

Farmers' occupational health program in Finland, 1979–1988

From research to practice

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When the Occupational Health Care Act came into force in Finland in 1979, there was very little information available for the planning and implementation of the occupational health services for Finnish farmers. For this reason the Kuopio Regional Institute of Occupational Health, in collaboration with the Social Insurance Institution and the National Board of Health, conducted two experimental studies on farmers' occupational health services in 1979–1982 and in 1985. The research is still in progress, and the aim is to develop further the occupational health services of farmers. The functional adequacy and the effectiveness of the occupational health services have been studied by postal inquiries in 1982 and 1986 (figure 1).

At the beginning of 1985, the Finnish National Board of Health issued an ordinance for the initiation of farmers' occupational health services in municipal primary health care centers in Finland. The ordinance was based on the proposals of the aforementioned research team. On the basis of the results of the second experiment concerning farmers' occupational health services, the Finnish National Board of Health issued a new ordinance in 1988 on the continuing organization of these services. During the experiment the producers of services and the representatives of the target group were involved in all stages of the study, from the planning to the implementation of such services.

The objectives of this paper are (i) to show how farmers' occupational health services were developed and what the system is in Finland, (ii) to analyze the problems of the system, and (iii) to show the effectiveness of the system.

System of occupational health services for farmers

The main objective of occupational health services for farmers is the elimination of health hazards from their work, either through a decrease in hazards or the provision of protection against them. Curative medical care, though not included in the system, is a part of the primary health care activity in the health care centers.

The developed occupational health care system is the following: Farmers' occupational health care starts with a basic survey in which willingness to take part in the health services system is inquired about, and the state and type of farming in the area of the health care center is evaluated. When the farmer has made the decision to participate, as the system is not obligatory, an occupational health nurse, sometimes together with an agricultural technician and a physician, analyzes the work conditions of the farmer. In the next stage, the health of the farmer is assessed and, if necessary, this stage includes also a health examination by a physician. The physician pays special attention to the following points (i) symptoms of musculoskeletal organs, (ii) symptoms of respiratory organs, (iii) symptoms of skin diseases, (iv) suspected occupational disease, and (v) problems of a farmer's work capacity.

In the case of work-related or other illnesses or possible illnesses, further actions are taken. Written feedback is then given the farmer.

The experiment showed that both the morbidity and mortality of farmers due to respiratory diseases is high in Finland. It was also shown that morbidity due to diseases of the musculoskeletal system (disability and prevalence of these diseases) was extremely high among farmers. These problems were particularly pressing among the farmers with small farms and those in livestock production.

Problems of farmers' occupational health services at the practical level

Although occupational health services for farmers are functioning at present in Finland, the aim of our group in Kuopio is to study and develop the system further. The goals in this area are: (i) to evaluate how the farmers' occupational health care system has been launched in the municipal primary health care centers in Finland, (ii) to give further knowledge to the health care authorities on how the system should be further developed, and (iii) to analyze the effectiveness of the system at the level of the individual farmer.

What, then, was the situation of farmers' occupational health services at the end of 1987 at the health care center level? Namely, about 50 000 farmers had joined the system. In other words about 30 % of ac-

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tive farmers had come within the reach of occupational health services. This result can be said to be good because the entire system only started, in practice, about three years ago. During this time about 20 000 farms have been visited and about 40 000 health examinations have been made.

About half of the doctors and nurses working in the system has received proper training. Only 16 health care centers from the total of 214 did not have a person properly trained in occupational health care. In addition there were 54 health care centers in which the persons dealing with farmers had no training in occupational health care for farmers. All the agricultural technicians working in occupational health care had taken a training course.

The proportion of farmers covered by occupational health services was higher among those with bigger farms than among those with small farms. The results showed that, in the first stage of establishing the occupational health services, the most progressive farmers had joined the occupational health care system. There were also differences by type of farm. Farmers having animals were more eager to join the system.

According to the farmers' occupational health survey made in 1986, 60–70 % of the farmers stated that occupational health services should be obligatory for farmers. The results showed that at least the attitude of almost all farmers is now favorable to this question.

Functional adequacy of farmers' occupational health services

The evaluation of the functional adequacy of occupational health services for farmers demonstrated that the essential question is the way in which work conditions are evaluated, ie, whether the real and essential health hazards have been observed. In the system, work conditions can be evaluated either through interviews of the farmer at the health care center or through a visit to the farm. The amount of useful advice given for improving work conditions was low in the interview. Only slightly more than 10 % of the farmers had received such advice. It can also be seen that written advice concerning changes in work methods or work conditions is not given very often within the system in Finland. However, advice on personal safety matters is present in both models of farmers' occupational health services. The effectiveness of occupational health care appears to lie in the use of personal safety devices. It also seems that a farm visit is a very essential part of the system.

Effectiveness of farmers' occupational health care in Finland

The effectiveness of farmers' occupational health services was studied in the farmers' occupational health surveys of both 1982 and 1986 (figure 1). According

to both surveys farmers change their occupational health behavior after coming within the scope of occupational health services. First, the farmers' knowledge about the appropriate means of reducing hazardous exposure had increased due to the occupational health experiments of 1980–1982 and 1985. The effectiveness of both experiments was also demonstrated by the proportion of farmers who had acquired personal protective equipment during the follow-up periods in 1979–1982 and 1982–1986 as a result of their participation in occupational health services. The proportion of farmers who had purchased personal protective equipment during both follow-up periods was considerably higher among those who had participated in the occupational health experiments than among the reference group.

The use of personal protective equipment was studied during the 1985 experiment and in the occupational health survey in 1986. According to the results the proportion of safety equipment users was higher in the study group than in the reference group. The effect could be seen in the case of respiratory protection, hearing protection, and skin protection. The farmers in the system also changed their clothes more often before and after pesticide work than the farmers in the reference group.

The effect of occupational health care was also compared to the effect of other variables. The indicator used was the start of the use of protective respiratory devices in pesticide work among full-time farmers in Finland in 1979–1982 and 1982–1986. Slightly more than 30 % of the full-time farmers started to use protective respiratory devices in pesticide work during the

Stage I	Farmers' occupational health survey, 1979 ("Before" survey)
Stage II	Farmers' occupational health services experiment, 1980–1982 (N = 3 200) — seven experimental municipalities — seven reference municipalities
Stage III	Farmers' occupational health survey, 1982 (First "after" survey) (N = 10 700) — same farmers as in stages I & II
Stage IV	Ordinance from the Finnish National Medical Board concerning the initiation of farmers' occupational health services
Stage V	Second farmers' occupational health experiment, 1985 (N = 881) — four municipalities, partly the same as in stage II, but all farmers in these municipalities were not included
Stage VI	Third farmers' occupational health survey, 1986 (Second "after" survey) (N = 2 866)
Stage VII	Ordinance from the Finnish National Medical Board concerning continuing organization of occupational health services for farmers (replacing the first ordinance)

Figure 1. Study design of farmers' occupational health experiments and surveys.

first follow-up period. The corresponding percentage during the second follow-up period was 41 %. Participation in occupational health services was the most effective variable determining the start of the use of protective respiratory devices in pesticide work. Compared to the effect of age and farm size, the effect of occupational health services was considerably higher. Adjustment for the other factors did not change this result. Furthermore, first-aid readiness also increased among the farmers.

Differences in the improvement of work conditions, were negligible, however, between those with occupational health services and those without. Thus the ultimate goal of the services was not realized. The reason for this failure may be that occupational health services in Finland probably concentrate too much on the use of personal protective equipment. This emphasis need not necessarily be a problem because a change

can be achieved, eg, through the training of the occupational health nurses and physicians. One should also keep in mind that the system is new. Therefore the providers of the services and the farmers are not yet prepared to suggest or make structural changes. We should not forget that farmers have financial problems too.

Concluding remarks

Occupational health services for farmers seem to be effective by making work behavior safer. When new occupational health programs are developed, it will be essential to evaluate empirically their functional adequacy and effectiveness in actual situations at the grass root level.