benOSH – a study about the benefits of occupational safety and health at enterprise level

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Workshop ‘Benefits of occupational safety and health: towards a sustainable productivity
“The quality of working life - Challenges for the future”
organised by: Belgian Presidency, Commission, EU-OSHA
Brussels, 24 November 2010
Overview

Four case studies, mainly from SMEs

- Case – baker’s asthma
- Case – aggression against bus drivers
- Case – recycling of building material
- Case – allergies caused by epoxy products
Baker’s asthma

Bakery and associated shop in a small town. Son of the owner was supposed to take over the bakery but developed a severe baker’s asthma, which put a big question mark to his future in his profession.

Ca. 1% of employees in German bakeries report sick with baker asthma annually according to the occ. accident insurance BGN. In 2003 BGN had to spend 37.5 million € on cases related to baker’s asthma.

Attending a BGN course, how to avoid dust, etc.; one employee per year; effective exhaust system; development of a flour moistening machine; development of dust-reduced release flours (Trennmehle).

After implementation of the exhaust system neither the baker nor any other worker developed symptoms anymore.
Baker’s asthma

Proposal for additional measures:

Company has implemented an exhaust system and a moistening machine. Only one system would be necessary to provide sufficient protection against baker's asthma, in the alternative scenario we consider only the flour moistening machine.

The moistening of the flour considerably improves the workability and the quality of the dough.
Baker’s asthma

Situation 1: minimum scenario
BGN courses (720 € annually), exhaust system (33,000 € once), moistening machine (15,000 once)
Conservative assumption: costs would be reduced by 90%.

Situation 2: maximum scenario
The costs would be reduced by 100%.

Situation 3: only moistening machine considered.
The costs would be reduced by 100%.

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<th>Scenario 1</th>
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Public transport company operating busses in a medium German town.

Bus drivers become more exposed to external abuse, insults, intimidation or assaults. A relatively large number of cases occurs during late hours, often caused by male youth under the influence of alcohol.

In this company five cases of assaults against bus drivers in 2006 and another five in 2007 with 296 work days lost.

Company organised de-escalation courses for all drivers in 2007/2008: external provider, one day per group, detailed discussions of the situations that were experienced by the drivers and role plays. In addition the busses were equipped with video surveillance systems.

2008 three cases and in 2009 no cases were reported.
Violence against bus drivers

Proposals for additional measures*

- Staff involvement through improvement teams in prevention activities
- Coordination with police in sensitive areas
- Incident log and guide to prevention

The photo shows part of a de-escalation training for bus drivers in Berlin, 2008; © ullstein bild - Intro/Schmidt

* Introduced at EuskoTren Bilbao
Violence against bus drivers

Situation 1: minimum scenario
De-escalation courses: company had to bear only the costs for the external provider (75,000 €), training was conducted during the off-days of the drivers; the video system was sponsored by outside funds. Conservative assumption: costs would be reduced by 70%.

Situation 2: maximum scenario
The costs would be reduced by 90%.

Situation 3: as above plus additional measures („Eusko Tren“), (7,000 € annually). The costs would be reduced by 95%.

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Recycling of building material

- Large machines for crushing and grading the material, large storage areas for the recycled material, filling stations to load lorries.

- High number of slips and trips accidents as well as cuts, causing periods of absence from work ranging between a few hours and 44 days.

- Medium and high severity cases only happen once in five to ten years time, low severity cases however occur more than twenty in a year.

- Intensifying the annual instructions (e.g. proper use of PPE), additionally the employees have been sent to external four-days-courses offered by the accident insurance association.
The idea was to initiate a discussion among the employees. Short films were developed showing the incorrect and the correct procedures in comparison. The films were screened in the break room in infinite loop. The accidents went down to zero within nine months.

* Based on a study at a paper recycling plant, with a high number of trips and fall accidents. The employees re-enacted and filmed some of the accidents and thereafter demonstrated the correct behaviour.
Recycling of building material

Minimum scenario 1
BG BAU courses: 3 persons per year for four days: 2,208 €.
Conservative assumption: the costs due to accidents at work would be reduced by 10 %.

Minimum scenario 2
The costs would be reduced by 20 %.

Scenario 3: as Scenario 2 plus awareness raising based on video.
Additional costs: 2,500 Euro. The costs would be reduced by 30 %.
In addition to the tangible benefits this prevention approach will also improve the workers involvement and will thus improve their motivation.

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A construction company uses epoxy resin and hardener to line large floors e.g. in car parks. In companies processing large amounts of epoxy resins and related hardeners we can often find workers developing an allergy. According to BG BAU there are companies in Germany where it viewed as normal that 40 % of such employees have an epoxy related allergy.

In the presented company employing (ca. 160 workers), there are one hundred of them showing slight symptoms and one worker with severe problems who had finally to give up his work because he was running the danger of developing an allergic shock. There is a high fluctuation in the company.

The company provides PPE, e.g. general chemical gloves (changed daily) and masks. Besides general instructions also special instructions for new comers are offered. However skin contact cannot always be avoided.
Allergies caused by epoxy products

Proposal for additional measures:

Strict preventive measures (see recommendations of BG BAU) especially avoiding any skin contact can prevent allergies: proper butyl gloves changed daily, overalls, masks, goggles, skin care products, safe containers, buying special mixers which do not produce splashes, looking for less hazardous products, special training (how to mix the components, how to keep handles clean, how to store ready mixed remains, ...).

Photo: left: This safe container includes resin and hardener. The hardener is released into the resin by piercing the inner capsule.

Photo right: Pistol integrated mixing of components (provided by Verlag W. Sachon GmbH + Co. KG)
Situation 1: minimum scenario
Special instructions 1,150 €.
Conservative assumption: costs would be reduced by 1%.

Situation 2: maximum scenario
The costs would be reduced by 5%.

Situation 3: as above plus additional measures (BG BAU recommendations) (72,200 € initially, 61,800 € recurrent).
The costs would be reduced by 70%.

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Thank you for your attention and contributions!
In Germany the OSH professionals and physicians do not receive diagnoses when a person reports sick. This is partly due to the fact that the trade unions do not want diagnoses to become known to the employer for fear that this may lead to the termination of the contract. This results in a remarkable gap regarding the perception of work related ill-health and the introduction of tailor-made related measures. Especially persons at risk to develop MSD need individual and workplace tailored early interventions. The current practice to conduct rather general measures did not prevent the spread of these disorders.

Also the reintegration management system only comes into force if an employee has reached 6 weeks of sick leave. But then it is often too late for preventive measures. It should also be in the interest of the trade unions to intervene as early as possible, because even if they can avoid a termination they risk on the other hand that the health situation of the worker deteriorates.

In one exemplary case an occupational physician serving as a consultant for different companies, was able to reach an agreement with the workers’ representatives and the employees, in order to obtain the diagnoses and the number of sick days also for diseases. So he is able to detect early persons, where major problems may occur in future. He has developed appropriate prevention measures, which are individually tailored and work related, e.g. the Ergophys Consult concept, where the employees are instructed how to move during their work processes.