

COSTS OF POOR-OSH – TOWARDS AN EU-28 ESTIMATE

Expert meeting on the cost of accidents and ill-health at work

1 Background

This report describes the proceedings of the technical meeting that brought together experts to explore the way forward towards estimating the costs of poor occupational safety and health at the EU-28 level. The meeting built on EU-OSHA's project '*Estimating the cost of accidents and ill health at work – A review of methodologies*' (report and executive summary translated into eight languages available at: <https://osha.europa.eu/en/topics/business-aspects-of-osh>).

The costs of work-related injuries and illness can be substantial. In the EU-27 in 2007, 5,580 accidents at the workplace resulted in death and 2.9 % of the workforce had an accident at work that resulted in more than three days of absence. Additionally, approximately 23 million people had a health problem caused or made worse by work across a 12-month period¹.

Establishing an accurate overall estimate of the cost to all stakeholders at a national or international level with regard to work-related injuries and illness due to poor or non-occupational safety and health (OSH) is a complex task. However, it is vital that policymakers understand the scope and scale of poor or non-OSH in order to implement effective measures in this policy area.

The project mentioned above, completed in 2013, is a review of models assessing the impact of accidents and ill-health at work and aims to be the starting point for EU-OSHA towards setting up a model at European level that would provide estimates for the EU-28.

The aim of the expert meeting was to discuss the main findings of the project and, based on it, highlight the factors that EU-OSHA should take into account for a European estimate: the existing limitations, the possible ways to overcome them and, generally, what the best methodological approach would be.

During the morning there was a presentation of the EU-OSHA report and the interest behind having a European estimate. This was followed by a presentation of the Australian model and how it has been applied to another country (Singapore) in order to highlight some of the issues around transferability of methodologies across countries. The afternoon session focused on the two key steps required to provide a quantitative estimate of the cost of occupational injuries and illnesses: (1) the identification of the number of cases and (2) the application of monetary values to the identified cases. The last session was group work, followed by a general discussion to report back and wrap up the day.

The meeting was held at the Agency premises in Bilbao, on 19 June 2014 and attended by experts, who were actively involved throughout the meeting.

The agenda for the meeting is at Annex 1, including links to the presentations, and a list of attendees is at Annex 2. The next sections describe the main points discussed at the meeting under each of the agenda points.

¹ Eurostat (2010), Health and safety at work in Europe (1999–2007): A statistical portrait. Available at: http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-31-09-290/EN/KS-31-09-290-EN.PDF (accessed 21 June 2013).

2 Introduction - Current project and future outlook

William Cockburn, acting Head of Unit of the Prevention and Research Unit (EU-OSHA), gave a general introduction of EU-OSHA. He focused on the current project, which provides an overview of estimates on the costs of accidents and ill-health at work and, most importantly for the purpose of the expert meeting, he also outlined the future plans for EU-OSHA in this particular field, namely the new activity on Benefits of OSH, which is aiming to calculate an estimate at the EU-28 level.

3 The need for an EU-28 estimate

Jadwiga Tudek (European Commission, DG Employment, Social Affairs & Inclusion) provided some context on the relevance of having such an estimate for the European Commission. She started with the Treaty of the Functioning of the European Union (TFEU), whose article 153 mentions the improvement of the working environment in order to protect workers' health and safety. Next she ran through the different initiatives at EU level that would benefit from having such an estimate, particularly the recently published EU Strategic Framework on OSH 2014-2020, which mentions explicitly the need for an assessment of the costs and benefits by 2016, but also the ongoing evaluation of the practical implementation of the EU (OSH) directives in the EU Member States and the Impact Assessments.

There was some discussion following the presentation on compliance levels and how it was felt by some participants that there is more effort placed in setting the limits rather than checking the levels of compliance. It was argued that this may be largely due to the lack of comparable data at country level, which is one of the reasons why the new EU Strategic Framework on OSH makes a specific reference to the need for good quality data. Regarding compliance though, the main, broad assumption is that the required levels are generally met but, again, this is largely due to unavailable data. Having good models and data, providing sound information on costs –including the required investments in OSH- would give a basis for action, not to compare countries but to try and monitor the evolution in time.

4 Presentation of EU-OSHA report

Xabier Irastorza (EU-OSHA) gave an overview of the project, explaining its background, main aims and the methodology behind the review of models. He emphasised the two steps for a proper estimation (1) identification of the number of cases (2) application of monetary values to the cases, followed by the types of costs to be considered and the different stakeholders bearing them. He highlighted some of the main issues of the modelling exercise and the likely challenges for the forthcoming project on the benefits of OSH, which is aiming to establish an estimate at EU-28 level.

The discussion focused on several of the challenges raised in the presentation. Concerning the value of quality of life, the World Health Organisation (WHO) has done work on how much people would be willing to pay in order to safeguard their quality of life. The average value –or the cost in terms of working days- was set at 6,000 days for Singapore and the extensive work done by the WHO could certainly be taken into account. There is also some research carried out on this particular issue in New Zealand, estimating the cost of pain and suffering to be 95% of the total overall costs to society of poor OSH and consequently, essential to account for it.

It was also mentioned that it is key to bear in mind what the GDP is measuring and to question whether we can actually calculate the costs of poor OSH as a share of the GDP as they are not measuring the same. It was pointed out that when trying to quantify the impact of poor OSH it might make more sense to try and account for the injury/illness rate per worker and sector.

As far as the debate on prevalence vs incidence is concerned, it was argued that the prevalence method shows higher figures not only because it accounts for the existing cases that originated in previous years but also because there were more accidents in the past. Incidence tells us about the current working conditions but with the incidence approach we are underreporting past cases that we are still paying for. Latency complicates the sound accounting of cases and it is not such a clear decision to opt between incidence and prevalence –it will very much depend on available data-, but it could be argued that prevalence gives us a more real picture as it measures what is happening already and what the real current costs are, regardless of when those cases actually happened.

5 Australian costing model

Richard Webster (Safe Work Australia) presented the Australian model, widely recognised to be one of the soundest estimates at international level. As already raised above, one of the issues he highlighted was the need to be aware of what the estimate is telling us: it is very much a measure giving some perspective, as a way of comparison, but it is not the actual loss of GDP or foregone economic activity. The model is taking account of different things and while some of them may be detrimental as far as OSH outcomes are concerned, they are certainly fostering GDP growth. He insisted too on the need to also include the costs of compliance with OSH regulations. A new Australian estimate is expected by January 2015, most probably for the 2012/13 financial year.

In principle, the estimation of the number of cases should take place independently of the actual costing methodology since they are different steps of the process and the costing should be directly applied into the information on the number of cases – which should, ideally, be readily available. The Australian estimate adopts an incidence approach and does not include property damage, as long as it has no effect on humans.

The model accounts for those who were absent from work for one week, bearing in mind different situations across states, which leads to underreporting. Four types of diseases clearly related to work were identified and data show that while there has been an increase in the number of diseases there has been a decrease in the number of permanent cases.

The discount rate applied in the model was calculated based on the opportunity costs –taking into account official monetary rates as provided by long term bonds- and inflation rates. Finally, he added that the increase witnessed in the percentage share of the total costs borne by workers is directly linked to an increase in wages.

The discussion following the presentation focused on the diversity of compensation systems across the different EU member states and how this will have an impact on the potential for comparability of existing national statistics. Having this in mind, it was pointed out that, rather than looking at compensation, the focus should be placed on the number of lost years instead, and that the discount rate should take into consideration the evolution of salaries. The breakdown of costs by bearer will certainly differ across countries – for instance employers in Australia have a smaller share in the total costs than they do in the United Kingdom.

It was discussed the extent to which it is accurate to assume that productivity rates do go up and how the models account for the increasing share of ageing workers, who will have been sick throughout their lives. However, and even though individual productivity may go down, productivity as a whole for society will most likely be on the rise as time goes by.

6 Transfer of models across countries – a recent experience of the Australian methodology in Singapore

Jukka Takala (Workplace Safety and Health Institute, Singapore) presented the Singaporean estimate, based on the Australian methodology. The overall estimate for Singapore is lower than for Australia, which is largely due to the difference in salaries between both countries.

As discussed before, he insisted that the estimates should indeed account for the cost of pain and suffering, as it represents a substantial share of the final cost to society -extensive work on this has been done in New Zealand.

It is essential to see how long people are staying at work, since the percentage share of those who retire before turning 55 varies among countries and it certainly has an impact on society and the functioning of the social security systems. He praised the model from the United Kingdom but pointed out that there seems to be some underreporting in the British figures on accidents.

Finally, on the impact of the projects on estimation of costs he added that some countries have already taken action - the legal framework was modified in Norway as a result of such a project, aiming for a more equal distribution of the burden among the different stakeholders. There were some comments on

this, arguing that it is good to provide an overview of the cost borne by each of the stakeholders in order to better inform policy making decisions.

There was some discussion on the challenges to transfer conclusions across countries due to their different sectoral structures. It was agreed that there needs to be an assessment of the sector breakdown in the countries, which may lead to different groupings of countries according to their economic structure. These groups could then be the focus of the modelling exercise, as it is deemed to be very complicated to carry out this project for each and every Member State. In addition to this, it is important to take into account the different age composition of the countries, bearing in mind workability and retirement age in order to reflect this.

In line with the GDP discussion and the differences between countries it was also pointed out that an EU estimate would need to assess the intra EU transactions in order to better know what the GDP reflects and how the input from other countries is taken into account into each national GDP figure. Further to this, and as raised before, it was mentioned that costing is useful and interesting but presenting it as a fraction of GDP may not be the best, soundest way to go ahead.

There were also some comments on the link between the economic cycle and OSH outcomes which needs to be addressed and taken into account for the modelling. This is very much due to the fact that higher economic activity is likely to increase the number of accidents but after some point, due to prevention measures and increased awareness following a change in people's attitude, it can be expected that accident rates will decrease. This change in attitude is important and with an improved economic activity it can be expected that awareness will certainly be raised.

Mr Takala also presented a project on the global estimates of the burden of injury and illness at work, which used EU level data from Eurostat but adjusted by national data. As far as work-related illness is concerned they used the attributable fractions method, as it was the case for Finland but for the whole of the EU this time. Which attributable fraction to use is a decision to be made and as such, it needs to be properly documented and justified. Regarding work related cancer, CAREX was taken into account but other factors for cancer should too be considered not only chemicals.

7 Accounting for cases – work-relatedness

Heidi Edwards (Health and Safety Executive, HSE) presented the British model carried out by the HSE, focusing on the first step of the modelling process, that is, the accounting of work-related cases of accidents and illnesses. She explained that in 2006/7 there was a significant methodological review affecting the number of cases and their severity but in any case there is probably a need to constantly change and update the model in the light of additional evidence or research. This would apply, for instance, to the monetary value of pain, as there has always been an attempt to include and reflect it in the model.

As far as work-related cancer is concerned, a cancer cost model will probably be ready for 2014/15 and as long as good quality data are available it might be used for other long latency diseases too.

Precisely the quality of data is a big concern because it represents an essential step of the process. For instance, it was decided to drop the non-injury accidents out of the model due to the poor quality of existing data. Similarly, the statutory report on injuries is good for fatal ones but there is heavy underreporting for the non-fatal. It has to be reminded here that non-reportable injuries are those leading to absences under seven days off work – they are high in absolute numbers but low in terms of cost.

Finally, having an estimation of those who will never return to work is a big challenge.

8 Attributing costs

Michael Zand (Health and Safety Executive, HSE) focused his presentation on the second step of the process, the accounting for costs. The main methodological principle behind the accounting is the use of opportunity costs.

The largest cost components are found to be quality of life loss –as pointed out above- and productivity costs, mainly associated with absenteeism. Presenteeism –the adverse effects on productivity of being

present at work with partial incapacity due to an accident/illness- is a significant part of the impact on productivity but it is very difficult to estimate and should therefore only be included if a satisfactory methodology and data source are available.

Compliance costs are not included either and it is difficult to assess them. Insurance premiums are included as cost for the employers.

Following his presentation there was a comment on the existing estimates on the quality of life loss from the road transport sector which are ex-ante, before the event –for instance, a road fatality. One could argue that there is limited degrees of transferability among countries on this but the EU has an estimate and the OECD too. There were similar points made on the country differences on healthcare and compensations systems and how they would complicate the costing exercise.

9 General discussion – group work

Following the plenary presentations, participants were split into two groups to further discuss the main methodological challenges and the factors that EU-OSHA needs to take into account for setting up an estimate for the EU-28. This section presents a recap of the discussions that took place in both groups and the reporting session that followed in the plenary.

On the number of cases, it was proposed to get started by using the LFS figures on accidents – it is more challenging for the diseases- and to build up validation studies of self-assessed conditions. As there may be small sample sizes for some particular cells it might be a good idea to aggregate countries. This idea was backed up feeling that it may not be feasible to carry out the modelling exercise at national level for each and every Member State.

In any case, and in order to have as complete a picture as possible, both for accidents and ill-health, the LFS should be complemented with national level data. There are disparities among countries and clear underreporting (i.e. traffic and commuting not included) so it is essential to have a look at both data levels. It is important to have in mind too that the LFS brings cultural variations as it is based on a self-assessment of their condition by the surveyed workers themselves, so there is room for some additional divergence between countries. In any case it was stressed that the most significant differences will be driven by the national economic structures, as broken down by activity sectors. Building on the estimation of the number of cases, there may be a need to apply attributable fractions in which case, as pointed out above, the assumptions made will have to be properly documented.

The EU-OSHA report provides an overview of different methodologies for accounting costs for workers and employers and there was a discussion on whether it would be sound to simply add figures that have been calculated according to different methodologies. For instance, the human capital approach does indeed make sense when it comes to workers but not necessarily so for employers as they do not think in the same terms. Costs may be relatively easy to identify but it is not always straightforward to add them up in a reasonable, sound way. Notwithstanding this, as it was mentioned throughout the meeting, assumptions will need to be made in the project and they must be properly documented in order to be open and transparent about all the decisions made.

The transfer of costing models across countries may have some limitations and, again, it is not necessarily a straightforward process. It was recommended not to include indirect costs, such as loss of brands or property damage but to focus on human loss instead. For the production costs there should be some type of country weighting used whereas for the value of human life there was a discussion on whether or not to include different figures per country. Some argued that it should be the same value everywhere but others pointed out that pain and suffering are valued differently across countries. One option might be to express the values in PPP (Purchasing Power Parity).

On the actual indicator to be used there was a discussion too whether to use wage or GDP per capita and how, whatever the decision, it should be consistently applied across the countries covered.

There was a point made on the use of the model results. For instance, the HSE estimates have been practical for their users to:

- Show scale and rates in common currency.
- Provide information on the distribution of the costs per stakeholder.

- Monitor the changes over time.
- Give unit costs, which are useful for appraisals.

On the use of the data, it is important to explain the limitations of the information in order to try and avoid its misuse as much as possible. This is why there needs to be some careful consideration as to how to communicate the modelling results. And it will be essential to involve the stakeholders not only on the identification/validation of existing data but also on the discussion of a first methodology proposal.

It was added that it is important to provide the estimate in context with other data, such as DALYs² and to try and offer the information broken down by sector and type of hazard, because combined information usually acts as an eye-opener.

Bearing in mind the limitations raised throughout the discussions and focusing on the added value of the project, it was pointed out that it is essential to clearly differentiate the two steps, that is, the number of cases on the one hand and the average cost for each of the cases on the other. Interestingly, the project could also be a great opportunity to identify data gaps by carrying out a thorough review of what is available.

One final comment was that EU-OSHA may well start by having a relatively easy estimation in order to have a model in place soon and then work on improving it, as there is a benefit to having something to show, discuss and raise awareness on.

10 Concluding remarks and next steps

The EU-OSHA team (William Cockburn, Dietmar Elsler and Xabier Irastorza) closed the meeting by thanking participants for their active input into the discussion and the helpful comments to inform the next steps. By the end of 2014 EU-OSHA will publish an online summary of the main points discussed in the expert meeting and will launch a procurement procedure for the project on the EU-28 estimate, which should tentatively be ready by the end of 2016. The experts involved, along with EU-OSHA's stakeholders, will be kept informed.

² Disability-Adjusted Life Years.