

## Directions for national mastitis control programs: experiences from the Netherlands

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### Abstract

10 The general aim of mastitis control programs is to improve udder health on dairy farms. Over the last five years an intensive national mastitis program was executed in the Netherlands with the goal to improve udder health at a national level. Different groups of farmers have different motivations and should be approached differently, and their behaviour is influenced by different advisors. Therefore, as many different groups of advisors as possible should be involved in the program.

15 Most of the veterinary practices in the Netherlands participated as did, in later years, other farm advisors. We experienced that for a successful program it is crucial to have knowledge on motivating factors of dairy farmers. Many advisors are convinced that the only way to change farmers' behavior is through economics. We found that economics are important, but that other factors are as important in influencing farmers' behaviour. To have a successful national mastitis

20 program it is advisable to involve professionals on communication in designing the program. Although the technical knowledge on which the program is built should be optimal, that generally is not the bottle-neck in being successful. There often is more to gain in presenting knowledge in such a way that it is actually used, than in increasing the amount of existing knowledge.

### 25 **Keywords**

Control programs, practitioner, communication strategies

## Introduction

Mastitis research workers, extension workers, and organizers of mastitis control programs, all have  
30 the intention to improve udder health. To actually improve udder health, knowledge of the technical  
background of the disease is important. Although in individual cases problem solving can be very  
difficult, several studies have shown that enough knowledge is available to be successful in farms  
that are motivated to improve their udder health situation (Green *et al.*, 2007; Lam *et al.*, 2007). For  
national or regional mastitis control programs, however, both motivated and non-motivated farmers  
35 need to be addressed. In order to reach as many farmers as possible, and to influence their behavior,  
it is important to have knowledge about their reasons for action and the way they can be influenced.  
This paper will discuss some of the experiences we have had in the Netherlands during our five-  
year mastitis control program in which various communication strategies were used.

## 40 The Dutch Udder Health Centre

In 2005, the Dutch Udder Health Centre (UGCN) was founded, with the aim to improve udder  
health in The Netherlands in a five-year mastitis control program. The initiative was taken by the  
Dutch Federation of Agricultural and Horticultural Organizations (LTO), the Dutch Dairy  
Association (NZO) and the Dutch Dairy Board (PZ) and was financed through levy money  
45 collected by PZ. Reasons for the initiative were a slowly increasing BMSCC, clinical mastitis  
problems that many farmers faced, and related annoyance and economic consequences, animal  
welfare, and the image of the dairy industry, including milk quality.

The program consisted of two parts, research and knowledge transfer, which had to be integrated  
for optimal use of funding. During the execution of the program several committees were active to  
50 monitor the progress and to advice on its content. In addition to the overall steering committee of  
the program, there were committees of veterinary practitioners, of dairy farmers coming from the  
practices of these practitioners, a research committee, and a communication committee. During the

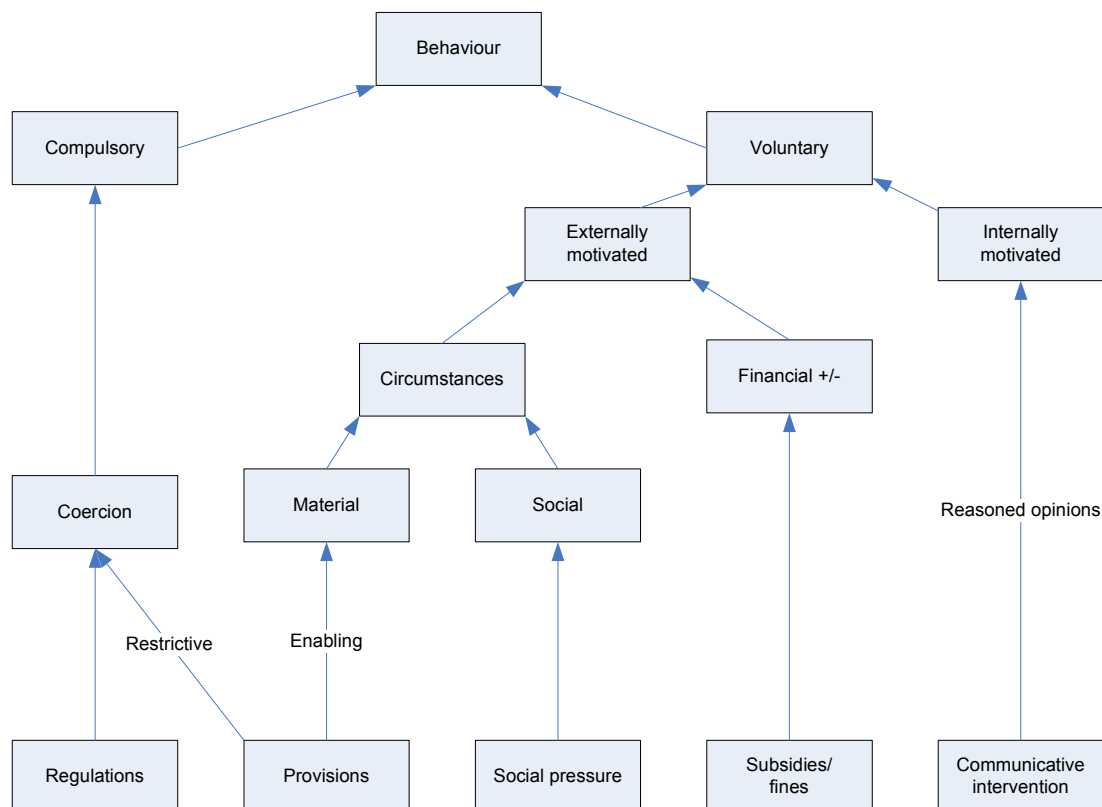
execution of the program two more committees were started, one with suppliers of all kind of udder health related products, and one with veterinary pharmaceutical companies.

55 The research part had three themes: 'Bacteria', 'Cow', and 'Farmer'. The theme 'Bacteria' related to research on pathogens (i.e. diagnostics), 'Cow' related to resistance of the cow (i.e. breeding, feeding), and 'Farmer' related to the dairy farmer (i.e. motivation). Reports on studies in all three themes will be presented during this IDF conference. The knowledge transfer part of the program will be discussed in some more detail in this paper.

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### Influencing farmers' behaviour

Behavioural change can be induced by several policy instruments as is presented in Figure 1 (van Woerkum *et al.*, 1999).



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Figure 1. Behavioural change by policy instruments (van Woerkum *et al.*, 1999)

In this model behaviour (the implementation of mastitis control practices) can be influenced  
70 compulsory and voluntary. Compulsory behavioural change is facilitated by coercion such as  
regulations and restrictive provisions. In udder health programs the effect of milk quality legislation  
and control systems can be more or less subscribed to coercion. With respect to udder health,  
coercion can only be used in extreme cases and only for bulk milk parameters. Thus, voluntary  
behavioural change is much preferred.

75 Motivation, being it internal or external, has a major influence on peoples behaviour. External  
motivation is influenced by financial stimuli through bonuses and penalties (Valeeva *et al.*, 2007),  
and by material and social circumstances. Internal motivation can be influenced by communicative  
intervention through reasoned opinions, such as persuading farmers based on technical arguments.  
To understand internal motivation of a farmer, we need to anticipate on the farmers' mindset and on  
80 the interaction of farmers with their social environment.

### **The approach chosen by UGCN**

Based on the theories described above and in earlier reports (Jansen *et al.*, 2009; Lam *et al.*, 2009)  
we choose an approach in which we tried to reach different groups of farmers. Because the  
85 compulsory route from Figure 1 was beyond our influence, we focused on the voluntary route, on  
internally motivated farmers and on those that needed to be externally motivated.

#### **Internally motivated farmers**

The private practitioner played an important role in transferring knowledge to internally motivated  
90 farmers. Dairy farmers considered their practitioner as the most important source of knowledge on  
mastitis and as their first contact person in case of udder health problems (Jansen *et al.*, 2009). The  
backbone of knowledge transfer to internally motivated farmers in our program was formed by  
study groups, organized by the practitioner. All material, knowledge and information needed to  
organize study groups was provided by UGCN. Of the approximately 300 veterinary practices in

95 the Netherlands, over 200 participated in the program, serving approximately 17,000 of 20,000  
dairy farmers in the country. Of these, over 3,000 participated in the study groups. Generally,  
participants of study groups were successful in improving udder health (Lam *et al.*, 2007), but  
marked differences existed in the success of practices to motivate farmers to participate in study  
groups. The technical background of the content of the study groups was described in a practical  
100 guide to first-rate udder health (Hulsen and Lam, 2008). Of this guide a copy was available for each  
individual farmer. The guide was distributed via the truck drivers of dairy companies, but  
unfortunately did not reach all farmers.

Another important way to inform those that are seeking for information is through the internet. Our  
website [www.ugcn.nl](http://www.ugcn.nl) was meant to give an overview on the UGCN activities, as well as technical  
105 background information on udder health. An important way to increase the number of visitors of the  
website was the e-mail newsletter, that was sent twice each month, linking the readers to interesting  
news on the website.

To decrease the distance between researchers and farmers several activities were organized, varying  
from ‘open-door-days’ at dairy farms, to small meetings with limited numbers of attendants, and  
110 conferences with several hundreds of visitors. At the open-door-days researchers from the different  
themes presented their findings to small groups of farmers visiting their standing-place at the farm,  
leading to much direct contact.

Finally, small scale study groups of farmers that were specifically interested in research, were  
organized. Researchers were invited to give a presentation to these groups, to explain to them in  
115 what way their research helped farmers forward to improve udder health.

#### External motivation through financial stimuli

External motivation can be accomplished by financial revenues through bonuses and penalties  
(Valeeva *et al.*, 2007). Because these issues were beyond the influence of UGCN, these are not  
120 further discussed. That does not mean that financial motivation can not be used in a program. A

study of Huijps *et al.* (2008) showed that most farmers (72%) underestimated costs of mastitis, mainly because they forgot to include production losses caused by elevated SCC. In a recent study of van Asseldonk *et al.* (2009), it was shown that visualizing ‘invisible’ production losses on a regular base was not helpful in motivating the average farmer. Valeeva *et al.* (2007) identified three  
125 distinct clusters that were driving motivation of dairy farmers with regard to mastitis management: milk price premium or penalty, motivation to have an efficient (well-organized) farm, and basic economic motivation. To facilitate the latter, a tool was developed and made available through our website, in which farmers could calculate their own farm specific costs of mastitis as well as the costs of management measures to decrease mastitis costs.

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#### External motivation through circumstances

Apart from internal motivation and financial revenues, ‘circumstances’ influence farmers’ behaviour. Van Woerkum *et al.* (1999) subdivide them in material and social factors (Figure 1). UGCN provided farmers with many practical tools to work on udder health, on the internet (i.e. mastitis cost calculator, self evaluation test on mastitis management, program to analyze clinical  
135 mastitis data) as well as illustrated fact sheets (i.e. treatment protocols, sampling techniques, CMT) and scoring cards (i.e. body condition, teat condition, hygiene) (Jansen *et al.*, 2010). Experience learned, however, that providing these tools hardly motivated farmers to use them (Jansen *et al.*, 2010). The tools need to be easily available and attractive, but that is not enough to make them  
140 successful. Other factors, such as risk perception, belief in own capacities, and experienced social pressure, were more important in that respect.

Based on that knowledge, UGCN organized several campaigns with the aim to influence farmers’ behaviour related to udder health. Campaigns were organized on wearing milkers gloves, on timely replacement of milking liners, and on the use of treatment protocols. During these campaigns, the  
145 above mentioned motivational factors were stimulated. For a campaign to be successful, it is

important to include specialists on both, veterinary science as well as communication science in the team (Jansen *et al.*, 2010).

Behaviour certainly is influenced by social pressure, and behaviour related to udder health management is no exception to that. During our program we tried to influence the social standard related to udder health issues. We did that through our campaigns, but also via the internet and our own UGCN magazine. In a study of Steuten *et al.* (2008) we found that almost all farmers, even reclusive traditionalists, were interested in farmers journals, specifically in farm reports. Thus, we provided them with this information.

Another tool we used, trying to influence the social standard, was the yearly UGCN udder health award for dairy farms with lowest BMSCC and clinical mastitis incidence. Each year 5 dairy farmers were awarded, setting a stimulating example to their colleagues, showing that it is possible to have an excellent udder health. Although it is doubtful whether this will directly lead to copying behaviour by other farmers, it is part of the whole strategy in which there is much attention for the subject from many different angles. This lead to an increased focus on the subject, not only in our own magazine, but also in other farmers journals.

## **Discussion**

During the first years of the program we worked hard on establishing a name in the field. In 2004 UGCN was new and unknown. By 2008, over 90% of farmers knew UGCN, and considered it an important source of information (Jansen *et al.*, 2010). Once you have reached that stage, it is possible to also chose other approaches of sending information. Farmers generally didn't question UGCN as the sender of the message anymore, so we could also use less rational approaches. Then, to reach as many farmers as possible it is very important to cooperate with as many different parties as possible in the field, trying to realize that the same message comes from different angles. Farmers do become frustrated, when they receive different information on a subject from different advisors (Steuten *et al.*, 2008). On the other hand, when they receive the same message from

different angles they tend to believe it, so this potential pitfall is a huge opportunity to influence farmers' behaviour. Publishing a sort of standard guidelines, like we did in our practical guide (Hulsen and Lam, 2007) does help in taking away much of the confusion.

175 In this paper some of the activities UGCN organized in the udder health program in the Netherlands were described. Although some of them were more successful than others, our main experience was that once practitioners and farmers start working with the information available, they become successful, with hardly an exception. The challenge therefore is to motivate them to do so. Thus when starting a mastitis control program, it is very important to include both, people with a  
180 background in mastitis, as well as people with a background in communication in the team.

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