Sustainable workplaces of the future

European Research Challenges for Occupational Safety and Health

Prof. Didier BAPTISTE, PEROSH Chairman
Scientific Director INRS France

PEROSH: Partnership for European Research in Occupational Safety and Health

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7 challenges for future European OSH research

1. Sustainable employability to prolong working life
2. Disability prevention and reintegration
3. Psychosocial well-being in a sustainable working organisation
4. Multifactorial genesis of work-related musculoskeletal disorders (MSDs)
5. New technologies as a field of action for OSH
6. Occupational risks related to engineered nanomaterials (ENM)
7. Safety culture to prevent occupational accidents

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Sustainable employability to prolong working life

What is at stake?

- Demographic change and an ageing population

Figure 1: Population structure and ageing in 2010 (dotted) and 2060 (solid columns) in EU-27

Source: Eurostat
Sustainable employability to prolong working life

Research needs at EU level

- Individual and organisational determinants of the prolongation of working life while maintaining good health and high productivity
- Cost effective individual and organisational interventions and measures (regulations, legislation) that extend working life in good health and productivity
- Cost – benefit analysis on the societal level demonstrating a positive return on investment on human capital will encourage the promotion of sustainable employability.

Disability prevention and reintegration

What is at stake?

- 6% of OECD working population leaves labour market prematurely due to health related problems

Research needs at EU level

- Holistic approach of disability (multi risks factors, supportive factors)
- Factors (work related, socio economic, individual) to prevent disability
- Factors to enhance the return to work
- Development of intervention strategies based on work modification, working hour, work organisation, lifestyle
- Studies into the role, quality and effectiveness of the health care provider and the occupational safety system in preventing work disability
- Models for integrated care and cooperation between different stakeholders

Psychosocial well-being in a sustainable working organisation

What is at stake?

- 20% to 30% of workers in EU believed health was at risk due to work-related stress (EWCS, 2007)
- Work-related stress of major concern for 79% of managers (ESENER)
- Violence and harassment of major concern for almost 40% of managers
- Between 50% and 60% of all lost working days have some link with work-related stress

Figure 2: Disability benefit recipients in percentage of the population aged 20-64 in a number of OECD countries for 2008 or latest year available

Source: OECD, The OECD “Sickness, Disability and Work” project

Figure 3: Health and safety concerns reported to be of some and major concern, (EU27)

Source: ESENER Survey, EU OSHA (2008)
Research needs at EU level (1/2)

- Influence of organisational and work-related factors including new ways of working, innovations in the production system, use of Information Communication Technologies
- Underexplored factors: ethics, job insecurity, work-life balance, information overload, working hour
- Explore resources and positive factors that may influence workers’ well-being and mental health (job motivation, organisational flexibility, workplace relationship, career prospects)
- Investigate the effects of restructuring (company reorganisation, closures, acquisitions, downsizing, outsourcing, relocation)

Psychosocial well-being in a sustainable working organisation

Research needs at EU level (2/2)

- Understand the link between vulnerable groups (aging workers, gender differences, people in precarious employment) and psychosocial risks
- Analyse the underexplored impacts of work-related stress such as work engagement and workaholism
- Effective organisational and workplace interventions to reduce work-related stress, violence and harassment
- Assess the socio-economic impact of work-related stress and its consequences in terms of cost and effects on workers and productivity

What is at stake?

- More than one third of European workers suffer from work-related MSD leading to a high percentage of sickness absence, rehabilitation cases and early retirements
- MSD are main occupational disease category affecting European workers
- Widespread in all occupational sectors but predominant in agriculture and construction sector

Multi-factorial genesis of work-related MSD

Research needs at EU level

- Interaction of combined physical and psychosocial risk factors on genesis of work-related MSD
- Links between MSD and individual physical capacity
- Epidemiological studies, e.g. analysis of specific work disability patterns
- Risk assessment tools and prevention strategies with regard to mixed exposures
- How workplaces accommodate employees with MSD
- Exposure databases and data exchange within OSH research organisations
- High quality MSD intervention studies (technical, organisational, person-oriented, cost-effectiveness interventions)

New technologies as a field of action for OSH
What is at stake?

- The emergence of new technologies are changing the working conditions and environment (e.g. increase of telework and use of new Information Communication Technologies applications).
- New technologies offer opportunities for new and advanced solutions regarding well-known issues in OSH (e.g. the design of the man-machine interface, the real-time monitoring of work environment parameters).
- The implementation of new technologies changes familiar work environments and may thereby lead to the emergence of new hazards and risks.

Figure 5. Development of telework in the EU27 and Norway, 2000 and 2005 (%)

Source: Eurofound. Telework in the European Union, 2010

Research needs at EU level

- Adapt the protective efficiency and functionality of personal protective equipment to new hazards and changes in the working environment
- Use of virtual reality applications to design safe workplaces
- Effects of the implementation and use of adaptive wearable Information Communications Technologies in work environments in terms of prevention
- Improvement of the quality of air and the acoustic comfort of rooms in the working and living environment by using innovative technical solutions
- Analysis and improvement of OSH for mobile workplaces
- Cognitive aspects of new technology usage
- Technology-mediated influence of user’s attitudes and behaviour
- Impact assessment of work environments controlled by Work Assistance Systems

New technologies as a field of action for OSH

Research needs at EU level (2/3)

Research in nanomaterials characterisation and metrology

- Harmonised methods to assess occupational exposure and preliminary work for standardisation
- Test the effectiveness of instruments and develop improved measurement tools
- Define which characteristics of ENMs should be measured in workplace monitoring
- Understand the potential release and the fate of ENMs after emission (nanodustiness)
- Validation of existing exposure models when applied for ENM and for new model approaches (for regulatory risk assessment)
Research needs at EU level (3/3)

Research on exposure control and risk management

- Quantitative evaluation of the efficiency of ventilation and capture devices at workstations producing/handling ENMs.
- Study the effectiveness of respiratory protective devices in lab and workplace.
- Development of risk management guidance (appropriate control banding techniques).

Safety culture to prevent occupational accidents

What is at stake?

- Accidents at work still result in high rates of fatal and serious injuries, hospitalisation, work absence, disability and premature retirement.
- An estimated 6.9 million people in the EU27 had one or more accidents at work in 2007, 5,580 of which were fatal.

Research needs at EU level

- Factors leading to an increased accident risk for certain groups of workers (young, older, migrant, newly appointed workers).
- The conditions and factors to establish a positive safety culture in enterprises of any size (regulation, social responsibility, leadership commitment, safety climate).
- The effectiveness of methods to promote a ‘zero accident vision’ and workplace safety culture (at enterprise level).
- Develop comprehensive instruments for the assessment of safety climate and other OSH factors.

Thank you for your attention

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Contact: PEROSH Secretariat Rue Gachard, 88/4, 1050 Brussels
T: +32 2 643 44 62 E: nele.roskams@perosh.eu