



A BEST SAFETY – PRACTICE TRAINING CENTER

1. Case metadata

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2. Organisations involved

GSK Biologicals (Rixensart)

3. Description of the case

3.1. Introduction

In order to meet the growing demand for vaccines, and to make sure that the new vaccines that are in the late development phase can be produced, GSK Biologicals doubled its workforce in the past four years. At the end of 2007, GSK Biologicals employed worldwide 9000 people.

The headcount has increased significantly on the three GSK Biologicals Belgian sites, which have created 1.800 new jobs since 2005. In 2009, the Rixensart site employed more than 3.000 people, the Wavre site more than 1.600, and the Gembloux team counts 40 people, among whom at least half have been working at GSK for less than 5 years

The Belgian sites had to integrate the newly hired people, e.g. in Production and in Maintenance, instill into them the excellence mindset that guides GSK Biologicals' actions, whether it is about quality, efficiency, safety or environment.

For some time, the safety figures had shown that the quality of the Environment, Health and Safety (EHS) training programs organised on the Belgian sites should be enhanced. The theoretical part of the existing training programs met both GSK's standards and the Belgian legal requirements. The results of a survey into the causes of accidents, conducted by the EHS specialist from the safety department at Rixensart, confirmed that most accidents could be accounted for as due to non-compliance with the safety procedures, either because people don't have enough practical experience or because they don't realise what the consequences of non compliance might be.

This is why a new hands-on training methodology had been designed, which has led to the set-up of a new training center where this new training concept has been implemented, tested and validated.

3.2. Aims

The main goal for the company was to prevent 80% of the work accidents occurring in production on all the Belgian sites by improving training among its employees.

The training center aimed to bring down the number of accidents caused by inappropriate operational practices (strategic goal) and it was designed to:

- Enable people to understand why safety procedures should be followed and what the consequences might be if they don't comply with them (operational target);
- Qualify production and maintenance staff for particular tasks that pose specific additional risks (operational target).

3.3. What was done, and how?

With regard to safety, a major proportion of the work accidents are known to occur among young workers and newly hired people. At GSK Biologicals, important efforts had already been made to help the newly hired safely make their first steps in the production or laboratory areas.

On the Belgian sites, the people who are to fill a new position in production are given, besides an extensive training about good manufacturing practices, a presentation of the Safety Handbook, which lists the basic safety rules, as well as the instructions specific to their departments. Every newcomer in production is also coached by a mentor who passes on good safety practices on the field. As to the maintenance staff, they must also attend a basic safety training exercise.

In 2007, another step forward towards excellence in training newly hired people to work safely in production and maintenance was taken with the creation of a training center dedicated to safety. The GSK Biologicals Rixensart site inaugurated a new concept of training people to safety in an on-site training center specially designed for that purpose. This center, where different typical production and maintenance environments were recreated, offers for the first time, a production scale, hands-on approach to safety training.

A Training Customized for Production

Together with operational staff, the Safety department, who initiated the project, identified eight fields in which bad practices are the cause of 80% of the accidents in production:

- Using Personal Protective Equipment (PPE),
- Using a Water for Injection point,
- Purging a filter casing, using a peristaltic pump (de)connecting a hose, screwing on a flange or triclamp,
- Steam,
- Glassware,
- Working under a chemical hood or a biosafety cabinet,
- Storing,
- Gestures and postures.

For every subject, a scenario with practical exercises was designed.

As part of the module about PPE for instance, the participants are asked to take off gloves, which have been previously contaminated with a riboflavin solution, a molecule which is not hazardous to health but can be seen under UV light.

After taking off their gloves, the participants are asked to check their hands under a UV light in order to spot a possible contamination. After this exercise, how gloves should be taken off is explained again step by step.

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A similar exercise is done for the participants to check if they use their disposable respiratory masks properly (fit test). After they have put on their masks, their heads are covered with a paper hood, into which a sweet or salty solution is sprayed. If they can taste the flavor, it means that the mask doesn't fit the face properly and, hence, doesn't protect them against the particles they are exposed to. The correct procedure is then explained and the exercise is repeated.

Some topics, such as ergonomics, are also illustrated with video testimonies given by people who have had accidents.

The contents and how it would be taught was presented to the different value stream leaders, and tested in two pilot sessions, which allowed fine-tuning everything in order to meet the practical needs of the end-users.

The features and the content of the different modules are written down in templates.

These templates consist in information about the modules such as:

- Entrance conditions,
- Required material,
- Objective of the module,
- Screenplay,
- Risks and preventive measures associated with the screenplay,
- Evaluation modalities,
- Application criteria and consequences when these are not taken into account.

The training sessions are given in the Training Center at Rixensart by a member of the EHS technical staff, who used to work in production. Every four-hour session covers the different subjects.

The last half hour is devoted to a theoretical assessment: the participants are asked to answer a multiple-choice questionnaire designed to check if they know what to do and why they should do it. This theoretical test, together with the practical exercises, serves as a basis for the qualification they are expected to be granted. The participant must achieve a minimum score of 70% on the theoretical test.

Setting up this new training concept required:

1. A thorough analysis of the main causes of accidents in order to work out relevant training programs, which meet our needs, knowing that many accidents are caused by inadequate practices. Figure 1 shows the root causes of accidents/loss time and figure 2 shows the root causes of first aids.
2. An in-depth evaluation of what knowledge and know-how should be acquired to prevent those types of accidents.
3. Appropriate production equipment, ancillary staging materials (life-sized mannequins) and training devices were designed and validated by the production.
4. A former production worker was trained to become an EHS trainer.
5. Two pilot sessions with experienced technicians from both Rixensart and Wavre were organised to validate the content of the different training programs and make sure that they perfectly reflect the situation that operators face every day..
6. Defining key performance indicators in order to measure if the training has been effective.

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Figure 1: Causes of accidents/loss time

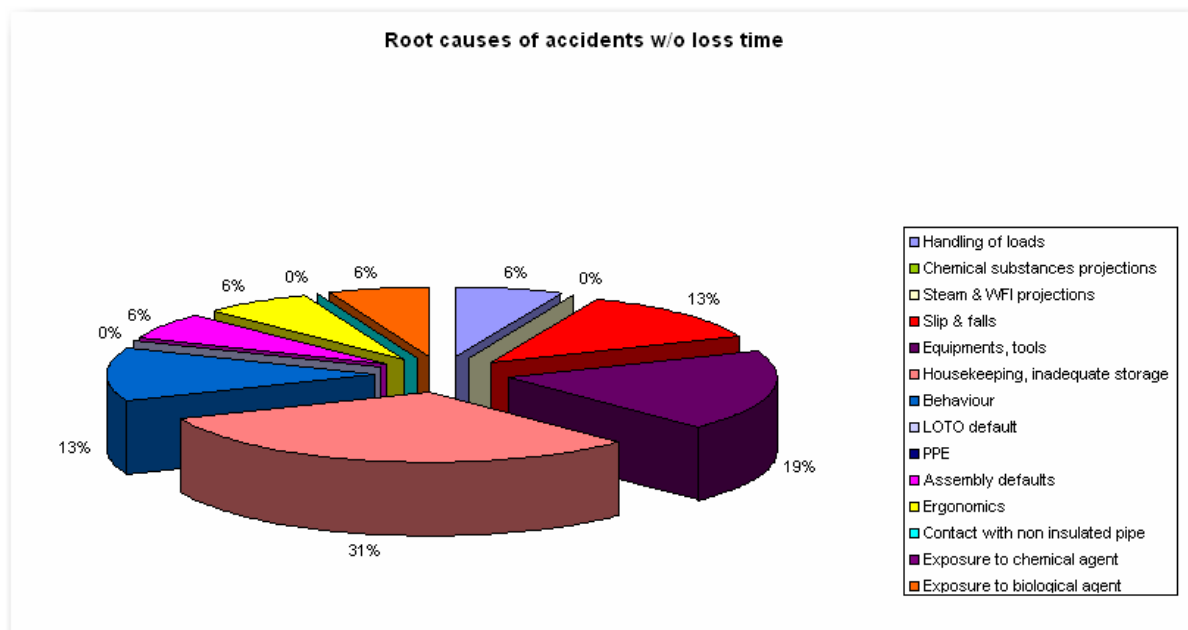
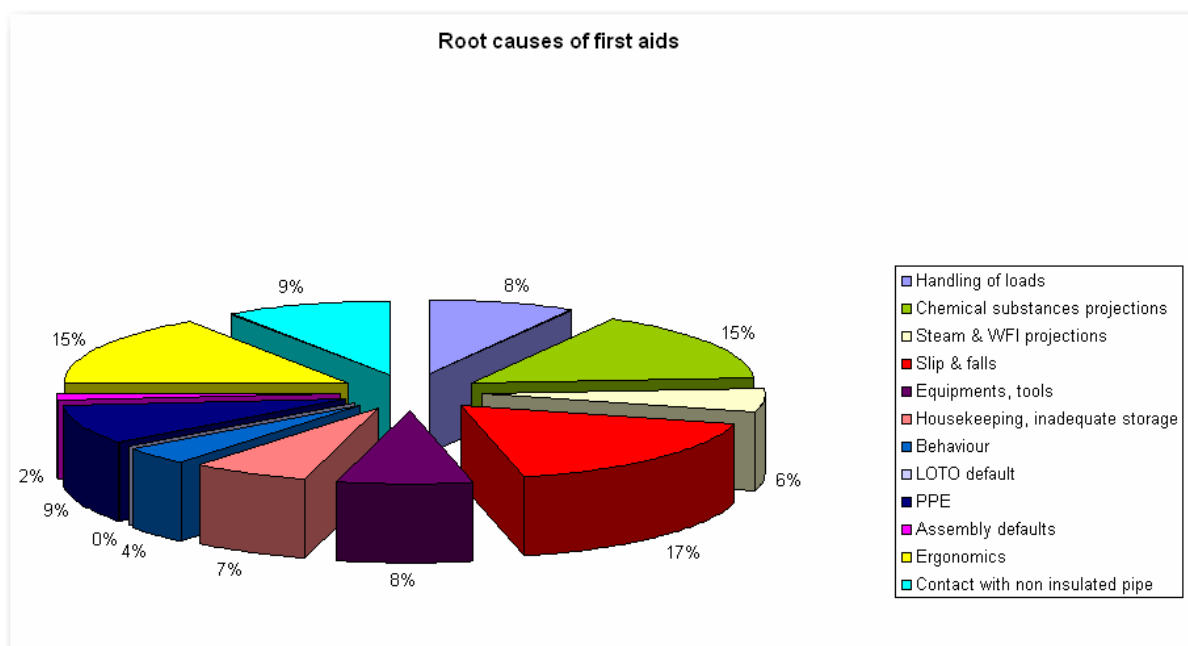


Figure 2: Causes of first aids



Source: GSK Biologicals

3.4. What was achieved?

So far, in April 2008, 70 production operators and 65 maintenance operators have been trained in this new center, and no accident has been reported in their teams.

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The benefits listed below are the expected Return On Investment. It cannot yet be shown with figures since the training activity started in March 2008:

- Less work accidents related to the subjects dealt with in the training center, both in production and in maintenance.
- Less work accidents in general thanks to the improved overall safety culture,
- Better informed newly hired people and time saved on the field,
- The infrastructure and the concept can be shared for some GMP training programs,
- Versatile concept that can be adapted to other departments (Industrialization, R&D and QC) and other sites.

3.5. Success factors

The innovative part of the project is that the theoretical training on good safety practices is reinforced with a hands-on training in real working conditions so that it works as a genuine «experience accelerator».

3.6. Further information

Mr. Jean-Louis Baraté

GSK Biologicals – site de Rixensart

Rue de l'institut 89

1330 Rixensart

Belgium

Tel: +32 (0) 2 656 80 23

Fax: +32 (0) 2 656 80 30

E-mail: Jean-louis.barate@gskbio.com

3.7. Transferability

In every organisation it is important to train newly hired people to work safely. Therefore it would be important to create a training that gives these employees the knowledge and the insight that is needed to work safely. The concept of training people to safety in an on-site training center can be implemented in all types of organisations from different sectors. The concept will not change only the content of the modules has to be adapted to the specific working conditions and environment.

Because the recreation of the typical working environment will need a certain budget, it might be more difficult for little companies to implement the concept. The cost of such a concept will probably also depend on the typical working environment that has to be created.

4. References, resources:

- Information provided by the company in the framework of the Good Practice Award Competition 2008/2009.
- GSK Biologicals – site de Rixensart, Belgium (<http://www.gsk-bio.com>)