World Safe Day 2017: new and innovative partnership launched in Brazil
Brasilia, 28 April 2017

The SmartLab: Mining data to make work places safer in Brazil

Like in many other countries around the world, occupational accidents and even more so work related diseases are a major concern in Brazil, causing massive human suffering as well as generating high and avoidable cost for enterprises, social security and the economy at large. A better understanding of the frequency, distribution and causes of accidents, injuries and illnesses is key to more effective labour inspection and better prevention.

In August 2016, the Labour Prosecutor's Office in Brazil (in Portuguese Ministério Público do Trabalho or MPT) and the ILO signed a cooperation agreement to jointly address root causes of fundamental rights violations including poor workplace safety.

An innovative component of this cooperation is ILO's support for the creation of a comprehensive database dubbed **SmartLab**. SmartLab provides the MPT and other stakeholders access to integrated data on human rights, occupational safety and health, social security, labour relations, vocational training and others, compiled from different government authorities and agencies. Supported by state-of-the-art technology, the laboratory is capable of performing statistical and econometric analysis using advanced software, as well as data mining, and business intelligence and analysis platforms and tools.

The initiative seeks to tackle a lack of information coordination at the national level. Brazil is a country with a wealth of data on a range of issues related to decent work, yet this information is widely dispersed and often dificult to access and process.

Through this tool, stakeholders will be able to build a better understanding on the nature, incidence, causes, cost and location of OSH problems in Brazil. The tool is also a new resource for enforcement efforts, but more importantly will support preventive initiatives between employers, workers, trade unions and authorities in economic sectors, supply chains and enterprises.

The Smartlab initiative aims to answer the following questions:

- What are the most frequent causes of injuries, illnesses and deaths related to the working environment?
- How are occurrences distributed geographically? Which economic activities, productive sectors, supply chains and occupations are more likely to concentrate injuries, illnesses and deaths?
- What are the costs, in terms of social security, linked with these injuries, illnesses and deaths? How many days of work are lost due to the lack of safe and healthy work environments?
- What should be the programmatic focus in relation to preventive initiatives aiming at promoting occupational safety and health? How could employers and workers prevent people from dying, suffering accidents and exposure to occupational diseases?

To answer these, the database draws on nearly one million registers of *workplace-related* serious accidents, severe illnesses, and deaths, from 2011 to 2016 (Based on International Statistical Classification of Diseases and Related Health Problems 10th Revision). The dataset includes administrative records of mandatory notifications of workplace injuries, illnesses and fatalities (CATWEB), as well as information about social benefits paid to victims of serious accidents and severe illnesses, and compensation paid to relatives or workers that died from a work related issue.

Through an innovative **OSH Observatory** feature, users are able to generate customized analyses in an easy to read *dashboard* format. The data can also be analysed through a Geographic Information System lens.

The below sample analysis shows a mapping based on OSH information from Minas Gerais state. In this example, 109,999 cases of severe accidents are plugged into the map. The most frequent occurrences in this case are fractures (67,775) and trauma (14,290). In this state, during the period in question, 4 thousand amputations were also registered. The OSH Observatory shows that these problems resulted in a loss of 14 million days of work, with an estimated social security cost of around US$ 150 million. The data also shows that most of the occurrences are related to the following sectors: manufacturing (25%), automotive vehicle repair (21%), construction (10%), transportation, storage and logistics (7%), and complementary administrative services (6%). The most affected occupations are:

- Drivers;
- Civil construction helpers, and;
- Production lines feeders.