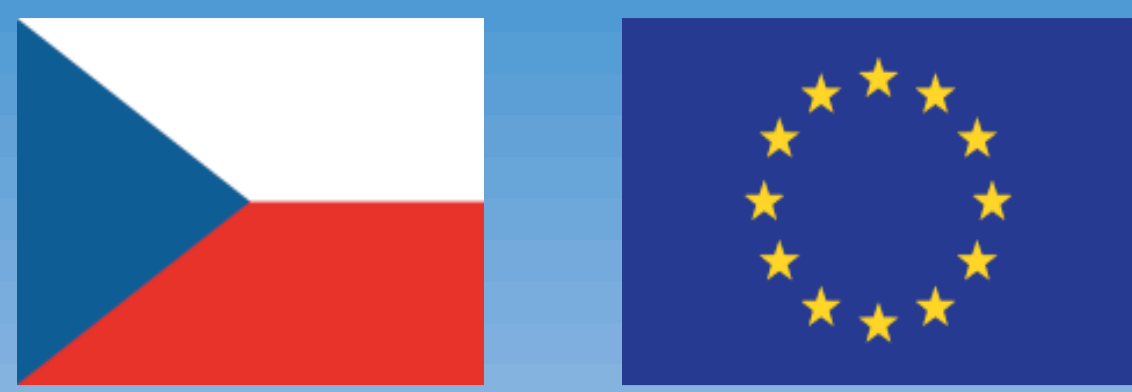
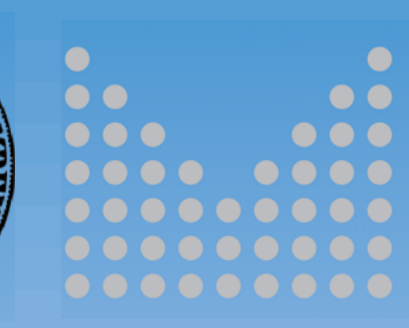


Rescue Workers in Mass Traffic Accident – research of Risk and Protective Factors



S. Vymetal¹, Katerina Okrouhlicka²
 (1) Ministry of the Interior of the Czech Republic,
 (2) Charles University in Prague



MINISTRY OF THE INTERIOR
OF THE CZECH REPUBLIC

I. Czech Background

Central Europe, population of 10 million

- **Experience of disasters** (floods 2002, 2009, tsunami in SE Asia 2004, tornado 2004, bombing in Egypt 2005 and other terrorism abroad, mass traffic accidents etc.)
- **Integrated Rescue System** (Police & Fire & EMS working together in one system)
- **Central system of post-traumatic psychosocial care in large MCI:** Ministry of the Interior & Police & Fire (cca 500 specialized interventionists).
- **Systems of Posttraumatic Intervention Care for uniformed workers** (psychologists & peer support)
- **Cooperation in providing psychosocial support** with NGO's, Ministry of Health, Ministry of Foreign Affairs, Czech Airlines, Crisis Centres etc.
- **International networking:** Standing Committee on Crisis, Disaster & Trauma Psychology EPPA, WADEM, EU Projects (Citizens and Resilience, EUTOPA, EUTOPA IP, TENTS, RED, NMFDisaster, EUNAD).

II. Situation & Impact

International express EuroCity 108 (Cracow-Prague) crashed into a downfallen road bridge.

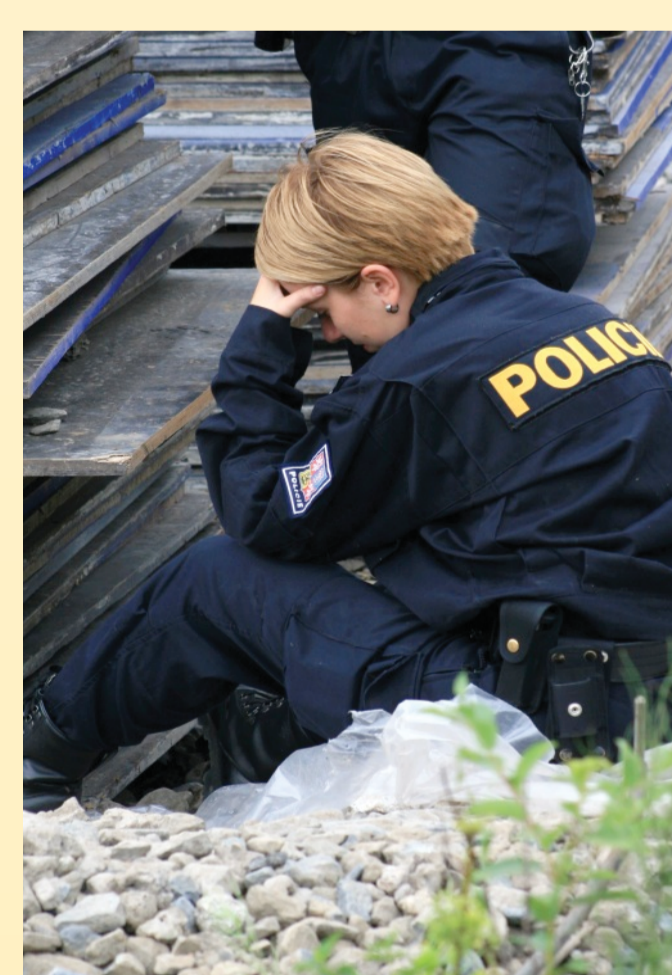
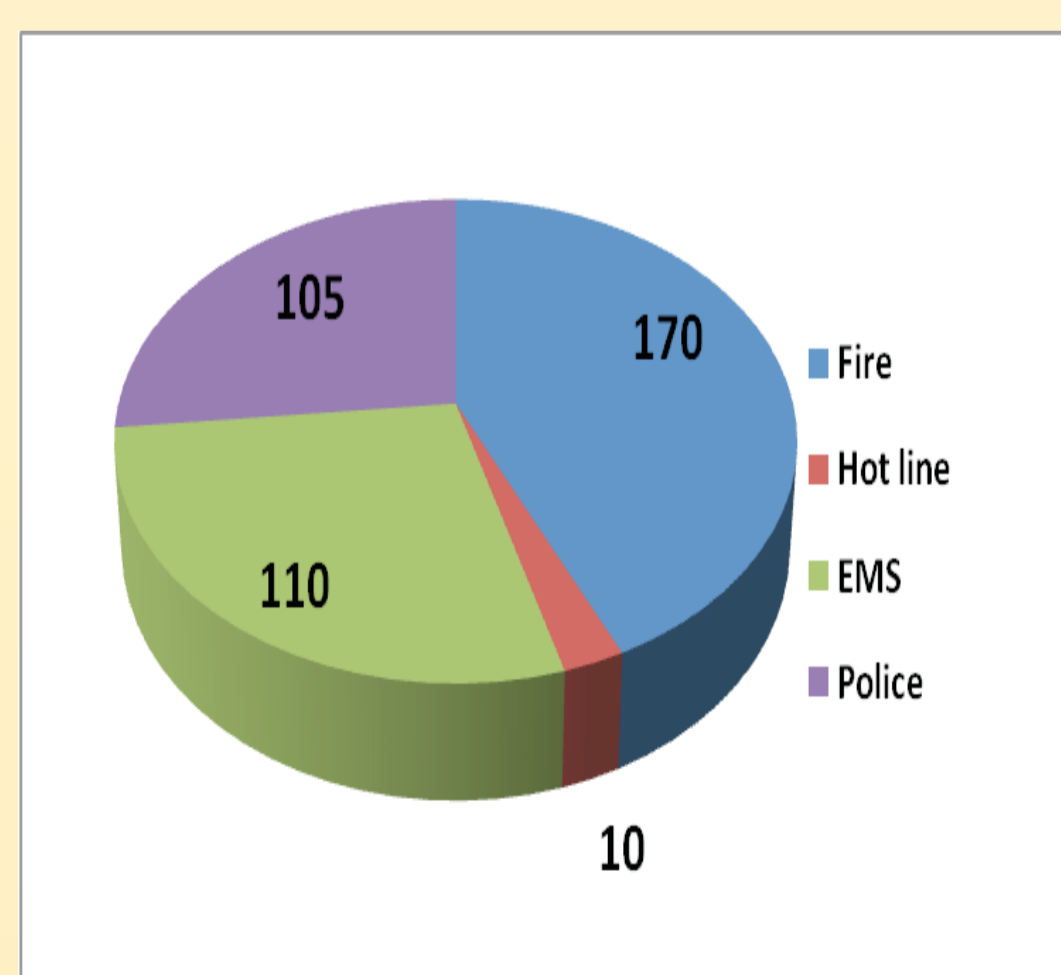
- 10 train carriages (first 4 badly destroyed), 420 passengers
- speed at the moment of crash: 90Km/h.
- Time: 08/08/2008 at 10:30 hrs.
- Place: small town Studénka, Moravian-Silesian Region



III. People & Aftermath

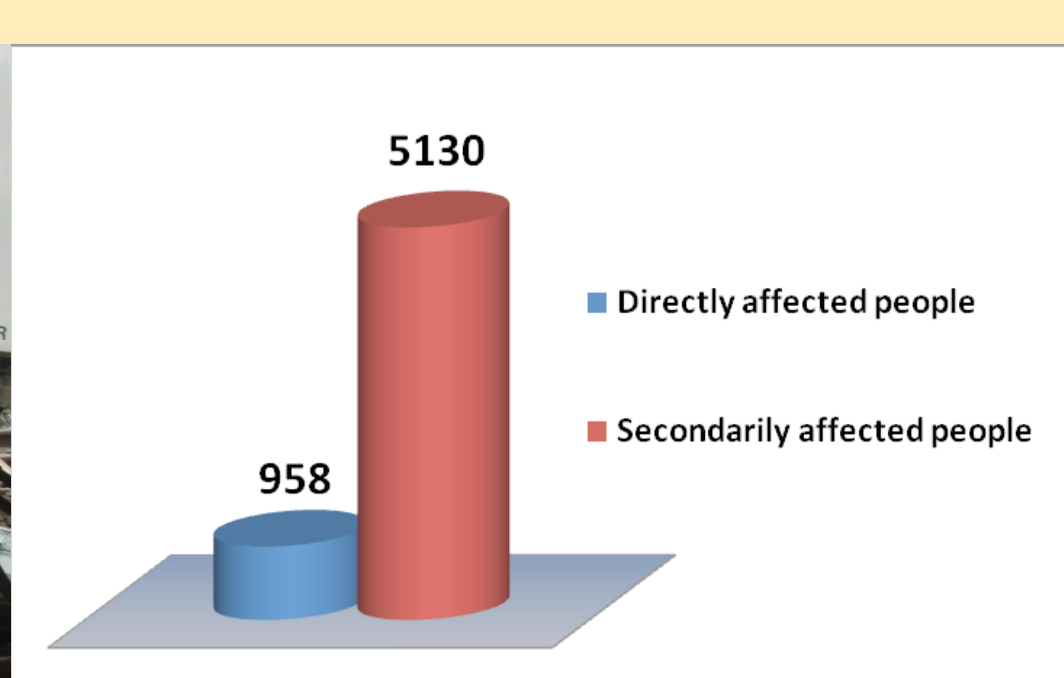
Profile of passengers:

- 300 Czechs, 90 Poles, 30 of other foreigners (Slovakia, Ukraine, France, Portugal, USA, Hong Kong etc.).
- **Mainly young people** travelling to Prague to see the Iron Maiden concert.
- **8 deaths, 70 injured** (37 severe and moderate, 35 minor), 342 no physical injury
- **Injuries:** fractures, contusions, incised/stab wounds, comotio cerebri, internal wounds, brain injuries, amputations
- **Psychosocially affected people:** injured and non-injured passengers, bereaved, train personnel, professional rescuers, bystanders, journalists, crisis managers, neighbourhood community, Czech Railways personnel, the guilty... Estimation of people with psychosocial needs: more than 6,000 individuals. **Directly affected 958** = all passengers, bereaved, rescuers, eye-witnesses, helpers. **Secondarily affected 5,130** = close relatives of those affected directly.



IV. Rescuers

- **Immediate reaction:** bystanders, non/lightly injured passengers, personnel of a nearby local medical centre.
- **Time of arrival of first profi rescuers:** 9 min. from the moment of crash
- **Time for extrication of all living people, basic first aid and transport to the place of triage:** 66 min (75 min. from the crash)
- All injured were transported to **9 hospitals within 2 hours** of the crash. Last dead body extricated 8 hours from the accident.
- No. of professional rescuers working in urgent phase: **395**
- No. of other **personnel and helping citizens** involved in clean-up operation: **150**



V. Research

The research was carried out on the basis of a specific event, which was a railroad accident at Studénka that occurred in 2008. Research results lead to recommendations for improving the practice of human resources management and the system of psychological support within the Police of the Czech Republic.

The research focuses on the area of **coping in members of intervening Integrated Rescue System (IRS) bodies in rescue and disaster work following a mass traffic accident.** The assumption is that a vast mass traffic accident is a type of disaster that places increased demands on coping not only for the affected citizens concerned, but also on intervening professionals. It is an **unexpected, urgent, and emotionally and physically demanding event that requires flexibility, heightened cooperation between different professions, and a non-standard work performance.** It is an event where it is not possible to apply routine operative procedures and management. A specific group, which this work explores in depth, is that of **police officers.** This professional group can be expected, in the given context, to be subjected to an increased burden in comparison to other IRS bodies – medics and firefighters.

VI. Methods & Sample

The result of this research is the mapping of activities and the identification of stress and support factors in bodies intervening in mass disasters. Another objective was to determine the **prevailing coping strategies** and the **perceived benefits** for police officers in connection with extraordinary burdens. A mixed research strategy was chosen, which combines **qualitative and quantitative research.** It consisted of a **three-phase research model of a sequential nature.**

The methods used included: (1) **case study**, (2) **questionnaire**, and (3) **structured in-depth interviews.** The case study and questionnaire focused on all 3 basic IRS bodies: police, fire and EMS and on representatives of additional IRS bodies (Czech Railways, Crisis Centre in Ostrava). The questionnaire was distributed between 6 and 14 days after the accident, with a total sample N=132. The biggest group was that of police officers (N=89). There were 26 questions which included demographic data, activities and responsibilities during the accident, stress and support factors and perceived benefits. The last phase of the study focused on police officers, and included 12 in-depth interviews. These were structured and were carried out 4.5 years after the accident. They focused on the perception of benefits and stress after a time lapse, coping strategies in a long-term perspective and posttraumatic development. The third phase of the research verifies detected results and deals with the **field of coping and resiliency** in some rescuers from the same police sample. The validity of the research was guaranteed by triangulation of data.

VII. Risk Factors in Rescuers

What was found was that individual IRS bodies have entirely different experiences, different levels of exposure and perceive stress and support factors differently during a mass accident. Police officers were evaluated as under the greatest stress. They show the highest subjective stress, some even show posttraumatic stress difficulties, but also the greatest benefit of experience during a mass accident.

The research suggests that traumatic development occurs simultaneously with the process of posttraumatic growth. Risk and protective factors are shown on a sample of police officers.

Stress related specifics, which relate to the work of police officers in mass disasters were:

- **worse material equipment for intervention**
- **limited training for mass disasters**
- **longer exposure time**
- **lower average age**
- **lesser expectation of work in an established team**
- **long-term deterioration of the climate within the organization.**
- **worse availability of basic needs**
- **minimal experience**
- **passive role**
- **generally lower social appreciation**

VIII. Protective Factors

Protective factors, which relate to the work of all 3 IRS bodies, were similar. They include **support factors in a peritraumatic time** (while performing tasks) and **follow-up support factors** (coping with a stress experience after the rescue operation). Most factors related to the **cognitive and emotional processing of experiences.** **Peer support was perceived as one of the most important support factors.**

IX. Results

• The research proved that **there are important differences in activities and perceived stress between police officers, firefighters, and medics**, who take action jointly during mass accidents. **The group with the highest stress were police officers** (least experience, lowest age, passive role during the accident, longest time in action, insufficient provision of basic needs, insufficient material and technical equipment).

• **All IRS bodies showed similar support factors.** Most often they were **internal** (strength of will and moral integrity, consciousness of purpose, willingness to help, perceived self-efficacy, experience, adrenaline level). They were also **external** (perceived competitiveness of peers, feeling of fellowship, decisive and responsible leadership, collegiality). Factors relating to **teamwork and preparedness** for crisis were also important. There were also factors relating to the **environment of the accident** (summer weather, daytime, good accessibility). The most important protective factors included: **peer support** (communication with colleagues), **internal factors of individuals** (cognitive processes, internal personality resources, feeling of satisfaction after a completed task), **activities outside of work, family and personal relationships.** The functionality and **cooperation within the IRS system and teamwork** was very highly evaluated.

• In the field of **posttraumatic growth**, perceived **professional advantages** from MCI experience were prevalent (new experiences, improved crisis preparedness, testing of own and peer capacities).

• Distinct differences in stress were also present between various police professions (patrol, criminologists, public relations officers, DVI). **Inexperienced patrol police officers were under the most stress.**

• Police officers most frequently employed **cognitive coping strategies** and **peer social support.** There were also **hobby** outside of work and use of **humour.** **Abuse of alcohol** featured among some of the risky coping strategies. Spiritual coping strategies were minimal. The results show a more frequent use of **repressive and pragmatic coping strategies.**

• Most police officers reacted by **being resilient** and showed **slight symptoms of acute stress reactions**, which disappeared within one week. **Somatic problems** arose in several cases along with a **delayed stress reaction.** Some police officers were, in light of previous experience and short-term tasks, **entirely resistant** to stress. Some professions were **stressed for a longer period of time** (investigation unit, public relations officers) with regards to the long-term of the investigation. After some time signs of **posttraumatic growth** (especially professional) showed in most of the respondents. **None of the respondents developed a serious case of PTSD.**

Recommendations:

- 1) **To include police officers more into simulations of mass accidents.**
- 2) **Thoroughly provide for basic needs for those in action for a longer period of time** (water, food, clothing, PPE, WC, tents, shifts).
- 3) **During preparation, focus on efficient coping strategies** (peer support, cognitive processing, pragmatic approach).
- 4) **Differentiate between groups of those in action based on their specific tasks and stress and ensure psychosocial support programmes tailored to their needs.**

X. Contact

stepan.vymetal@email.cz