

OCCUPATIONAL HEALTH IN A DATA PROCESSING ENVIRONMENT

P. R. G. JUCA, R. G. T. FREITAS and S. C. BARBOZA
Federal Service for Data Processing, Rio de Janeiro, Brazil

ABSTRACT

This paper reports on the experience gained with the introduction of an occupational health unit in a large data processing firm. The idea underlying the project was to connect the concept of health with that of productivity at all stages of the unit's development. The experience showed that without the aid of electronic processing the project would not have been successfully completed.

Occupational health in Brazil is still in the development stage. Activities in this sphere have been increased during the last decade, since, due to concern with growing labor accidents which are causing great losses to the country's economy, the government adopted a program for combating this type of accident. This paper reports on the development of an occupational health unit in a data processing establishment which had the following special characteristics:

- its basic characteristics were those of a factory;
- it employed a large number of people in mainly sedentary activities;
- its functions were still not clear, i.e. the characteristics of the individual data processing activities were not clearly defined;
- the incidence of labor accidents was not significant.

On the basis of this, the following picture could be deduced:

- As a factory working 24 hours a day it justified the existence of a medical facility fulfilling the tasks of health care medicine.
- There was much concern over absenteeism.
- The over-all trend being towards sedentary activities, the principal ailments in the various groups of jobs were a result of such work.
- No parameters were available as regards social, physical and psychological conditions for the admission of workers.

METHODOLOGY

The project started in May 1976, with two main objectives: to instill in all workers an awareness of occupational health, and to introduce gradually various

occupational health activities. It started at the clinical level, with medical care, medication and pre-admission examinations, but without direct reference to the individual jobs or functions. The idea was to collect as much information as possible as regards the characteristics of the firm, and to make the employees "used" to a medical unit.

At the same time, a series of meetings were held with the managers to discuss the main courses to be followed. A chart was drawn up defining occupational health activities in the firm. This was explained in the following manner: As a starting point, a parallel was between productivity and health, emphasis being placed on the fact that if the work force is healthy, there will obviously be a greater probability of achieving a higher productivity. The importance of absenteeism as a negative factor was stressed.

The W. H. O. definition for health was used. Occupational health activities covered two main sectors: the workers and the environment. As regards workers, the following parameter was observed: "A healthy individual is one who finds himself in perfect agreement with his functions." The importance was then stressed of workers having physical, psychological and social characteristics which individual jobs require, and the need to maintain these conditions, i.e., that workers must undergo periodic examinations in order that any illnesses which might affect this state could be prevented.

Periodic examinations were then proposed from which two sets of very important data could be obtained, i.e., biometric data and physical and psychic health data on the workers. The data thus collected would enable the occupational health unit to outline the ideal type of worker for each job or function. Thus the occupational health unit was able to examine candidates in relation to the job they would have to perform, i.e. the occupational health unit carried out pre-admission examinations based on individual jobs or functions. By reaching this stage, the occupational health unit had made the first step in combating absenteeism and was in a position to produce a work force within the required standards of health thus ensuring good productivity.

The first phase of the cycle was thus closed. A further step was the setting up of medical facilities to meet the needs of workers during working hours and carry out pre-admission and periodic examinations, and other activities. This, of course, is another form of directly combating absenteeism. At this stage the occupational health unit was able to open a file containing information obtained from the previously described examinations and the medical history of each individual. Named the Nosological File, this record supplied information on any change in the frequency of occurrence of various illnesses in the individual groups, on the appearance of new illnesses. The occupational health unit would then be able to detect any environmental aggressions on individuals (under controlled conditions, any change in the worker's health would likely be a result of changes in his environment), i.e., the Nosological File would serve as a link connecting the worker with his environment.

Once environmental aggression is diagnosed, the firm can undertake suitable measures in the affected area, to ensure good levels of health among its

workers and, as a result, good productivity. The cycle is then closed. At this time, a Steering Committee was set up to deal with environmental problems (Ergonomics Group), and a final scheme worked out as shown in Figure 1.

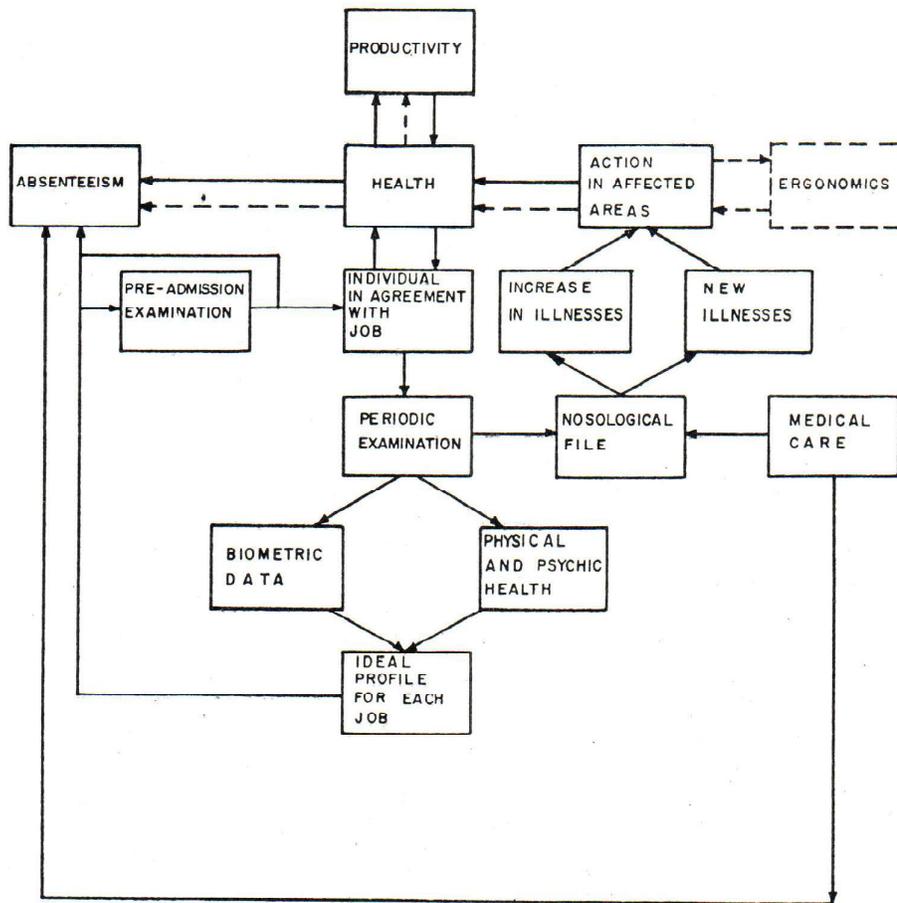


FIG.1 - Final development of the scheme for interaction between health and productivity

Four elements were then established as the basis for setting up an occupational health unit:

1. A medical facility with characteristics of preventive medicine,
2. Periodic examinations,
3. Pre-admission examinations and
4. Nosological File.

These elements were to be introduced in stages, so that when the fourth phase (Nosological File) was reached, the occupational health unit would be capable of setting the whole system into operation and act both upon the workers and on the environment. The idea met ready acceptance on the part of the management, and the system was put into practice.

RESULTS

As mentioned before, the beginning was made with a medical facility which was to offer services to the workers and effect pre-admission examinations, without any special methodology. During the first six months, the idea was spread among the workers that the introduction of an occupational health unit was essentially a preventive medicine approach, and that check-ups would be made in emergency cases only. In December 1976, the occupational health unit started to prepare the workers for periodic examinations explaining to them the importance of these examinations as a health preventive measure. A program was set up dividing the workers according to jobs, and clinical and laboratory examinations were made in accordance with the individual jobs. The examination of the whole work force took six months. At the end of that time, the occupational health unit had about 40 different data on each of the 1000 workers, divided into about 10 groups of functions. The evaluation of the data posed some difficulty as they had to be compared in order to arrive at more precise information concerning the individual jobs. The management of the firm then agreed to have a data processing system developed on the basis of these data. The task was completed in about four months, and not only the periodic examination data, but also those of the pre-admission examinations and those obtained through the activity of the medical facility were processed.

Using the results of the periodic examinations, it was possible to draft some parameters for the pre-admission examinations. By December 1976 these examinations were already based on the results obtained previously. By that time the periodic examinations, the medication service and the pre-admission examinations, related to jobs or functions had already become institutionalized. The Nosological File was then started. The medical records supplied information on daily medical activities, while the data on pre-admission and periodic examinations were already on tape. Since the data from the medical records could be processed by computer, the system was reactivated in order to analyse also the information contained in those records. The idea was for the system to supply the occupational health unit with statistical data indicating the incidence of various ailments and diagnoses of the individual sections of the plant. This enabled us to control any illness within the various groups of jobs in every sector of the firm. When changes were observed which pointed towards an environmental aggression, the management was notified and preventive measures were requested. This created the need for a Steering Committee, constituted of professional people who would have the responsibility to propose measures, for improving the environment (ergonomics).

In June 1978, the situation was as follows: The medical facility was taking care of routine activities, i.e. check-ups of workers feeling incapacitated from working. The pre-admission examinations were based on the requirements of the individual jobs, the second periodic examination was in progress, while the Ergonomics Group was in the final phase of its development. Parallel to these activities, there continued a program of physical activities (sports and gymnastics) designed to reduce the adverse effects of sedentary work.

Thus two years after its start the occupational health unit had reached the final phase of the cycle previously described. The occupational health unit can now discuss the workers' well-being and security, and humanization of jobs, without first having to relate them directly to productivity.

CONCLUSIONS

The project having only medium- and long-term effects the occupational health unit's initial objective had to be an increase in productivity. In order to make people realize that good health means higher productivity, the importance of the individual activities had to be separately demonstrated and these were, therefore, introduced by stages.

Electronic data processing proved a promoting factor of occupational health effectiveness. Through data processing it was possible to obtain information on the health of the individual groups of jobs or functions in the firm within a very short time, while without it, we would probably not have been able to compare all the collected data within a reasonable span of time. The same applies to the Nosological File. The use of a computer helped to make the applied procedure the main instrument for controlling the health of the work force under study.

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