Public Safety Answering Point." Masters Thesis. Naval Postgraduate School, 2017. http://hdl.handle.net/10945/52972

[32] Source: *DoD/VA Practice Guideline: Management of Post Traumatic Stress*, pp. 123-125. Developed by The Management of Post-Traumatic Stress Working Group, 2010, with support from: The Office of Quality and Performance, VA, Washington, DC & Quality Management Division, United States Army MEDCOM. http://www.healthquality.va.gov/PTSD-FULL-2010c.pdf Accessed 11.12.11

Peritraumatic Stress	"…the emotional and physiological distress experienced during and/or immediately after a traumatic event and is associated with the development and severity of posttraumatic stress disorder (PTSD) and related psychological difficulties"[33].
Psychological Trauma	A type of damage to the psyche that occurs as a result of a traumatic event. When that trauma leads to post-traumatic stress disorder, changes to brain structure and function occur that impair the person's ability to adequately cope with stress[34].

PTSD (Post-Traumatic Stress Disorder)	An official clinical diagnosis of the American Psychiatric Association widely used by mental health professionals to describe and treat the condition of a person who meets the following criteria:
	• Has been exposed to a traumatic event (see definition of Traumatic Event)
	• Experiences several symptoms enduring for at least 1 month after the traumatic event(s) from each of three symptom clusters:
	   o Intrusive recollections
	   o Avoidance/numbing symptoms
	   o Hyper-arousal symptoms
	• The above symptoms occur for more than one month following exposure to the event.
	   o The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

---

[33] Source: Bunnell BE, Davidson TM, Ruggiero KJ. The Peritraumatic Distress Inventory: Factor structure and predictive validity in traumatically injured patients admitted through a Level I trauma center. J Anxiety Disord. 2018 Apr;55:8-13. doi: 10.1016/j.janxdis.2018.03.002. Epub 2018 Mar 9. PMID: 29549879; PMCID: PMC5879025.

[34] Source: en.wikipedia.org/wiki/Psychological_trauma

Resilience	"The capacity or ability to prepare for, recover from, and adapt in the face of stress, adversity, trauma or tragedy. The energy you have available to use for physical, mental, and emotional needs. Like a battery to draw upon to handle your daily challenges and duties and to remain calm, think clearly and be in control of your emotions…rather than become stressed out, which further drains your energy reserves"[35]. There are four domains of resilience: mental, emotional, physical, and spiritual[36].
SBIRT (Screening, Brief Intervention and Referral to Treatment)	Screening tools used for early intervention assessment and treatment to people who have substance abuse disorders or who are at risk for developing these disorders.
Stress	Synonym for The Stress Response (see below)[37].
(The) Stress Response	The series of neurochemical and biological changes in the brain and body orchestrated by the brain to prepare the person for action in response to the perceived psychological demand or threat—the stressor, and to restore biological balance (homeostasis) within and between all systems. In essence, *The Stress Response* refers to the many internal changes that occur to help a person facing a stressor to regain homeostasis[38].
Stressor	An external experience that a person perceives as threatening, leading to activation of the stress response[39].

[35] *Personal Resilience Guide—Law Enforcement and Other First Responders*. McCraty, R., et al. Institute of HeartMath, 2012.

[36] *Personal Resilience Guide—Law Enforcement and Other First Responders*. McCraty, R., et al. Institute of HeartMath, 2012.

[37] Former NENA 9-1-1 Stress Work Group member Michael Goold (Goold, 2011) recognizes the historical problem with arriving at a definition of stress agreed to by scientists. Thus, the work group has chosen to use the more descriptive synonym *Stress Response* whose definition summarized above is now shared with adequate agreement by stress scientists (see footnote 5).

[38] The concept of stress as "change" is supported by Susan Simon (2011, correspondence with J. Marshall); the current definition of the stress response incorporating this concept of change is from J. Marshall adapted from *G. Mate', When the Body Says No: Understanding the Stress – Disease Connection (New York: John Wiley & Sons, 2003), 34* and from R. Sapolsky, *Why Zebras Don't Ulcers: a guide to stress, stress-related diseases, and coping. 3rd Ed. New York: Henry Holt: 2004.*

[39] Stressors can be single events or ongoing conditions. Each person interprets and reacts differently to experiences based on personal history, personality, and current psychological status. Thus, one individual may experience an event as stressful while another person does not. However, three factors universally activate stress: uncertainty, lack of information, and loss of control. Source: Mate, G. *When the Body Says No: exploring the stress-disease connection.* 2003, p. 34

STS (Secondary Traumatic Stress)	A negative feeling driven by fear and work-related trauma. It is important to remember that some trauma at work can be direct (primary) trauma. Work-related trauma can be a combination of both primary and secondary trauma. The symptoms of STS are usually rapid in onset and associated with a particular event. They may include being afraid, having difficulty sleeping, having images of the upsetting event pop into your mind, or avoiding things that remind you of the event[40]. STS can occur when "you are exposed to others' traumatic events as a result of your work, for example, as a therapist or an emergency worker" when not in personal danger[41]. Per this definition, frontline 9-1-1 Professionals clearly experience STS when they are assisting during an active emergency (in-progress events) involving such danger to others[42,43].
TLC (Therapeutic Lifestyle Changes)	Established regimens assuring recommended practice of exercise, nutrition, sleep, balanced personal investment in work, recreation/personal and family life experience, and spirituality[44].
Traumatic Event (synonymous to "Trauma")	Exposure to an event that involves but is not limited to actual or threatened death, serious injury, or sexual violence[45].

---

[40] Stamm, B.H. (2009-2012). Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). www.proqol.org.

[41] Ibid.

[42] Ibid, p. 8

[43] See Appendix A for more insight and recommendations to address Compassion Fatigue, Secondary Traumatic Stress and Vicarious Traumatization.

[44] Walsh, R. Lifestyle and Mental Health. American Psychologist, October 2011, pp. 579-592.

[45] American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Page 271 (Diagnostic Features section) for definition of traumatic event (PDF format); Arlington, VA: American Psychiatric Publishing

VT (Vicarious Traumatization)	In contrast to STS, Vicarious Traumatization involves hearing about other peoples' traumatic experiences after they have already happened. By this definition, VT could also occur among other 9-1-1 Professionals not directly involved with response to emergencies including: • Quality assurance workers and supervisors listening to, processing, and discussing recorded 9-1-1 emergency calls and dispatches • 9-1-1 leaders to whom traumatic events are reported and who engage with employees about such events It should be emphasized that the term Vicarious Traumatization was intended to apply to workers such as mental health therapists who are hearing about such events after significant time has elapsed since they occurred. It was not intended to apply to workers assisting those in active distress about tragic events that have just occurred. Thus, it is not appropriate to refer to the potential traumatization experienced by active-duty emergency frontline dispatchers as vicarious since it minimizes the reality of their exposure to trauma[46].

4. Recommended Reading and References

[1]   National Emergency Number Association. *Master Glossary of 9-1-1 Terminology*

References have been cited as footnotes on the bottom of pages where pertinent information has been discussed to optimize review for readers unfamiliar with mental health terminology and concepts.

Effective implementation of this standard requires review and application of the Resource Documents provided as the Appendices to this document. See Table of Contents.

---

[46] Stamm, B.H. (2009-2012). Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). www.proqol.org.

5. Appendices

5.1 Appendix A: Management of 9-1-1 Workplace Conditions

Contributors: Melissa Alterio, Heather Butler, Pam Buzan, LaToya Marz, Wendy McKnight, Danielle Rhodes and Anessa Westmoreland, Sub-Workgroup: Management of 9-1-1 Workplace Conditions

<div align="center">Background</div>

There is a responsibility on PSAP leaders to create, evaluate, and maintain workplace conditions supportive of their worker's health and performance. Management of workplace conditions SHALL include but not be limited to: Scheduling, hours worked, involvement in decision making, communication with leadership in change, workplace demands and control, and organizational support.

PSAP Leadership

Leadership is a fundamental element to overcoming the burnout, turnover, and attrition issues that challenge the operations and administration of ECCs. In fact, a leader who genuinely cares about the people they choose to lead may successfully combat the distress and hardships 9-1-1 Professionals experience due to workplace conditions and vicarious trauma. Adam Timm's book, _People-Driven Leadership: How the Best 9-1-1 Centers Inspire Positive Change_ (Timm, 2020) specifically discusses why the 9-1-1 industry is in need of people-driven leaders to solve the most demanding concerns that require bold changes.

Leaders are expected to inspire and motivate a positive work environment. They are expected to actively listen and engage with their staff to identify the principal needs, intrinsic and extrinsic as they may be, that 9-1-1 Professionals require to function in their jobs satisfactorily, both physically and emotionally.

Poor leadership in ECCs can have serious negative impacts on the quality of life and job performance of 9-1-1 Professionals. With poor physical health conditions that can result from acute, post-traumatic, and chronic stress among 9-1-1 Professionals, it is essential to take proactive steps at the national and local PSAP levels to secure hope for positive mental and emotional health among our 9-1-1 Professionals. Accordingly, PSAP leaders SHALL take responsibility for creating CSRPs for their personnel as defined in Part 2 of the Standard to Protect the Wellbeing of 9-1-1 Professionals. Further, justifications for budget and finances should be explored specifically to provide intensive trauma recovery programs when EAPs and insurance-covered outpatient clinical services are not sufficient to resolve an employee's PTSD. It is imperative that funds be allocated so mental health and wellness care can be provided to 9-1-1 Professionals to effectively mitigate any negative effects of workplace and stress conditions (Alterio, M. 2020).

PSAP leaders can benefit from adopting practices of Transformational and Servant Leadership approaches.

Transformational Leadership focuses on organizational objections – getting followers to engage & support the organization with the goal of enhanced follower performance.

Characteristics of a Transformational Leader: Fosters team progress and development, transforms followers' values to better support the vision and goals of the organization, and builds team spirit and group goal setting with eye on how that supports organizational goals and performance.

Servant Leadership focuses on the followers and service itself – the primary objective is to serve and meet the needs of others rather than exclusively on results.

Characteristics of a Servant Leader: Not self-motivated, develops people by helping them flourish; provides unconditional concern for those he/she leads.

Support and Stress

Organizational support is the extent to which an employee believes their employer values their contributions and genuinely cares about the employee's wellbeing. Perceived organizational support is important to employee job satisfaction and well-being (Kurtessis et al., 2015). Based on meta-analyses of 558 studies, perceived organizational support is strongly associated with less stress, less burnout, less emotional exhaustion, and less work-family conflict. Perceived organizational support is also strongly associated with more job satisfaction and organizational self-esteem (Kurtessis et al., 2015). Based on organizational support theory, for an employee to develop a perception of organizational support, the employee should attribute organizational support to positive regard and not just checking off a box. That is, the support should be experienced as genuine.

Mentoring and Stress

Mentorship in the workplace can take the form of career-related support or interpersonal support. Depending on what the employee needs, these varying levels of mentorship may contribute to less stress among employees (Allen, Eby, Poteet, Lentz, & Lima, 2004). However, research indicates that mentorship may increase stress levels for the mentor if the demands on the mentor are greater than the perceived benefits (Billet, 2003). In a study of male and female police officers, higher levels of stress were related to less job satisfaction and greater perceived need for mentoring programs, however implementation of mentoring programs was not evaluated in this study (Hassell, Archbold, & Stichman, 2010). More research is needed in this area to elucidate the benefits of mentoring programs for 9-1-1 Professionals.

Relationships and Stress

Bullying

Workplace bullying is characterized as repeated attempts to torment, wear down, or frustrate another person with treatment that provokes, pressures, intimidates, or otherwise discomforts the individual (Einarsen, 2000). Research by Hodson and colleagues (2006) indicated that relational powerlessness in an organization and chaotic or disorganized work settings may be more prone to bullying. Chaos creates the opportunity for abuses of power and power differentials can leave employees on the lower end of the hierarchy vulnerable to bullying (Hodson et al., 2006). Other factors, such as workload, job insecurity, and role conflict have been linked to exposure to workplace bullying (Van den Brande et al., 2017). Utilizing solution-focused coping strategies as opposed to emotion-focused coping strategies decreased the likelihood of being exposed to bullying (Van den Brande et al., 2017).

Microaggressions

Workplace discrimination does not always take the form of overt actions that are easily identifiable as discriminatory. Workplace discrimination can take the form of microaggressions. Microaggressions are characterized by brief and commonplace daily verbal, behavioral, or environmental indignities, whether intentional or unintentional, that communicate hostile, derogatory, or negative prejudicial slights and insults toward any group, particularly culturally marginalized groups (Sue, 2010). Because microaggressions are often subtle, they may occur more frequently which may increase the negative impact (Sue et al., 2019). Research has indicated that microaggressions in the workplace can contribute to reduced job satisfaction, increased psychological distress, and employee turnover (Offerman et al., 2014).

Demands and Stress

Workplace demands (e.g., intrinsic task requirements, levels of uncertainty involved in the task and workplace, time pressure, and the rate, amount, and difficulty of the work), can be a large source of employee stress. Research has indicated that the greater the workplace demands, the greater likelihood of increased stress and other negative mental and physical health outcomes (Colligan & Higgins, 2005; Gyllenston 2005). Carleton and colleagues (2020) demonstrated that, specific to public safety personnel, workplace stressors included staff shortages, lack of resources, inconsistent leadership styles, bureaucratic red tape, favoritism, and dealing with coworkers. For 9-1-1 Professionals the greatest occupational stressor reported was staff shortages followed by fatigue, inconsistent leadership, and favoritism. These occupational stressors were associated with increased likelihood of experiencing mental health difficulties including PTSD, depression, anxiety, and alcohol use disorder (Carleton et al., 2020). Public safety personnel are also more likely to be exposed to potentially traumatic events, which may increase the likelihood of negative reactions to workplace demands.

Control and Stress

Shift Control

Autonomy in the workplace can be linked to greater overall job satisfaction, and flexibility in determining one's work hours is no exception. The ability to determine one's work hours, or shift flexibility, has been linked to positive health and better interpersonal outcomes. Specifically, shift flexibility has been linked to greater work-life balance, greater general health, fewer minor physical problems, less burnout, less distress, and less dissatisfaction (Fenwick & Tausig 2001). Among police officers, shift flexibility contributed to officers gaining more sleep between shifts, which in turn contributed to more alertness on the job (Eriksen & Kecklund, 2006). Notably, greater alertness of the job is associated with fewer fatigue-related accidents (Eriksen & Kecklund, 2006).

Role Strain and Stress

Role strain or overload occurs when an individual is tasked with performing multiple duties simultaneously (Creary & Gordon, 2016). Understandably, role strain may lead to an employee feeling overwhelmed, anxious, fatigued, and stressed. Requirements to report to multiple supervisors exacerbates the issues associated with role strain (Colligan & Higgins, 2005). While it is reasonable to assume that role strain often occurs within the workplace, most of the literature focuses on role strain across work and home, creating a work-family conflict. Research has indicated that individuals with multiple responsibilities (i.e., work, family, school) who report greater perceived role demand, also report higher levels of stress and role strain (Home, 1997). In a study of 9-1-1 Telecommunicators in California, poor work-life balance was the strongest job-related factor associated with perceived stress (Turner, Lilly, Gamez, & Kessler, 2019). Further, there was evidence that poor work-life balance increased stress, which then decreased life satisfaction and increased reports of mental and physical health symptoms. It is important to note that meta-analyses indicate that workplace support (i.e., organizational support or supervisor support) can mitigate the impact of the work-family conflict with little difference between instrumental (i.e., a more solution-focused approach) and emotional (i.e., providing encouragement and a place to talk) support (French, Dumani, Allen, & Shockley, 2019).

Recruitment, Retention, and Turnover

Adverse work conditions in the ECC have proven to directly affect the health and wellness of 9-1-1 Professionals. It is evident the combined elements of stress-related workplace conditions with critical incidents and work-life balance generate a significant amount of stress. However, that still does not cover the extensiveness of the emotional trauma experienced by 9-1-1 Professionals. An additional identifying stress factor discovered as having a negative impact on health is job burnout.

A valuable resource published by The Association of Public-Safety Communications Officials

(APCO) called Project RETAINS (Responsive Efforts To Address Integral Needs in Staffing) stated that approximately 97 percent of 9-1-1 Professionals would not achieve longevity in their career, eliminating any retirement benefits opportunity. Project RETAINS cited stress as the contributing factor for 9-1-1 Professionals not following through with this career path ("HR, Staffing, & Retention," n.d.). The role of a 9-1-1 Professional is instrumental in the safety of the public, therefore a reduction in staffing due to absenteeism or turnover can prove detrimental during life and death scenarios. The reasoning behind an employee's departure is instrumental in figuring out how to combat the extreme turnover rates.

With 9-1-1 Professionals being on the lower end of the pay scale spectrum, staffing shortages are certainly challenging for 9-1-1 leaders to conquer. According to statistics from the U.S. Bureau of Labor Statistics and NENA, the median annual salary in 2017 for a 9-1-1 Professional was listed at $39,640 (Mission Critical Partners, 2019).

References

Allen, T. D., Eby, L. T., Poteet, M. L., Lentz, E., & Lima, L. (2004). Career benefits associated with mentoring for protégés: A meta-analysis. *Journal of Applied Psychology, 89*(1), 127-136 doi: 10.1037/0021-9010.89.1.127

Alexander, D. M. (2006). How do 360-degree performance reviews affect employee attitudes, effectiveness and performance? Seminar Research Paper Series. Paper 8. Schmidt Labor Research Center.

Alterio, M (2020). Peer Support Programs- Mitigating the Emotional Effects of Vicarious Trauma Experienced by 911 Dispatchers. Thesis for: Masters of Science in Public Safety Leadership and Criminal Justice. Advisor: Dr. Stephen Ruegger. https://www.researchgate.net/publication/343403733_Peer_Support_Programs-_Mitigating_the_Emotional_Effects_of_Vicarious_Trauma_Experienced_by_911_Dispatchers.

Billett, S. (2003). Workplace mentors: Demands and benefits. *Journal of Workplace Learning*, 1- 8. doi: 10.1108/13665620310468441

Carleton, R. N., Afifi, T. O., Taillieu, T., Turner, S., Mason, J. E., Ricciardelli, R., Griffiths, C. T. (2020). Assessing the relative impact of diverse stressors among public safety personnel. *International Journal of Environmental Research and Public Health, 17*(4), 1234. doi:10.3390/ijerph17041234

Colligan, T. W., & Higgins, E. M. (2006). Workplace stress: Etiology and consequences. *Journal of Workplace Behavioral Health, 21*(2), 89-97. doi:10.1300/J490v21n02_07

Creary, S. J., & Gordon, J. R. (2016). Role conflict, role overload, and role strain. *Encyclopedia of Family Studies,* 1-6. John Wiley doi:10.1002/9781119085621.wbefs012

Einarsen, S. (2000). Harassment and bullying at work: A review of the Scandinavian approach. *Aggression and Violent Behavior, 5*(4), 379–401.

Eriksen, C. A., & Kecklund, G. (2007). Sleep, sleepiness and health complaints in police officers: The effects of a flexible shift system. *Industrial Health, 45*(2), 279-288. doi:10.2486/indhealth.45.279

Fenwick, R., & Tausig, M. (2001). Scheduling stress: Family and health outcomes of shift work and schedule control. *American Behavioral Scientist, 44*(7), 1179-1198. doi: 10.1177/00027640121956719

French, K. A., Dumani, S., Allen, T. D., & Shockley, K. M. (2018). A meta-analysis of work–family conflict and social support. *Psychological Bulletin, 144*(3), 284-314. doi: 10.1037/bul0000120

Gyllensten, K., & Palmer, S. (2005). The relationship between coaching and workplace stress: A correlational study. *International Journal of Health Promotion and Education, 43*(3), 97– 103. doi:10.1080/14635240.2005.10708048

Hassell, K. D., Archbold, C. A., & Stichman, A. J. (2011). Comparing the workplace experiences of male and female police officers: Examining workplace problems, stress, job satisfaction and consideration of career change. *International Journal of Police Science & Management, 13*(1), 37-53. doi: 10.1350/ijps.2011.13.1.217

Hodson, R., Roscigno, V. J., & Lopez, S. H. (2006). Chaos and the abuse of power: Workplace bullying in organizational and interactional context. *Work and Occupations, 33*(4), 382-416. doi: 10.1177/0730888406292885

Home, A. M. (1997). Learning the hard way: Role strain, stress, role demands, and support in multiple-role women students. *Journal of Social Work Education, 33*(2), 335-346.

Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2015). Perceived organizational support: A meta-analytic evaluation of organizational support theory. *Journal of Management, 43*(6), 1854–1884. doi:10.1177/0149206315575554

Nowack, K. M., & Mashihi, S. (2012). Evidence-based answers to 15 questions about leveraging 360-degree feedback. *Consulting Psychology Journal: Practice and Research, 64*(3), 157-182. doi: 10.1037/a0030011.

Offermann, L. R., Basford, T. E., Graebner, R., Jaffer, S., De Graaf, S. B., & Kaminsky, S. E. (2014). See no evil: Color blindness and perceptions of subtle racial discrimination in the workplace. *Cultural Diversity and Ethnic Minority Psychology, 20*(4), 499-507. doi: 10.1037/a0037237

Sue, D. W. (2010). Microaggressions in everyday life: Race, gender, and sexual orientation. *Psychology of Women Quarterly, 35*(2), 336-337. doi: 10.1177/0361684311401818

Sue, D. W., Alsaidi, S., Awad, M. N., Glaeser, E., Calle, C. Z., & Mendez, N. (2019). Disarming racial microaggressions: Microintervention strategies for targets, White allies, and bystanders. *American Psychologist, 74*(1), 128-142. doi: 10.1037/amp0000296

Timm, A. (2020). *People-driven leadership: How the best 9-1-1 centers inspire positive change.* Columbia: The Healthy Dispatcher.

Turner, K. D., Lilly, M. M., Gamez, A. M., & Kressler, K. (2019). Impact of work-related factors on stress and health among 911 calltakers and Professionals in California. *Annals of Emergency Dispatch and Response, 7*, 5-11.

Van den Brande, W., Baillien, E., Vander Elst, T., De Witte, H., Van den Broeck, A., &

Godderis, L. (2017). Exposure to workplace bullying: The role of coping strategies in dealing with work stressors. *BioMed Research International, 2017*, 1-12. doi: 10.1155/2017/1019529

5.2 Appendix B: Comprehensive, Relevant, and Ongoing Training

Contributors: Lynn Tazzioli, Anne Camaro, Erik Nelson, and Alexander Kruger, Sub-Workgroup: Comprehensive and Ongoing Training

Background

The suggestions set forth in the *NENA Standard to Protect the Wellbeing of 9-1-1 Professionals* reference comprehensive and ongoing training were included only after careful consideration of the minimum amount of annual training necessary for 9-1-1 Professionals to maintain their proficiency in their job skills, their resilience, and their adaptation to new technologies.

As more states begin to recognize 9-1-1 Professionals as First Responders, there is an equal need for ECCs to recognize and implement minimum training standards. The basic guidelines have been set forth by the National 9-1-1 Program Working Group on the subject (911.gov, 2016). The importance of these trainings cannot be understated and the suggestions within this document are in no form meant to replace or supersede the Recommended Minimum Training Guidelines for the 9-1-1 Telecommunicator. The intent of the training is to ensure all 9-1-1 Professionals are equipped with the right skills to handle these types of events correctly in the moment, thus reducing the chances for negative impacts later.

The reason comprehensive and ongoing training is so vital to the wellbeing of 9-1-1 Professionals is not only the importance of ensuring the same level of service is available nationally; it is very important to the individual human element of 9-1-1. 9-1-1 Professionals often feel responsible for the safety of the public and the responding units (Baseman et al., 2018). Equipping 9-1-1 Professionals with the tools they need to successfully complete their job can help reassure the on-duty employee he or she provided the best possible service despite the outcome.

The Comprehensive and Ongoing Training section of the *NENA Standard to Protect the Wellbeing of 9-1-1 Professionals* CSRP expands on the Recommended Minimum Training Guidelines by also requiring the following topics to be covered during the training:

- All topics identified throughout the standard
- Large scale events or duration incidents
- Events causing a depletion of resources
- Crisis callers
- Incidents involving verbal or physical abuse
- Aftermath of events or incidents
- Negative events in the news
- Handling abuse by callers or responders

- Responder injury or death

The above topics were identified as crucial to specifically cover based on the combined experience of the 9-1-1 Professionals included in the Comprehensive and Ongoing Training Sub-Workgroup. They are broad enough to allow individual PSAPs to tailor the subject to their local needs while being specific enough to ensure thorough coverage of potentially distressing events.

Large Scale Events or Duration Incidents

Large scale events or duration events include but are not limited to those that span longer than one shift, multi-jurisdictional events, natural or man-made disasters, etc.

Examples:

- [Baldwin County 911 fielding Hurricane Sally calls](#)
- [Some in Polaris mall during shooting couldn't reach 911; suspects still at large — updates](#)
- [Dispatchers weather the storm](#)

Events Causing a Depletion of Resources

Any event including but not limited to one in which resources from within a PSAPs jurisdiction(s) are depleted and mutual aid is needed from an outside agency.

Examples:
- [After 18 police and fire dispatchers sickened in COVID-19 outbreak, union leader says Jersey City should be doing more](#)
- [Tennessee Sends 9-1-1 Resources to Alabama for Hurricane Sally Recovery](#)
- [Chauvin trial puts focus on gaps in 911 system revealed during George Floyd riots](#)

Crisis Callers

Any event including but not limited to situations involving callers in a mental or physical crisis in which they are unable to mitigate the stress of the moment themselves and rely on the 9-1-1 Professional for assistance until field responders arrive and take over.

Example(s):
- [Dispatchers lauded for helping men trapped inside burning home](#)
- [Officers, dispatcher awarded for talking down young man who threatened suicide while on Facebook Live](#)

Incidents Involving Verbal or Physical Abuse

Any event including but not limited to overhearing a person being subjected to verbal, emotional, psychological, or physical abuse or harm. This situation often presents during domestic or other types of disputes between two or more parties.

Example(s):

- [Coweta Dispatcher Goes Extra Mile to Help Save Abducted Teenager](#)
- [Texting 9-1-1 Proves Lifesaving in Family Violence Cases](#)

Aftermath of Events or Incidents

Any event including but not limited to situations in which the aftermath of an incident becomes more problematic than the incident itself. This can include a power outage after a large storm, a public protest becoming out of control after an incident is covered by the media, or emotions felt by 9-1-1 Professionals as incidents begin to wind down.

Example(s):

- [Minneapolis expanding 911 services ahead of Derek Chauvin trial](#)
- [Jefferson County 911 prepares for worst in early morning 'Operation Bug Out' drill](#)

Negative Events in the News

Any event including but not limited to situations in which actions taken by public safety professionals are covered in the media in a negative light. Media can include professional news sources or amateur sources such as those with YouTube or other social media channels. These situations need not escalate to the point of protests or other types of violence to cause extra stress or unnecessary calls to PSAPs.

Example(s):

- [DC family wants transparency after botched 911 call results in death](#)
- [Prairie Village boy calling 911 for his mother waited more than 10 minutes: lawsuit](#)

Handling Abuse by Callers or Responders

Any event including but not limited to situations in which 9-1-1 Professionals are disrespected either over the phone or radio by callers or responders. Training should place emphasis on remaining calm and reminders to not take situations personally. Remaining professional in these situations is always the right response.

Example(s):

- [Yorkville Man Under Arrest for Alleged Threats](#)

- Watch Your Ps & Qs

Responder Injury or Death

Any event including but not limited to situations in which responders are harmed or killed in the line of duty. Responders can be from any department or agency; it does not need to be from the same jurisdiction for the loss to be traumatic.

Example(s):

- Who's Answering Phoenix Police 911 Operators' Calls For Help?

- Suspect captured in 'ambush-style' killings of Des Moines police officers

References

Baseman, J., Revere, D., Painter, I. *et al.* Impact of new technologies on stress, attrition and well-being in emergency call centers: the NextGeneration 9–1–1 study protocol. *BMC Public Health* 18, 597 (2018). https://doi.org/10.1186/s12889-018-5510-x

Bruner, B. (2021, March 4th). *Some in Polaris mall during shooting couldn't reach 911; suspects still at large — updates*. Retrieved from The Columbus Dispatch: https://www.dispatch.com/story/news/crime/2021/03/04/polaris-mall-shooting-updates-911-issues-delay-calls-inside-mall/6910915002/

Buccy, S. (2021, February 22nd). *Coweta Dispatcher Goes Extra Mile To Help Save Abducted Teenager*. Retrieved from News on 6: https://www.newson6.com/story/60343dd53ac9e20be81df404/coweta-dispatcher-goes-extra-mile-to-help-save-abducted-teenager-

D'Auria, P. (2021, March 30). *After 18 police and fire dispatchers sickened in COVID-19 outbreak, union leader says Jersey City should be doing more*. Retrieved from The Jersey Journal: https://www.nj.com/hudson/2021/03/after-18-police-and-fire-dispatchers-sickened-in-covid-19-outbreak-union-leader-says-jersey-city-should-be-doing-more.html

Digennero, H. (2021, February 17th). *Watch Your Ps & Qs*. Retrieved from The Journal of Emergency Dispatch: https://iaedjournal.org/watch-your-ps-qs/

Estes, C. (2021, March 8th). *Who's Answering Phoenix Police 911 Operators' Calls For Help?* Retrieved from 91.5 KJZZ: https://kjzz.org/content/1661480/whos-answering-phoenix-police-911-operators-calls-help

Gordon, J. (2020, September 22nd). *Baldwin County 911 fielding Hurricane Sally calls*. Retrieved from NBC 15 News: https://mynbc15.com/news/local/baldwin-county-911-fielding-hurricane-sally-calls

Isenberg, S. (2021, January 26). *Officers, dispatcher awarded for talking down young man who threatened suicide while on Facebook Live*. Retrieved from ABC 25: https://www.kxxv.com/hometown/mclennan-county/officers-dispatcher-awarded-for-talking-down-young-man-who-threatened-suicide-while-on-facebook-live

Lucas, J. (2019, November 6). *Texting 9-1-1 Proves Lifesaving in Family Violence Cases*. Retrieved from Rave Mobile Safety: https://www.ravemobilesafety.com/blog/texting-9-1-1-lifesaving-family-violence-cases

McCarthy, C., & Khomami, N. (2016, November 2nd). *Suspect captured in 'ambush-style' killings of Des Moines police officers*. Retrieved from The Guardian: https://www.theguardian.com/us-news/2016/nov/02/des-moines-police-two-officers-shot-dead-ambush-style-attacks

Moore, K. (2021, February 19th). *Prairie Village boy calling 911 for his mother waited more than 10 minutes: lawsuit*. Retrieved from The Kansas City Star: https://www.kansascity.com/news/local/article249376725.html

Moore, M. (2021, February 25). *Dispatchers lauded for helping men trapped inside burning home*. Retrieved from The Daily Item: https://www.dailyitem.com/news/snyder_county/dispatchers-lauded-for-helping-men-trapped-inside-burning-home/article_d10960b2-52b0-5744-9988-b945777aa002.html

Munsch, D. (2021, February 24). *Dispatchers weather the storm*. Retrieved from Wylie News: https://wylienews.com/2021/02/24/dispatchers-weather-the-storm/

Navratil, L. (2021, February 27). *Chauvin trial puts focus on gaps in 911 system revealed during George Floyd riots*. Retrieved from Star Tribune: https://www.startribune.com/chauvin-trial-puts-focus-on-gaps-in-911-system-revealed-during-george-floyd-riots/600028308/?refresh=true

Rahming, D. (2021, March 27th). *Minneapolis expanding 911 services ahead of Derek Chauvin trial*. Retrieved from Kare 11: https://www.kare11.com/article/news/local/minneapolis-911-services-ahead-of-derek-chauvin-trial/89-fe3e0995-485d-4dc1-b516-34e2b4e87744

Ramirez, S. (2020, November 22nd). *DC family wants transparency after botched 911 call results in death*. Retrieved from Fox 5 Washington DC: https://www.fox5dc.com/news/dc-family-wants-transparency-after-botched-911-call-results-in-death

Recommended 911 Minimum Training for Telecommunicators. 911.gov. (2016). https://www.911.gov/project_recommended911minimumtrainingfortelecommunicators.html.

Robinson, C. (2021, March 3rd). *Jefferson County 911 prepares for worst in early morning 'Operation Bug Out' drill*. Retrieved from Alabama: https://www.al.com/news/birmingham/2021/03/jefferson-county-911-prepares-for-worst-in-early-morning-operation-bug-out-drill.html

Tennessee Sends 9-1-1 Resources to Alabama for Hurricane Sally Recovery. (2020, September 22). Retrieved from Tennessee Department of Military: https://www.tn.gov/tema/news/2020/9/22/tennessee-sends-9-1-1-resources-to-alabama-for-hurricane-sally-recovery.html

Yorkville Man Under Arrest for Alleged Threats. (2021, March 29th). Retrieved from WSPY News: https://www.wspynews.com/news/local/yorkville-man-under-arrest-for-alleged-threats/article_d00ab94c-8fc5-11eb-9eb8-e3005cee5382.html

5.3 Appendix C: Sleep and Sleep Optimization

Contributors: Cory Lynch, ENP and Mary Whyte-Marshall, MSN RN-BC, Sub-Workgroup: Sleep & Sleep Optimization

Background

The majority of ECCs operate 24 hours a day, 7 days a week and by this very nature are staffed during hours outside of the normal circadian rhythm. The resulting lack of proper sleep can result in problems for both the 9-1-1 Professional and, by extension, the ECC itself. The following information includes problems caused by interrupted circadian rhythms, obstacles to proper sleep and solutions to achieving better sleep habits.

Sleep Defined

Merriam-Webster Dictionary defines sleep as:

> "The natural, easily reversible periodic state of many living things that is marked by the absence of wakefulness and by the loss of consciousness of one's surroundings, is accompanied by typical body posture (such as laying down with the eyes closed), the occurrence of dreaming, and changes in brain activity and physiological functioning, is made of cycles of non-REM sleep and REM sleep, and is usually considered essential to the restoration and recovery of vital bodily and mental functions."

There are four sleep stages that the body goes through. Stages 1, 2, and rapid eye movement (REM) consist of light sleep, while stages 3 and 4 comprise deep sleep. Stage 4 is the deepest level of sleep and is known as the healing stage when tissue growth and repair take place, important hormones are released to do their jobs, and cellular energy is restored. In healthy adults, about 13 to 23 percent of sleep is deep sleep. During deep sleep memories are consolidated, learning and emotions process, physical recovery occurs, blood sugar levels and metabolism balance out, the immune system is energized, and the brain detoxifies. Lack of deep sleep will keep these functions from occurring and can result in sleep deprivation (Leavitt, 2019).

Shift Work Sleep Disorder

Shift Work Sleep Disorder (SWSD) is defined by the Sleep Foundation as a circadian rhythm sleep disorder characterized by sleep problems that stem from working long or irregular hours. The term "shift work" refers to any work schedule that falls outside the hours of 7 am and 6 pm. While any shift worker can develop symptoms, the disorder primarily affects employees with night, early morning, or rotating shifts (Pacheco & Abhinav, 2020).

Symptoms of SWSD include difficulty sleeping or insufficient sleep and excessive sleepiness. Some consequences of SWSD include the increased likelihood of accidents and work related problems, irritability, impaired social functioning, poor cognitive performance, drug and alcohol

dependency, and other health related concerns including cancer, gastrointestinal problems, heart related issues, and metabolic problems (Cleveland Clinic, 2021) (Wickwire, Geiger-Brown, Scharf, & Drake, 2017).

It is clear from the symptoms and consequences of SWSD that it does pose a long-term negative impact on the 9-1-1 Professional and can have a negative impact on the services provided in an ECC.

Cortisol and Effects on Sleep

Cortisol is a steroid hormone that regulates a wide range of vital processes throughout the body, including metabolism and the immune response. It also has an important role in helping the body respond to stress. Cortisol is produced by a complex network known as the hypothalamic pituitary adrenal axis (HPA) (You and Your Hormones - an education resource from the Society of Endocrinology, 2019). The function of the ECC can be stressful and as a result the cortisol levels present in 9-1-1 Professionals would be high. Researchers have found when the HPA axis is overly active, it can disrupt sleep cycles causing fragmented sleep, insomnia, and shortened overall sleep time. These sleep disturbances can wreak further havoc on the HPA axis, distorting the body's production of cortisol. Studies have shown that insomnia and other forms of sleep deprivation cause the body to secrete more cortisol during the day, perhaps in an effort to stimulate alertness (Stanborough, 2020) (Brand, Holsboer-Trachsler, Naranjo, & Schmidt, 2012).

Accumulated Sleep Debt

The lack of proper sleep time over a period of time is known as sleep debt or sleep deficit and the longer a person goes without "catching up" the more pronounced the effects become. The effects of sleep debt most certainly pose a high risk for the 9-1-1 Professional and by extension the ECC through liability. A person that stays awake for more than 18 hours in a row or only gets 5 to 6 hours of sleep at a time for several days can exhibit reduced reaction times, reduced cognitive speed, and diminished decision-making abilities. Sleeping less than 7 hours per night on a regular basis increases the risk of diabetes, hypertension, heart disease, and stroke. Sleep deprivation is also linked to reduced immune functions, metabolic dysregulation, and weight gain (Newsom & Rehman, 2020).

Health Implications

The health implications of improper sleep are numerous and have been touched on above. The rates of chronic illnesses such as diabetes, heart disease, and cancer are higher in people who work in stressful jobs that require shift work. Additional negative impacts on a healthy lifestyle are included in this standard under *Obesity Eating Habits and Chronic Disease* and *Addiction and Self Medication*.

Recommendations for Optimization of Sleep

The ability to maintain an adequate amount of sleep is imperative to function at a level of alertness necessary to avoid a deficiency in the work being performed by the 9-1-1 Professional. The optimization of sleep is critical for workers in the 9-1-1 industry to function at a level that allows them to react quickly and perform necessary tasks while avoiding mistakes that can be life-altering not only for the 9-1-1 Professional, but also for those that rely on the decisions being made.

Work schedules should avoid back-to-back shifts if possible, for example working 11 pm to 7 am and returning to duty at 3 pm, to allow the 9-1-1 Professional adequate time to wind down and rest before returning to duty.

Optimizing sleep using the following information is key to overcoming the negatives listed above.

- Sleep Hygiene

    o Set a sleep schedule that normalizes sleep as an essential part of the day. This includes a set time to lay down and a set time to wake up; aim for consistency.

    o Prioritize sleep by avoiding electronics in the bedroom. Television, cell phones, tablets, and computers contribute to keeping the brain active and distract from the need for sleep. They may also interrupt sleep with changes in volume and notifications.

    o Darkness is key for the brain to sleep by producing melatonin. Room darkening shades, dimmed lighting, and eye masks help with this. Wearing sunglasses while driving home also helps to avoid the natural circadian rhythm wake cycle.

    o Reduction of noise that can disturb sleep is important. Ear plugs, white noise machines, a sleep sound generator, or a fan can help.

    o The temperature of the bedroom should be cool but comfortable; 65 degrees is optimal.

    o Avoid alcoholic beverages, smoking, caffeinated drinks, and heavy meals before sleeping.

- Medications and sleep aids

    o There are many prescription and nonprescription medications and sleep aids available. Use of these should be considered short-term to avoid dependence and to reduce any side effects. Consult your physician before use of any sleep aids.

- Other tips, tricks, and hints for optimizing sleep

- o Choice of bedding; comfortable sheets, blankets, and pillows help to fall asleep and stay asleep. Weighted blankets have a calming effect that may also aid in sleep.

- o Sleep applications (apps); while avoiding electronics in the bedroom is ideal, there are sleep apps available that may help. Consider a Delta Wave generator or a focused meditation/relaxation app.

- o Proper diet and exercise.

- o Avoid allowing pets to share the bed. Their movements can cause disturbed sleep.

- o Post signs on the door advising No Solicitation, Do Not Use Doorbell, or Nightshift Worker to avoid interruptions to sleep. Let neighbors know your work/sleep schedule.

Sleep optimization is individual, and these tips may not work for everyone. Find what works for you through trial and error and seek professional help from a board-certified sleep physician if serious or life-threatening conditions may exist.

References

Brand, S., Holsboer-Trachsler, E., Naranjo, J. R., & Schmidt, S. (2012, February 24). *National Library of Medicine*. Retrieved from Influence of mindfulness practice on cortisol and sleep in long-term and short-term meditators: https://pubmed.ncbi.nlm.nih.gov/22377965/

Cleveland Clinic. (2021, February 25). Retrieved from Cleveland Clinic: https://my.clevelandclinic.org/health/diseases/12146-shift-work-sleep-disorder

Leavitt, J. M. (2019, October 10). Retrieved from healthline: https://www.healthline.com/health/how-much-deep-sleep-do-you-need

Michael J. Breus, P. (2020, April 10). *Psychology Today*. Retrieved from https://www.psychologytoday.com/us/blog/sleep-newzzz/202004/the-effects-cortisol-your-sleep

Newsom, R., & Rehman, D. A. (2020, November 13). Retrieved from Sleep Foundation: https://www.sleepfoundation.org/how-sleep-works/sleep-debt-and-catch-up-sleep

Pacheco, D., & Abhinav, D. S. (2020, October 16). *Sleep Foundation*. Retrieved from https://www.sleepfoundation.org/shift-work-disorder/symptoms

Stanborough, R. J. (2020, July 10). Retrieved from healthline: https://www.healthline.com/health/cortisol-and-sleep

Wickwire, E. M., Geiger-Brown, J. P., Scharf, S. M., & Drake, C. L. (2017). Shift Work and Shift Work Sleep Disorder-Clinical and Organizational Perspectives. *CHEST*, 1156-1172.

You and Your Hormones - an education resource from the Society of Endocrinology. (2019, January). Retrieved from https://www.yourhormones.info/hormones/cortisol/

5.4 Appendix D: 9-1-1, Obesity, & Eating Habits

Contributors: Michelle Lilly, Erica Stolhand, and Nicole Janey, Sub-Workgroup: Obesity & Eating Habits

Background

This is a resource document to address the trend of obesity and poor eating habits within 9-1-1 centers, the factors that contribute to the issue, and recommendations for addressing the issue.

The Obesity Problem

Obesity is a growing problem in the United States, affecting the health of many adults throughout the country. Nearly 30% of adult workers in the U.S. are obese (Luckhaupt et al., 2014), and an additional 36% of adult workers are considered to be overweight (Park et al., 2014).

First responders, including 9-1-1 Professionals, are at particular risk for weight gain and obesity. 71-89% of active police officers are either overweight or obese, and obesity has been reported in 25-39% of officers (Zimmerman, 2012). A study of new recruits for fire and ambulance services found that about 44% of the sample was overweight, and 33% was obese (Tsismenakis et al., 2009). Among 9-1-1 Professionals, researchers found that 53.4% of participants were obese, with an additional 29.0% who were in the overweight category (Lilly et al., 2016).

Impacts of Obesity

Obesity and weight concerns are a significant predictor of many chronic diseases, including prediabetes mellitus, diabetes mellitus, coronary heart disease, depression, hypertension, high cholesterol, sleep apnea and respiratory problems, stroke, gallbladder disease, osteoarthritis, some cancers (endometrial, breast, colon, kidney, esophagus, gallbladder, pancreas, and liver), and metabolic syndrome (Yarborough et al., 2018).

Obesity and weight concerns have been connected with job performance outcomes that are quite concerning. Research has shown that employees who are considered normal weight cost an average of $3,830 per year in combined medical, sick days, short-term disability, and workers compensation claims, while employees who are considered obese cost an average of $8,067 per year (Van Nuys et al., 2014). Obesity is also associated with a higher level of absenteeism (Yarborough et al., 2018).

Risk Factors for Obesity

Among working adults, risk factors for obesity can be divided into social stressors, psychosocial work, and work conditions (Yarborough et al., 2018). Social stressors that

enhance risk for obesity include conflict with coworkers and hostile work environments. Psychosocial stressors that increase risk for obesity in the workplace include greater job demands, low job control, low decision control (i.e., having limited "say" in one's job), and recurrent exposure to trauma and distress. Work conditions associated with increased risk for obesity include long work hours/shifts, shift work scheduling, night shifts, and sedentary behavior. These factors are also frequently connected to poor sleep quantity and quality, which have been robustly linked to risk for obesity (see below).

It is also important to note that working within an environment in which weight concerns and obesity are prevalent is also a risk factor. For instance, having a close friend who is obese increases the likelihood of obesity by 45%. Further, having more contact with individuals who are obese increases the likelihood of obesity by 71%. There is evidence to suggest that environments marked by a high rate of obesity experience altered social norms in eating habits and beliefs that enhances risk for obesity (Christakis & Fowler, 2007).

9-1-1 Specific Risk Factors

Given these findings, it is perhaps unsurprising that there is a high rate of obesity and weight concern among 9-1-1 Professionals. Risk factors that may be especially salient for 9-1-1 Professionals include:

- **Long work hours**. Research from a large survey of working adults in the U.S. found that working more than 40 hours per week is significantly associated with obesity, even after adjusting for demographics and health behaviors (Luckhaupt et al., 2014).

- **Night shift work**. There is some evidence that working overnights may be associated with an even higher risk for obesity than rotating shift work (Sun et al., 2017). Further, night shift work disrupts the body's natural circadian rhythm, which may increase risk for obesity by promoting excess caloric intake in response to reduced sleep, food intake at internal biological times when metabolic physiology is not prepared, decreased energy expenditure when wakefulness and sleep are initiated at incorrect internal biological times, and disrupted glucose metabolism during short sleep and circadian misalignment (McHill & Wright, 2017). A recent meta-analytic study showed that when comparing permanent night shift workers to individuals who rotate or inconsistently work night shifts, permanent night shift workers showed increased risk of obesity and/or being overweight by 23%, and the excess risk for abdominal obesity specifically was 35% (Sun et al., 2017).

- **Sedentary nature of the job**. A recent study of firefighters revealed a one-to-one association between prolonged sedentary work and obesity (Choi et al., 2016).

- **Mental health conditions**. Among 9-1-1 Professionals, 17-25% screen positive for depression, PTSD, or both. This study further found that psychological health,

including problematic alcohol use and symptoms of depression and PTSD, had a strong association with physical health, such as higher BMI and more physical health complaints (Lilly at al., 2016).

- **Sleep.** There is a longstanding history of poor sleep among first responders, including 9-1-1 Professionals. This may significantly enhance risk for obesity, as poor sleep duration or sleep debt (i.e., the number of total hours spent sleeping) may increase food intake, decrease energy expenditure, and alter levels of appetite-regulating hormones, such as leptin and ghrelin (Bayon et al., 2014; St-Onge, 2017).

- **Caffeine & Energy Drinks.** While consumption of caffeine has not been linked to risk for obesity, and in fact is linked with lower risk for obesity across studies (Tabrizi et al., 2018), chronic use of high levels of caffeine can significantly impact sleep, which then enhances risk for obesity. Many individuals fail to consider the half-life of caffeine and may consume caffeine shortly before expecting to sleep. Energy drinks have shown some negative effects, such as increasing acute blood pressure (Sachin et al., 2016), affecting overall health. A large portion of the overlap between caffeinated or energy drink beverages and weight gain lies in the sugar content. Energy drinks with high sugar content and/or carbonated sodas increase risk for weight gain and obesity.

- **Alcohol consumption.** Though statistics on the prevalence of alcohol use disorders and consumption among 9-1-1 Professionals cannot be located, problematic alcohol use has been noted in both police officers and firefighters. Likely due to the increased caloric intake associated with high alcohol consumption, as well as the ways in which alcohol consumption affects sleep quality, individuals who are problem drinkers, or drink heavily, are at increased risk for weight gain and obesity (Traversy & Chaput, 2015).

- **Emotional eating.** Eating in response to negative emotions, or emotional eating, is frequently seen among individuals in stressful occupations and among individuals with low control of their environment (van Strien, 2018). These behaviors often develop in childhood but may also develop in reaction to challenging environments in adulthood. Emotional eating is connected to poor emotional awareness (termed alexithymia) and poor emotion regulation. Over time, reliance on avoidance coping to continue in the challenging work of 9-1-1 may enhance risk for alexithymia and impact emotional responding. Emotional eating in response significantly increases risk for weight gain and obesity.

- **Stress Eating (Poor interoceptive awareness).** Low interoceptive awareness means that an individual has reduced sensitivity to the body's internal cues of hunger and satiety. Low interoceptive awareness may develop among 9-1-1 Professionals because they frequently ignore their bodily cues due to work demands (i.e., suppressing hunger because of an ongoing crisis within the center) and fill up on foods when they have the opportunity to eat. This opportunist eating can lead to a reduction in intentional food choices in regard to quantity and nutritional value, which can lead to a low level of intuitive eating. However, frequent suppression of hunger and satiety cues can lead to low awareness over time, making it difficult to recognize when one is hungry (versus bored or tired) and/or full. Poor interoceptive awareness has been strongly associated with risk for weight gain and obesity (Clémence et al., 2019; 2020). The ECC environment often promotes this low awareness, as there can be little to no options for food storage and preparation, no scheduled breaks, and the peer pressure to participate in group take out or meals that are not nutritionally balanced.

- **Binge eating.** One consequence of repeatedly missing opportunities to eat may be later bingeing on food, particularly food that is conveniently accessed. Convenient foods (i.e., fast food or "gas station" meals) are high in processed ingredients that have been connected to weight gain and obesity. Individuals who are overweight or obese are more likely than those within healthy ranges to report current and lifetime histories of binge eating (Duncan, Ziobrowski, & Nicol, 2017), and 10.7 to 24.8% of obese individuals report a lifetime history of binge eating behavior (Hudson, Hiripi, Pope, & Kessler, 2007). Notably, binge eating is different from stress eating, in that individuals who engage in binge eating are making an intentional decision to engage in the behavior, whereas stress eating occurs with less awareness or intention.

Recommendations

While many factors that enhance risk for obesity among the 9-1-1 work environment (i.e., shift work, overnight shifts) cannot be altered, the 9-1-1 work environment can promote better health and reduce the risk of obesity (and therefore chronic disease) by incorporating some or all of the following resources. Each center will need to review their own particular needs and assess the effectiveness of local resources available to them. It is important to research and vet resources used in order to evaluate their effectiveness and benefits for the sake of the center.

- **Weight loss programs**. Though all programming should be optional, Jerome et al. (2020) revealed that a 10-week weight loss program for firefighters wishing to lose weight was effective using "commercially available apps with support from a student coach-in-training and evidence-based weight loss recommendations is a feasible approach to support career firefighters in their weight loss efforts." In addition to apps, there are many weight loss programs available through medical practices,

gyms, and privately owned wellness centers. Local EAPs may also have resources available. Medically based weight loss programs may require copays and/or referrals, but otherwise be covered under insurance. Some gyms offer discounts for first responders or have special pricing that includes gym access as a part of a weight loss program.

- **Nutritional counseling with emphasis on sugar-rich foods, caffeine half-life, and convenience eating.** Check with a local doctor's office to find referrals to nutritionists that are covered by insurance with little to no cost to the subscriber.

- **Removal or limiting unhealthy foods from the workplace.** Encourage healthy recipe swaps. Encourage management to allow shifts to cook or host healthy meals together. Set up a community fruit bowl. Try to encourage local businesses or community members who like to provide snacks/meals to keep healthy eating in mind. Talk with the vending machine company about stocking healthier options. Provide access to a water cooler in the ECC.

- **Convenient access to a microwave and refrigerator.** Allow those who want to bring their own healthy or homemade meals an easy and safe way to store them.

- **Access to gym equipment.** Check with other local agencies to see if they would consider allowing access to their gym equipment, if available. Consider under-desk bicycles and/or treadmills, resistance bands, or other small pieces of equipment that could be kept at the desk or within the ECC.

- **Center based fitness education and competitions.** Create step or other movement challenges. Promote it by walking circles in the ECC. Create daily or weekly workout routines that provide light stretches and body-weight movements that can be performed while sitting/standing at the desk.

- **Training on sleep hygiene, mindfulness/intuitive eating.** Start training new hires on caffeine consumption, sleep deprivation, and side effects of shift work during their on-boarding training. Encourage fellow shift workers to participate.

- **Training on mental health.** Promote access to intervention services through EAP or other methods.

- **Therapy.** Depending on an individual's experience with nutrition and success at modifying unhealthy eating habits, seeking professional counseling may be beneficial for some who want to address the root problem that may be further complicated by the ECC environment.

- **Stress management training.**

- **Wellness Breaks.** Some departments allow their officers/firefighters to use their break to workout. Speak with your management/unions about allowing 9-1-1 Professionals to do the same.

References

Bayon, V., Leger, D., Gomez-Merino, D., Vecchierini, M., & Chennaoui, M. (2014). Sleep debt and obesity. *Annals of Medicine, 2014*, 1 – 9.

Choi, B., Dobson, M., Schnall, P., & Garcia-Rivas, J. (2016). 24-hour work shifts, sedentary work, and obesity in male firefighters. *American Journal of Industrial Medicine*, *59*(6), 486–500. https://doi.org/10.1002/ajim.22572

Christakis, N. A., & Fowler, J. H. (2007). The spread of obesity in a large social network over 32 years. *New England Journal of Medicine, 357*, 370 – 379.

Clemence, W., Nandrino, J., Doba, K., … Gandolphe, M. (2020). Interoceptive reliance as a major determinant of emotional eating in adult obesity. *Journal of Health Psychology*, Advance online publication.

Clemence, W., Gandolphe, M., Roussel, M., Verkindt, H., Pattou, F., & Nandrino J. (2019). Difficulties in emotion regulation and deficits in interoceptive awareness in moderate and severe obesity. *Eating and Weight Disorders, 24*, 633 – 644.

Duncan AE, Ziobrowski HN, Nicol G. The Prevalence of Past 12-Month and Lifetime DSM-IV Eating Disorders by BMI Category in US Men and Women. European Eating Disorders Review. 2017; 25(3):165–171. [PubMed: 28127825]

Gu, J. K., Charles, L. E., Burchfiel, C. M., Fekedulegn, D., Sarkisian, K., Andrew, M. E., Ma, C., & Violanti, J. M. (2012). Long Work Hours and Adiposity Among Police Officers in a US Northeast City. *Journal of Occupational and Environmental Medicine*, *54*(11), 1374–1381. https://doi.org/10.1097/jom.0b013e31825f2bea

Hartley, T. A., Burchfiel, C. M., Fekedulegn, D., Andrew, M. E., & Violanti, J. M. (2011). Health disparities in police officers: Comparisons to the U.S. general population. *International Journal of Emergency Mental Health*, *13*(4), 211–220.

Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry, 61*, 348–358.

Jerome, G. J., Lisman, P. J., Dalcin, A., & Clark, A. (2020). Weight management program for first responders: Feasibility study and lessons learned. *Work, 65*, 161 – 166.

Lilly, M. M., London, M. J., & Mercer, M. C. (2016). Predictors of Obesity and Physical Health Complaints Among 911 Telecommunicators. *Safety and Health at Work*, *7*(1), 55–62. https://doi.org/10.1016/j.shaw.2015.09.003

Luckhaupt, S. E., Cohen, M. A., Li, J., & Calvert, G. M. (2014). Prevalence of obesity among U.S. workers and associations with occupational factors. *American Journal of Preventive Medicine*, *46*(3), 237–248. https://doi.org/10.1016/j.amepre.2013.11.002

McHill, A. W., & Wright, K. P. (2017). Role of sleep and circadian disruption on energy expenditure and in metabolic predisposition to human obesity and metabolic disease. Obesity Research, 18 Suppl 1, 15 – 24.

Park, S., Pan, L., & Lankfort, T. (2014). Relationship between employment characteristics and obesity among employed U.S. adults. *American Journal of Health Promotion, 28*(6), 389-396. https://doi.org/10.4278/ajhp.130207-quan-64

Poston, W. S. C., Haddock, C. K., Jahnke, S. A., Jitnarin, N., Tuley, B. C., & Kales, S. N. (2011). The Prevalence of Overweight, Obesity, and Substandard Fitness in a Population-Based Firefighter Cohort. *Journal of Occupational and Environmental Medicine, 53*(3), 266–273. https://doi.org/10.1097/jom.0b013e31820af362

Sachin, S. A., Chu, B. W., Lacey, C. S., Riddock, I. C., Lee, M., & Dargush, A. E. (2016). Impact of acute energy drink consumption on blood pressure parameters: A meta-analysis. *Annals of Pharmacotherapy, 50*, 808 – 815.

Smith, E. C., Holmes, L., & Burkle, F. M. (2019). Exploring the Physical and Mental Health Challenges Associated with Emergency Service Call-Taking and Dispatching: A Review of the Literature. *Prehospital and Disaster Medicine, 34*(6), 619–624. https://doi.org/10.1017/s1049023x19004990

Solovieva, S., Lallukka, T., Virtanen, M., & Viikari-Juntura, E. (2013). Psychosocial factors at work, long work hours, and obesity: a systematic review. *Scandinavian Journal of Work, Environment & Health, 39*(3), 241–258. https://doi.org/10.5271/sjweh.3364

St-Onge, M. P. (2017). Sleep-obesity relation: Underlying mechanisms and consequences for treatment. *Obesity Reviews*.

Sun, M., Feng, W., Wang, F., Li, P., Li, Z., Li, M., Tse, G., Vlaanderen, J., Vermeulen, R., & Tse, L. A. (2017). Meta-analysis on shift work and risks of specific obesity types. *Obesity Reviews, 19*(1), 28–40. https://doi.org/10.1111/obr.12621

Tabrizi, R., Saneei, P., Lankarani, K. B., … , Asemi. Z. The effects of caffeine intake on weight loss: a systematic review and dos-response meta-analysis of randomized controlled trials. *Critical Reviews in Food Science and Nutrition, 59*, 2688 – 2696.

Traversy, G., & Chaput, J. (2015). Alcohol consumption and obesity: An update. *Current Obesity Reports, 4*, 122 – 130.

Tsismenakis, A. J., Christophi, C. A., Burress, J. W., Kinney, A. M., Kim, M., & Kales, S. N. (2009). The obesity epidemic and future emergency responders. *Obesity, 17*(8), 1648–1650. https://doi.org/10.1038/oby.2009.63

Van Nuys, K., Globe, D., Ng-Mak, D., Cheung, H., Sullivan, J., & Goldman, D. The association between employee obesity and employer costs: evidence from a panel of U.S. employers. *American Journal of Health Promotion,* 28, 277 – 285.

Yarborough, C. M., Brethauer, S., Burton, W. N. … Ording, J. (2018). *Obesity in the workplace: impact, outcomes, and recommendations. Journal of Occupational and Environmental Medicine*, 60, 97 – 107.

Zimmerman, F. H. (2012). Cardiovascular Disease and Risk Factors in Law Enforcement Personnel: A Comprehensive Review. *Cardiology in Review*, *20*(4), 159–166. https://doi.org/10.1097/CRD.0b013e318248d631

5.5 Appendix E: Managing Stress related to PSAP Personnel Exposure to Incident-Related Imagery

Contributors: D. Jeremy DeMar, Jim Marshall, and Troy Cordle, Sub-Workgroup: Incident-Related Imagery

Background

In a profession wrought with stress, leaders in emergency communications are seeking out new and innovative ways of providing needed support services to their personnel. While the types of stress our nation's 9-1-1 Professionals (herein also referred to as "telecommunicators") are exposed to varies, until just recently, one constant has been the mechanism by which stressful information arrives in our centers. That audio-only delivery system has been the primary interface between a person experiencing an emergency and PSAP personnel since the first 9-1-1 call was placed over fifty years ago.

The majority of the nation's ECCs are still operating in legacy, audio-only settings. Rapid advancements in technology however, on the part of industry partners and integrators is flooding the 9-1-1 community with new and unique product offerings, creating pathways to allow visual information from an incident scene to flow freely to call center personnel. This visual information, Incident-Related Imagery (IRI), will completely change the way in which 9-1-1 Professionals interact with 9-1-1 callers. Where previously what was being heard or conveyed verbally during a 9-1-1 call was the only way telecommunicators could determine what was going on at an incident scene, 9-1-1 callers now have the ability to send IRI in the form of still images, pre-recorded video, and streaming media to the telecommunicator.

The arrival of IRI in the ECC not only creates a major change in the way 9-1-1 Professionals receive, process, and prioritize emergency information; it also increases the group's exposure to greater and more diverse types of work-related stress. As a result, there is a strong likelihood stress management practices will have to be adjusted to adapt to this changing work environment.

Definition

Incident-Related Imagery is defined as any form of visual information associated with an incident scene that is delivered via any medium to public safety personnel (DeMar, 2017).

Examples of IRI include but are not limited to still images captured on a smartphone, pre-recorded video captured by CCTV, live streaming video from a wireless device or via an application on a wireless device, and live video from transportation traffic cameras.

Though there are a variety of IRI types, there are only two ways IRI will ultimately arrive in the ECC; solicited or unsolicited.

Solicited IRI is requested by an ECC, generally during a 9-1-1 call, when the call-taker determines incident-related imagery from the scene of an event will aid in the public safety

response to said situation. Once this determination has been made, the call-taker will create a virtual path to the 9-1-1 caller, generally by sending a link to the caller's phone or by having the caller access a specific website, after which the caller is able to send still images, pre-recorded video, or live video from the scene. In this situation, the 9-1-1 call-taker is the primary control agent for image information coming into the center.

Unsolicited IRI is image information arriving on a 9-1-1 call-taker's screen automatically or without the approval of the call-taker. In this situation, there is little to no control on the part of the call taker and the image information passes freely into the PSAP, having not been vetted for public safety prior to its arrival.

Current Mental Health of 9-1-1 Professionals

9-1-1 Professionals operating in the legacy 9-1-1 environment experience a striking level of PTSD, depression, and other stress-related health risks among:

- Lilly and Allen (2015) found that 24.6% of 808 telecommunicators from throughout the United States who completed screening tools using civilian scoring systems, acknowledged symptoms consistent with a diagnosis of PTSD, almost four to five times the rate among the general public.

- Lilly and Allen (2015) found that those most susceptible to PTSD among 9-1-1 Professionals were those highest in psychological inflexibility defined as "a tendency to deny one's emotional experiences rather than be open to them" (Lilly & Marshall, 2018). This finding runs contrary to practicing traditional responder stoicism. It strongly suggests that telecommunicators should be supported and encouraged to be open to recognizing and seeking help for emotional distress versus suppressing emotion associated with traumatic exposures.

- Lilly and Allen found a rate of clinical depression also in 24% of these telecommunicators, a rate double that of the general public. Depression is known to be a greater risk among those with PTSD (Peckel, 2015).

- An early study of 9-1-1 Professionals found a rate of Compassion Fatigue (being a combination of secondary traumatic stress impacts and burnout) at 16.3% (Troxell, 2008).

- The current severity of these struggles with mental health among our telecommunicators is related to their work experience in the current legacy 9-1-1 center prior to exposure to potentially traumatic experiences with IRI. If they are exposed to IRI and all other factors remain constant, without careful management of these exposures, we anticipate an increase in these incident rates.

Evaluating Predictable IRI Risks to 9-1-1 Mental Health

Current understanding from the field of traumatology about factors producing traumatization can equip us to predict some of the psychological risks of 9-1-1 Professionals' exposure to potentially traumatic events via IRI. Possible risk factors include:

- *Increased Emotional Labor.* Experiencing callers through real-time video and other IRI will represent an increase in multisensory input by the telecommunicator. Whereas traditionally they are listening to the caller and using their visual imagination, they would now be directly observing the caller's distress. This more intense emotional input could increase the emotional labor required of them. (Emotional labor has to do with the amount of psychological drain experienced in response to a task). The greater the energy drain from increased emotional labor, the greater the likelihood of burnout (Troxell 137).

- *Increased Risk of Traumatization.* Call mastery can buffer the impacts of traumatic stress as discussed earlier; yet the greater the intensity of the exposure, the greater the likelihood of traumatization may be for an individual. The real-time image of a person completing suicide with a firearm who appears (through the monitor) to be only a foot or two away, may be a significantly greater intensity of exposure than if only heard as gunfire on the phone. *Potential Increase in Violent Behavior among Telecommunicators.* Empirical research has shown that extensive exposure to violence through entertainment, video games, cell phones, and the internet can increase violent behavior in both youth and adults, depending on a variety of personal factors (Alia-Klein, 2014; Heusmann, 2008). Accordingly, 9-1-1 Professionals exposed over time to violent IRI in the line of duty could be at higher risk of enacting personal violence compared to peers not exposed to these stimuli. Many factors in individual brain functioning, life experiences and influences can either mitigate or increase such risk.

- *Potential Increase in Risk of Depression among Telecommunicators.* Beyond concern for increased violence and traumatic stress impacts, common sense extrapolation from the research above would suggest that if a subset of 9-1-1 Professionals is at greater risk of violence by exposure to violent stimuli through electronic media, then comparable increases in risks related to depression could be assumed with extensive exposure through IRI to individuals suffering from severe depression and suicidality. Research on Vicarious Traumatization among 9-1-1 Professionals already supports risk of compassion fatigue related to long-term exposure to caller suffering (Troxell, 2008). Further research should rule out similar risks for 9-1-1 Professionals specific to depression and calls from individuals on the verge of completing such a suicide attempt. Seeing the individual in such moments (e.g., lifting and lowering a weapon) whether or not the callers completes the suicide may be traumatizing since the

9-1-1 Professional will anticipate them following through visual imagery of that moment may still become stored in the brain despite a positive outcome.

- In cases like this, there may be *less likelihood of positive hormonal changes*, discussed earlier since the telecommunicator may have now internalized vivid gruesome images of the person's completed suicide.

- *Increased Triggering of Previous Traumas.* Those with a history of traumatization are generally more at risk of developing PTSD in response to later traumatic exposures (Halligan and Yehuda 1). We can expect that the greater the intensity of these later exposures (as through IRI) to people in dangerous or tragic circumstances, the greater the likelihood of triggering prior traumas. More frequent triggering would then produce greater risks of compromised ability to concentrate and think optimally during such calls.

- *Greater Loss of Control.* Another stressor related to IRI depends on the degree of participation 9-1-1 Professionals have in determining its use at the PSAP, and what those terms of use are. If telecommunicators do not have any option in how to manage use of IRI (e.g., to turn the function on or off on specific calls), their sense of control will be greatly diminished. The less control or influence a person feels they have in the face of a stressor, the greater the likelihood of serious stress impacts. Therefore, industry leaders and 9-1-1 directors should engage frontline 9-1-1 Professionals as they define the terms by which IRI will be used.

- *Potentially Unrealistic Scrutiny.* Additional stress for the telecommunicator is anticipated if they are held responsible for maintaining visual contact with the caller and elements of the scene that may appear on screen. The nature of dispatching a call requires the telecommunicator to rapidly interact with and shift their focus between multiple monitors often while communicating with field responders and their coworkers at the same time. Maintaining constant visual contact with a caller on scene will likely be impossible. Additionally, in contrast to field responders' tasking and training, 9-1-1 Professionals are not trained to visually appraise specific on-scene cues and clues with investigative intent, nor does remote viewing of a dynamic scene enable such effective appraisal. For all these reasons it is unrealistic to expect a 9-1-1 Professionals to identify or be held accountable for reporting all pertinent visual data from the scene.

Those predictably at highest risk of psychological impacts of IRI Exposures include those with:

- History of traumatic exposures
- History of mental illness
- History of PTSD

Potential Impacts of IRI Exposure on Staffing

The arrival of IRI in the PSAP/ECC creates a variety of administrative and operational challenges. Of greatest concern to many serving in an emergency communications leadership capacity is the retention of current personnel and recruitment of new team members, once graphic or potentially objectionable material begins arriving in the center.

Recruitment and Retention

With staffing already a major problem in the 9-1-1 profession, exposing personnel to IRI may serve to make the work environment more stressful, creating a greater desire on the part of some team members to depart. Since many choose to join the public safety communications profession based on recommendations from friends and family members working in the field, with many 9-1-1 Professionals feeling apprehensive about the new visual aspect of their roles, those responsible for recruiting new team members based on these types of referrals may see a reduction of candidates as a result.

Team members are an agency's greatest asset; thus, efforts made to retain veteran personnel and recruit top-notch candidates should be considerate and comprehensive. Since no two centers are identical in how they operate, a cookie-cutter approach to IRI preparation and response will not be possible. Each organization should consider the following activities:

- Evaluate the needs of its team members on an individual level
- Consider making changes to established policies and procedures
- Alter current training practices to include some form of IRI content at an awareness level
- Adequately prepare its command and supervisory staff to work with and support the needs of frontline personnel in this new environment.

Only with this additional level of attention can we expect veteran personnel to remain. Accordingly, in the final section of this guide we provide more detailed steps to help PSAPs achieve these activities.

Current personnel recruitment methods will require a similar degree of review and alteration. Whereas previously little to no experience was required of our entry-level candidates, the additional sensory input (seeing in addition to hearing) what is occurring on scene may require additional critical and analytical thinking skills for those joining the profession.

If modifications to legacy hiring practices are successful, and appointees selected from a pool of candidates have more practical experience and increased critical and analytical thinking ability, the short and long term training plans for these individuals will have to receive a similar degree of modification.

PSAP Responsibility for Wellbeing of 9-1-1 Professionals in the NG9-1-1 Environment

Given these potential risks related to IRI exposures, 9-1-1 Professionals need assurance that stress risk factors related to IRI will be strategically evaluated with their input, prior to and throughout implementation of IRI. Failure to explore such risks with their involvement could result in lower retention rates among those most anxious. However, risks related to IRI can be managed to decrease anxiety and support retention. Anxiety among 9-1-1 Professionals about future 9-1-1 stressors is driven in part by their cumulative experience of current 9-1-1 stressors (as evidenced by the high rates of PTSD and depression noted above). So, IRI stress assessment and planning calls for a commitment to comprehensive PSAP stress management efforts.

Prior to launching IRI capabilities, every PSAP should consider establishing policies and procedures to assure that 9-1-1 Professionals can effectively manage their exposure to these stimuli to prevent unnecessary psychological fallout. The following guidance is offered to assist PSAPs in conducting this PSAP stress management initiative.

Managing Stress related PSAP Personnel Exposure to IRI[47]

STEP 1: *Provide Fundamental Resilience Resources to PSAP Personnel.* Many 9-1-1 centers currently have no foundational preventive stress resilience measures in place. The impacts of new 9-1-1 stressors such as IRI can be buffered when a solid foundation for management of *current* 9-1-1 stressors is already in place. The NENA *Standard to Protect the Wellbeing of the 9-1-1 Professional* guides the development of this foundation. It defines the *resources* that 9-1-1 centers SHALL provide as part of their *Comprehensive Stress Resilience Plan* (CSRP). Among these resources is CISM (Critical Incident Stress Management)[48] and several documents offered as Appendices to the Standard provide PSAPs with concrete guidance to implement other key resources including:

- Evidence-Based Treatments for traumatic stress and other specific conditions for which 9-1-1 Professionals are at high risk including clinical depression, as called for in the CSRP.
- Development of PSAP Peer Support Programs.
- Assessing and securing counseling for personnel from the agency's Employee Assistance Program (EAP).

STEP 2: *Identify and Manage Current Work Conditions.* While the 9-1-1 center's CSRP will provide needed resources to manage stress, PSAPs also need to know how employees are

---

[47] The guidance offered in steps one through six below, is excerpted and adapted, with author's permission, from The Resilient 9-1-1 Professional. (See full citation in the References section of this document.)

[48] While NENA's Master Glossary and this standard offer a basic definition of CISM, a more extensive explanation is needed to assure full understanding of the model.   See A Primer on Critical Incident Stress Management: https://icisf.org/a-primer-on-critical-incident-stress-management-cism/

impacted by six *work conditions* in the current 9-1-1 workspace (pre-NG9-1-1). Below we list each one and give an abbreviated description of how it can be managed to de-stress employees rather than increase their stress levels, according to the Health Safety Executive (McKay, et al, 2004):

1. Change: should be well communicated and managed.

2. Demand: workload should be realistic and not consistently exceed the resources of the worker.

3. Control: the worker is able to have appropriate input into policies that define their work.

4. Role: the worker's role is clearly defined and does not clash with the other roles that they are given.

5. Relationships: open, honest, and respectful communication is welcomed between and within all levels of the organization.

6. Support: encouragement and needed resources are provided to manage stress (Mackay, 91).

If left unmanaged, these conditions can significantly worsen stress, performance, and costs metrics (including worsening retention and increased costs related to sick leave and FMLA). But the *good news* is that systematic evaluation of these six conditions can lead to effective management of each condition; and this can result in reduced worker stress and improvement in all major metrics of PSAP success including: improved personal well-being, morale, performance, and cost containment. Implementation of this systematic evaluation is urged.

Note that these first two stress management steps enable PSAPs to build their foundation of support in managing PSAP stressors related to *current 9-1-1 demands*. Without such a foundation, current risks are apt to compound the impacts of new stressors in the NG9-1-1 workspace such as IRI. Yet, with a 9-1-1 center's CRWP in place, along with their plan for effective management of *pre*-NG9-1-1 work conditions, new stressors in the NG9-1-1 workspace can be managed more successfully.

STEP 3: Once you have accomplished Step 2, you will be familiar with the Six Conditions and how to plan for improved stress management related to each *current* condition in the ECC. In Step 3 we can use the Six Conditions model again; but this time as a tool to predict and plan specifically for optimal management of IRI as a *future* stressor.

Below, we propose an approach you can use to manage each work condition to optimize IRI use in your PSAP. Our goal here was not to create a definitive list of the best steps, but to provide examples of how you can use this model. You can arrive at the best plans for optimizing management of IRI by using this method in team discussions involving personnel

from all levels of your agency. Note that once your PSAP has gained experience with IRI, these plans can be revised to fit the actual lived experience.

1) Manage *CHANGE* related to IRI:

Approach: PSAP Leader and personnel explore risk factors associated with IRI prior to implementation. This exploration enables better management of Change by more carefully pursuing three activities:

- *Planning* to effectively manage foreseeable psychological impacts of IRI use.
- *Communicating* a message to all personnel regarding plans for IRI use recognizing their concerns and assuring willingness by managers to listen and carefully consider concerns.
- *Checking-in* with frontline 9-1-1 Professionals intermittently after launch of IRI to gauge how they are adapting (stress levels); invite input and recommendations for improving IRI management.

2) Manage *DEMAND* related to IRI:

Approach: leaders work with frontline 9-1-1 Professionals to manage rollout and terms of use relating to IRI to assure that demand does not exceed their resources. Leaders also accommodate individual differences among their telecommunicators recognizing that some will manage IRI exposure better than others. This points to one of the challenges with implementation of IRI in the center; even those who are less impacted on a call by call basis may, if too heavily relied upon, eventually be at higher risk of burnout. So, demand on all employees should be strategically monitored upon implementation regularly. Related steps:

- Education about stress risks, symptoms and skills to self-identify and manage stress.

- Assist each IRI user in recognizing their personal threshold for management of IRI. Such a threshold is not easy to identify. This task will require the telecommunicator's self-awareness and a high level of comfort to openly discuss stress with supervisors as it occurs.

- Create tracking tools to help 9-1-1 Professionals and the supervisors monitor the frequency and intensity of IRI calls experienced on a weekly basis as a trigger for check-ins. Consider utilizing your peer support team for this purpose if your agency has one.

- Self-perceived high tolerance to IRI Exposures (subjective self-appraisals of inoculation) by millennials and other 9-1-1 Professionals may or may not be accurate. The 9-1-1 industry should define means by which we can reliably

determine those most at risk and those most likely to be resilient with repeated exposure to IRI.

3) Manage the 9-1-1 Professional's experience of *CONTROL* related to IRI:

Approach: leaders work to increase the telecommunicators' sense of control as the end-user of IRI:

- Actively involve frontline telecommunicators in decision-making about how IRI will be used; consider creating a committee (or using your morale team if you have one) to help build IRI management guidelines.
- Define choices they will have in using or not using IRI on calls. For example: will software enabling access to IRI enable 9-1-1 Professionals with the choice to defer or view IRI on a case by case basis in accord with agency-determined protocol? Will there be guidelines or requirements for call-types with which it must be used?
- Invite 9-1-1 Professionals to confidentially express their concerns about anticipated IRI experiences prior to launch, and about actual calls on an ongoing basis after implementation.
- Work to support ways of increasing 9-1-1 Professionals' sense of closure after IRI calls within legal limitations.

4) Manage the Telecommunicator's *ROLE* relating to IRI:

Approach: define who will manage IRI calls to assure fit and prevent overload. (You will notice that this concern ties directly to management of Demand as described above.)

- Consider each telecommunicator's prior work-exposures to traumatic stress (as permitted in accord with HIPAA and other privacy codes) and their impacts. When such impacts have been extensive or intense, privately discuss any concerns you and they may have, how they expect to experience IRI. Leaders can opt out of assigning those who appear to be at higher risk of negative impacts.
- For all employees using IRI regularly, an option can remain open for re-assignment at intervals or on an as-needed basis to prevent overexposure to IRI, manage stress and avoid overload. Consider rotating assignments between fire, police, and medical dispatch assignments to dilute the intensity of IRI exposures.
- Leaders are discouraged from assigning personnel to full-time duty engaged in IRI interactions with callers or field responders as a permanent assignment. Maximum duration of assignment to IRI can be defined, including the process for evaluation of employee's well-being as a condition for any additional IRI

duty. of Professional Quality of Life screening tool found in Chapter 10 for this review purpose.

5) Manage *RELATIONSHIPS* related to IRI

Approach: recognize that if call-takers experience greater stress interacting with callers via IRI, their residual distress may fuel more conflict with their peers. Three leadership activities could help 9-1-1 Professionals to manage conflict and preserve the health of their peer relations with co-workers:

- Require use (by all personnel) of stress resilience and conflict management skills (assuming training has been provided in these areas).
- Prepare telecommunicators to recognize cues that they are struggling with attitude or negativity; urge them to seek out peer support informally or through a peer support program (if the center operates one).
- Meet with employees struggling with attitude or negativity to explore stress factors (including IRI) before issuing discipline.

6) Manage (assure) *SUPPORT* related to IRI

Approach: assure that the center's Comprehensive Stress Resilience Program is in place and running prior to launching IRI per Step 1 of the three-step plan defined earlier. (This approach assumes a 9-1-1 center is working to establish its CSRP.)

- Regularly encourage all PSAP personnel to use the resources provided for by the CSRP.
- Encourage preventive use of the agency's EAP program for clinical support to monitor IRI emotional impacts. Inform and recruit EAP Providers about this objective to assure success.
- Urge all personnel to pursue periodic treatments with EMDR therapy (The Resilient 9-1-1 Professional, Chapter 9) to "clear out" traumatic stress from IRI experiences to prevent accumulation.

References

DeMar, D. Jeremy. "Next Generation 9-1-1: Policy Implications of Incident Related Imagery on the Public Safety Answering Point." Masters Thesis. Naval Postgraduate School, 2017. http://hdl.handle.net/10945/52972

Lilly, M.M., & Allen, C.E.* (2015). Psychological inflexibility and psychopathology in 9-1-1 telecommunicators. Journal of Traumatic Stress, Advanced online publication. doi: 10.1002/jts.22004).

Lilly & Marshall (2018). Facing the Impacts of 9-1-1 Stress. In *The Resilient 9-1-1 Professional*, page 49.)

Linda Peckel, Psychiatry Advisor. November 13, 2015. http://www.psychiatryadvisor.com/ptsd-trauma-and-stressor-related/ptsd-comorbid-depression-symptoms-treatment-diagnosis/article/453961/2/. Last accessed June 28,2016.

Marshall, J. 2018. Leading the Next Generation 9-1-1 PSAP: Managing the Risks of Real-time Video Interactions. In The Resilient 9-1-1 Professional, page 327. Based on structured discussions (designed to eliminate introduction of bias) conducted with over 500 frontline telecommunicators during stress resilience courses specifically to determine their attitudes toward anticipated exposure to IRI potential. (Marshall, 2018. Note: this was not a quantitative analysis and formal research is needed to more carefully measure and corroborate these findings).

Troxell, R. (2008). *Indirect Exposure to the Trauma of Others:* The experience of 9-1-1 telecommunicators. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Accession Order No. AAT 333542).

5.6   Appendix F: Addressing the Challenges with Compassion Fatigue, Secondary Traumatic Stress, and Vicarious Traumatization in the 9-1-1 Industry

Contributor: J. Marshall, MA

Background

The purpose of this document is to provide clarity and guidance to PSAP personnel and other 9-1-1 stakeholders related to Compassion Fatigue (CF), a condition that has been found to exist among 9-1-1 Professionals and about which there is limited knowledge and common misunderstanding.

According to Roberta Troxell (2008), 16.9 percent of 9-1-1 Professionals were suspected to struggle with Compassion Fatigue. Dr. Troxell defined and measured Compassion Fatigue utilizing the model set forth by Beth Stamm (Stamm, 2002, 2006, 2010). This was a preliminary study, and support for psychological struggles among 9-1-1 Professionals has been strongly substantiated by subsequent research (cited in the NENA Wellness Standard and its Appendices).

9-1-1 Stakeholders should gain more knowledge of CF to assess and mitigate associated risks and impacts among 9-1-1 Professionals. This effort requires a shared and accurate understanding of CF and related conditions -- Secondary Traumatic Stress and Vicarious Traumatization. Unfortunately, there has been widespread misunderstanding of these terms among mental health professionals and laypersons which should be resolved. In this paper we seek to achieve this resolution and provide recommendations and concrete support enabling our PSAP leaders and personnel to better understand and more effectively assess and mitigate CF.

To assure accurate understanding and to effectively address these conditions, in the NENA Standard and all related documents, the workgroup has embraced definitions (below) of CF and related conditions that are supported by a data-informed theoretical model.

Understanding Compassion Fatigue and Related Conditions

Two pioneers in the study of Compassion Satisfaction and Compassion Fatigue have provided the most trustworthy scientific basis for understanding these terms: Charles Figley (Figley, 1995 and 2006) and colleague Beth Stamm, who extended and refined his work. We propose the adoption of Dr. Stamm's conceptual model (and terms, consistent with Dr. Figley's) for several reasons:

- Dr. Stamm's model of Compassion Fatigue is the most empirically supported: it has been successfully applied as a standardized screening tool for over 3,000 workers exposed to trauma[49].

---

[49] See bibliography at end of this resource document for references to her research

- More research is needed on the risks and solutions related to Compassion Fatigue among 9-1-1 Professionals. Industry-wide adoption of the Stamm model can produce highly reliable empirical data since such studies can build on the robust empirical bases already established related to consistently defined conditions.
- Dr. Stamm's definitions of terms are offered in lay-person language more accessible to non-clinicians, helpful in establishing a unified understanding of these conditions within the 9-1-1 community.
- Her organization makes her screening tool, the Professional Quality Of Life (ProQOL), available at no charge to all agencies worldwide wishing to use it--an important consideration in the 9-1-1 industry in pursuit of the wellness goals stated in the 9-1-1 Wellness Standard. This tool will be discussed more later in this document.

Dr. Stamm defines the combined positive and negative aspects of work life as "Professional Quality of Life". These aspects are (respectively) Compassion Satisfaction and Compassion Fatigue. She defines Compassion Satisfaction as

> ...the pleasure you derive from being able to do your work well. For example, you may feel like it is a pleasure to help others through your work. You may feel positive about your colleagues or your ability to contribute to the work setting or even the greater good of society.

Dr. Stamm (2010) defines Compassion Fatigue as "characterized by the negative aspects of providing care to those who have experienced extreme or traumatic stressors." In her model, CF is made up of two parts:

> **Burnout** is characterized by feelings of unhappiness, emotional disconnection*, and insensitivity to the work environment. It can include exhaustion, feelings of being overwhelmed, bogged down, being "out-of-touch" with the person he or she wants to be, while having no sustaining beliefs.

In Dr. Stamm's model, burnout is about feeling "overwhelmed." Yet CF also reflects a second area of struggle with "fear" related to being traumatized. She refers to this second part of CF Secondary Traumatic Stress (STS):

> **Secondary Traumatic Stress (STS)** is a negative feeling driven by fear and work-related trauma. It is important to remember that some trauma at work can be direct (primary) trauma. Work-related trauma can be a combination of both primary and secondary trauma...The symptoms of STS are usually rapid in onset and associated with a particular event. They may include being afraid, having difficulty sleeping, having images of the upsetting event pop into your mind, or avoiding things that remind you of the event.

Dr. Stamm clears up a misunderstanding common among laypersons (non-traumatologists) about the difference between direct, secondary, and vicarious traumatization:

- **Direct traumatization** occurs when you are "directly in the path of danger" (Stamm, 2009-2012). This definition is consistent with the description offered in the Diagnostic Statistical Manual, Fifth Edition (APA, 2013): "actual or threatened death, serious injury or sexual violence." 9-1-1 callers on scene and field responders may be the subjects of such danger and thus can experience direct traumatization.

- **Secondary Traumatic Stress** can occur when "you are exposed to others' traumatic events as a result of your work, for example, as a therapist or an emergency worker" when not in personal danger (Stamm, 2009-2012). Frontline 9-1-1 Professionals clearly experience STS by this definition when they are assisting during an active emergency (*in-progress* events) involving such danger to others.

- In contrast to STS, **Vicarious Traumatization (VT)** involves hearing about other people's traumatic experiences *after they have already happened*. By this definition, VT could also occur among other 9-1-1 Professionals not directly involved with response to emergencies including:

  o Quality assurance workers and supervisors listening to, processing and discussing recorded 9-1-1 emergency calls and dispatches.

  o 9-1-1 leaders to whom traumatic events are reported and who engage with employees about such events.

It should be emphasized however, that the term Vicarious Traumatization was intended to apply to workers (such as mental health therapists) who are hearing about such events after significant time has elapsed since they occurred. It was not intended to apply to workers assisting those in active distress about tragic events that are actively occurring or have *just occurred*. Thus, it is not appropriate to refer to the potential traumatization experienced by active-duty emergency frontline dispatchers as vicarious since it minimizes the reality of their exposure to trauma.

Whether trauma is experienced directly, secondarily or vicariously, an individual's risk for developing PTSD and other psychological fallout of exposures to trauma is determined by A) pre-trauma experience (e.g., a childhood history of trauma makes development of PTSD after a later exposure to trauma more likely), B) peri-traumatic experience (i.e., the intensity of the trauma experienced in real time during and/or immediately after the event) (American Psychiatric Association, 2013), and post-traumatic experience (exposure to other stimuli in the days, weeks, months and years after the event). It is important to note that both the peri-traumatic and post-traumatic experiences of 9-1-1 Professionals, per the characteristics of their intense and repeated exposures to callers and field responders in peril, may increase their risk of developing PTSD and other disorders (Vance, et al, 2018).

Conclusions

There are a number of important conclusions from this discussion that should inform the work of 9-1-1 stakeholders seeking to do their parts fostering the well-being of 9-1-1 Professionals:

- Active-duty frontline telecommunicators experience Secondary Traumatic Stress
- 9-1-1 Professionals in support roles to active-duty frontline telecommunicators can experience Vicarious Traumatization
- Whether individuals experience events directly, secondarily, or vicariously, they may be at risk of developing Compassion Fatigue, Acute Stress Disorder, Post-Traumatic Stress Disorder or other serious stress-related conditions.

Recommendations

These risks can be mitigated, and optimal well-being fostered among 9-1-1 Professionals by local PSAP adoption of the Comprehensive Stress Resilience Plans (CSRP) REQUIRED by the *NENA Standard to Protect the Wellbeing of 9-1-1 Professionals. PSAPs that provide as many of the specific resources and activities described in the Standard (and the accompanying Appendices) as possible will be most successful in this effort.* The workgroup also recommends the following steps. A*s part of implementation of their agencies' CSRPs, PSAP leaders or their designees can:*

1) *Strive to decrease intensity of peritraumatic stress during exposures to trauma on the job by implementing peer support teams and providing stress resilience and call mastery training (in all critical call types) to boost confidence and decrease anxiety in real-time, and in the immediate aftermath of such events*.

2) *Urge employees' volunteer participation in bi-annual administration of the ProQOL screening tool. (You can access this tool at no charge on the NENA website here*)

3) *Ensure that stress resilience training is delivered to their personnel including sharing of the information in this document about Compassion Fatigue to foster accurate understanding of this problem as discussed here.*

4) *Industry private sector partners can join with 9-1-1 membership organizations and subject matter experts to sponsor annual webinars.*

Resources

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing

Figley, C. R. (Ed.) (1995). Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized. New York: Brunner/Mazel.

Figley, C.R. & Roop, R.G. (2006). Compassion Fatigue in the Animal-Care Community. Humane Society Press.

Pearlman, L.A., & Caringi, J. (2009). Living and working self-reflectively to address vicarious trauma. In C.A. Courtois & J.D. Ford (Eds.), Treating complex traumatic stress disorders: An evidence-based guide (pp. 202-224). New York: Guilford Press.

Stamm, B.H. & Figley, C.R. (2009, November) Advances in the Theory of Compassion Satisfaction and Fatigue and its Measurement with the ProQOL 5. International Society for Traumatic Stress Studies. Atlanta, GA.

Stamm, B.H. (2009-2012). Professional Quality of Life: Compassion Satisfaction and Fatigue Version 5 (ProQOL). https://www.proqol.org.

Stamm, B.H. & Figley, C.R. & Figley, K. R. (2010, November). Provider Resiliency: A Train-the-Trainer Mini Course on Compassion Satisfaction and Compassion Fatigue. International Society for Traumatic Stress Studies. Montreal, Quebec, Canada.

Stamm, B. H. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the compassion satisfaction and fatigue test. Figley, Charles R (ed.). Treating compassion fatigue, (pp 107-119) New York: New York: Brunner-Routledge.

Stamm, B. H. (2006). Recruitment and Retention of a Quality Health Workforce in Rural Areas. Number 10: Health Care Administration, An issue paper from NRHA. National Rural Health Association (2006). National Rural Health Association Issue Paper: Recruitment and Retention Of A Quality Health Workforce in Rural Areas Number 15: Issues of Preserving Rural Professional Quality of Life. Approved by NRHA Policy Board, Author: B. H. Stamm.

Stamm, B.H. (2010) The ProQOL Concise Manual. www.proqol.org

Troxell, R. (2008). *Indirect Exposure to the Trauma of Others:* The experience of 9-1-1 telecommunicators. (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses. (Accession Order No. AAT 333542).

Vance, M, Kovachy, B., Dong, M., Bui, E. Journal of Clinical Psychology, Volume74, Issue 9, September 2018, Pages 1457-1484, doi: 10.1002/jclp.22612.

*NOTE: for over 1,000 articles on this subject, visit the exhaustive ProQOL Bibliography.

5.7 Appendix G: Addressing 9-1-1 Addiction and Self-Medication

Contributors: Leila Luft, Rebekah Pederson, and Danielle Rhodes, Sub-Workgroup: Addiction and Self Medication

Background

There is a growing concern in the 9-1-1 industry that telecommunicators are struggling with addictions secondary to work-related stress. Few data are available to identify addictive and self-medicating behavior as a coping mechanism to occupational stress in public safety telecommunications. Scientific research is needed in this area.

Data indicate that addiction and use disorders in first responders are correlated to the same variables as the general population. Risk factors for the general population include genetics, comorbid disorders, age of onset, history of trauma, and adverse childhood experience (see *Risk Factors* table; American Mental Wellness Association, 2020; Recovery Research Institute, n.d.).

We hypothesize that telecommunicators face additional work-related stressors that may further the risk of self-medicating and addictive behavior; those stressors including vicarious trauma; no closure after 9-1-1 calls; sleep disturbances; lack of visibility and recognition; work environment and conditions; lower job satisfaction; avoidance; lack of peer support; compassion fatigue/burnout; and technostress (see *Table 1. Risk Factors* below).

Table 1. Risk Factors

Telecommunicator Population	General Population
- Vicarious Trauma	- Genetics
- No closure	- Comorbid Disorders
- Sleep disturbances	- Age of Onset
- Lack of visibility/recognition	- History of Trauma
- Work environment/conditions	- Adverse Childhood Experience
- Lower job satisfaction	
- Avoidance/Lack of peer support	
- Compassion Fatigue/Burnout	
- Technostress	

Public Safety Telecommunicator PTSD and addiction treatment centers are underrepresented. There is a lack of resources and support specific to the public safety telecommunicator culture (see Appendix G1 of this resource document).

Some data indicates that alcohol use disorders in public safety telecommunicators, first responders, and healthcare professionals are correlated to gender and age (M. Lilly, personal

communication, August 8, 2020; Ballenger et al., 2010; Brooks et al., 2011; Jeong, et al., 2017, Merlo et al., 2013).

Protective factors to addiction, alcoholism, and self-medication include (see Appendices G2 and G3 of this resource document):

- Development of healthy stress-reduction skills
- Mentorship
- Early education and intervention systems
- Outcome screening
- Brief Intervention and Referral to Treatment (SBIRT)
- Employee Assistance Programs

Evidence supports the importance of education regarding the consequences of problematic substance use (Agerwala et al, 2012; Babur et al., 2017).

References

Agerwala, S.M., and McCance-Katz, E.F. (2012) Integrating Screening, Brief Intervention, and Referral to Treatment (SBIRT) into Clinical Practice Settings: A Brief Review. *Journal of Psychoactive Drugs.* 44(4), 307-317.

Ballenger, J. F., Best, S. R., Metzler, T. J., Wasserman, D. A., Mohr, D. C., Liberman, A., Dulucchi, K., Weiss, D. S., Fagan, J. A., Waldrop, A. E., & Marmar, C. R. (2010). Patterns and predictors of alcohol use in male and female urban police officers. *The American Journal on Addictions*, *20*, 21-29. doi: 10.1111/j.1521-0391.2010.00092.x

Babur, T.F., Del Boca, F. & Bray, J.W. (2017) Screening, Brief Intervention and Referral to Treatment: Implications of SAMHSA's SBIRT initiative for substance abuse policy and practice. *Society for the Study of Addiction.* 112 (Suppl. 2), 110-117 doi:10.1111/add.13675

Brooks, S. K., Chalder, T., & Gerada, C. (2011). Doctors vulnerable to psychological distress and addictions: Treatment from the practitioner health program. *Journal of Mental Health, 20*(2), 157-164. doi: 10.3109/09638237.2011.556168

Etiology: What causes addiction. (n.d.). Recovery Research Institute. Retrieved September 8, 2020 from https://www.recoveryanswers.org/addiction-101/etiology-what-causes-addiction/

Jeong, H. S., Park, S., Mee Lim, S., Ma, J., Kang, I., Kim, J., Kim, E., Choi, Y. J., Lim, J., Chung, Y., Kyoon Lyoo, I., Yoon, S., & Kim, J. (2017). Psychometric properties of the alcohol use disorders identification test-consumption (AUDIT-C) in public first responders. *Substance Use & Misuse, 52*(8), 1069-1075. doi: 10.1080/10826084.2016.1271986

Kelly, J. F. (2012). *Recovery Research Institute*. https://www.recoveryanswers.org/addiction-101/etiology-what-causes-addiction/

Merlo, L. J., Trejo-Lopez, J., Conwell, T., & Rivenbark, J. (2013). Patterns of substance use initiation among healthcare professionals in recovery. *The American Journal on Addictions, 22*, 605-612. doi: 10.1111/j.1521-0391.2013.12017.x

Risk and protective factors. (2020). American Mental Wellness Association. Retrieved September 22, 2020, from https://www.americanmentalwellness.org/prevention/risk-and-protective-factors/

Screening and Assessment Tools Chart. (2018). National Institute on Drug Abuse, Retrieved September 22, 2020, from https://www.drugabuse.gov/nidamed-medical-health-professionals/screening-tools-resources/chart-screening-tools

Smith, E. C., Holmes, L., & Burkle Jr., F. M. (2019). Exploring the physical and mental health challenges associated with emergency service call-taking and dispatching: A review of

the literature. *Prehospital and Disaster Medicine,* 1-6. doi: 10.1017/S1049023X19004990

Tracy, K., & Wallace, S. P. (2016). Benefits of peer support groups in the treatment of addiction. *Substance Abuse and Rehabilitation, 7,* 143-154.

Appendix G1 of Addressing 9-1-1 Addiction and Self-Medication

Treatment

9-1-1 Recovers, LLC, Dr. Michelle Lilly https://911recovers.com/

First Responder Wellness Center, Lombard, IL https://www.firstresponderswellnesscenter.com/

Shift Wellness, Dr. Stephen Odom https://www.shiftwellness.com/team

Simple Recovery, Dr. Stephen Odom https://www.simplerecovery.com/

Appendix G2 of Addressing 9-1-1 Addiction and Self-Medication

Self-Administered Screening Instruments

Alcohol Use Disorders Identification Test (AUDIT), retrieved from
https://www.drugabuse.gov/sites/default/files/audit.pdf

CAGE, PDF retrieved from https://www.drugabuse.gov/nidamed-medical-health-professionals/screening-tools-resources/chart-screening-tools

CRAFFT, retrieved from http://crafft.org/get-the-crafft/#dl-adol

Tobacco, Alcohol, Prescription Medication, and other Substance Use (TAPS), retrieved from
https://www.drugabuse.gov/taps/#/

Appendix G3 of Addressing 9-1-1 Addiction and Self-Medication

Education and Training

911 Wellness Toolkit, The 911 Wellness Resource, https://911wellness.com/building-your-psap-csmp/

Alcoholics Anonymous, https://www.aa.org/

Bennett, J. B., Bartholomew, N. G., Reynolds, S., & Lehman, W. E. K. (2002). *Team Awareness: Training for workplace substance abuse prevention*. Fort Worth: Texas Christian University, Institute of Behavioral Research. Available: IBR Web site: https://www.ibr.tcu.edu

Cocaine Anonymous, https://ca.org/

Faces & Voices of Recovery, https://facesandvoicesofrecovery.org/

Illinois Alcohol and Other Drug Abuse Professional Certifications Association, Inc. Mentorship program. Retrieved from https://www.iaodapca.org/members-2/mentorship-program/

Michigan Certification Board for Addiction Professionals. Certified Peer Recovery Mentor. Retrieved from https://www.mcbap.com/certifications/cprm-m-certified-peer-recovery-mentor-michigan/

Narcotics Anonymous, https://www.na.org/

NIDA. (2009). Mentoring: A guide for drug abuse researchers. https://www.drugabuse.gov/sites/default/files/mentoringguide.pdf

NIDA. (2016). *Funded Early Interventions.* Retrieved October 5, 2020 from https://www.drugabuse.gov/publications/principles-substance-abuse-prevention-early-childhood-research-based-guide-in-brief/nida-funded-early-interventions

Recovery Association Project, http://www.rap-nw.org/

Relaxation techniques: try these steps to reduce stress. (2020, April 18). Mayo Clinic. Retrieved October 5, 2020, from https://www.mayoclinic.org/healthy-lifestyle/stress-management/in-depth/relaxation-technique/art-20045368

SAMHSA. (2012, September). *Alcohol and Drug Addiction Happens in the Best of Families*. Retrieved from https://store.samhsa.gov/product/Alcohol-and-Drug-Addiction-Happens-in-the-Best-of-Families/SMA12-4159

SAMHSA (2018, June) *Opioid Overdose Prevention Toolkit.* Retrieved from https://store.samhsa.gov/product/Opioid-Overdose-Prevention-Toolkit/SMA18-4742

SAMHSA National Helpline 1-800-662-HELP (4357) or TTY 1-800-487-4889

Acknowledgements:

The National Emergency Number Association (NENA) Wellness Committee and the Wellbeing of 9-1-1 Professionals Working Group developed this document.

NENA Board of Directors Approval Date: 03/14/2022

NENA recognizes the following industry experts and their employers for their contributions to the development of this document.

Members	Employer
Chris Fischer, Wellness Committee Co-Chair	Chris Fischer Consulting
Roxanne Van Gundy, ENP, RPL, Wellness Committee Co-Chair	Lyon County, KS
Tracy Eldridge, ENP, Working Group Co-Chair	On Scene First
Jim Marshall, MA, Working Group Co-Chair	911 Training Institute
Lynn Tazzioli, MPP, ENP, Technical Editor	Westcom Emergency Communications
Melissa Alterio, CPE, RPL	Cobb County, GA
Heather Butler	Dekalb County, IL
Patrice Butler	Fulton County, GA
Pamela Buzan	Will County, IL
Anne Camaro	City of Cambridge, MA
Aimee Chase	Metro Communications Agency, SD
Troy Cordle	RapidSOS
Jeremy Demar, MA, CPE, ENP	Mountain Valley Emergency Communications, NJ
Maureen Dieckman	Moetivations, Inc
Kenneth (Shane) Hobson	Blount County, AL
Nicole Janey	City of Chelsea, MA
Kristen Jauregui	City of El Monte, CA
Sade Lewis	Fulton County, GA
Leila Luft, RPL	York County Communications Center, NE
Cory Lynch	La Crosse County, WI
LaToya Marz	Tri Comm Central Dispatch, IL
Wendy McKnight	City of Middleton, WI
Erik Nielson	Outagamie County, WI
James Powell	DeSoto County EMS, MS
Danielle Rhodes, ENP	Stephen's County 911, GA
Koren Weer	Chester County, PA

| Anessa Westmoreland | Covington-Newton County 9-1-1 Communications, GA |
| Nikisha Flagg | Fulton County, GA |