

## Participatory evaluation of a Dutch warning campaign for substance-users

Loes Keijsers<sup>a</sup>, Matthijs G. Bossong<sup>b\*</sup> and Arend Jan Waarlo<sup>a</sup>

<sup>a</sup>Freudenthal Institute for Science and Mathematics Education, Utrecht University, Utrecht, The Netherlands; <sup>b</sup>Drug Information and Monitoring System (DIMS), Trimbos Institute for Mental Health and Addiction, Utrecht, The Netherlands

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This article shows an approach in evaluating and simultaneously furthering the implementation of a national warning campaign using participatory research. The campaign was a response to contaminated cocaine that appeared on the European drug market in 2004, causing extraordinary health risk for drug-users. To counter this, an elaborated warning campaign was conducted by the Drug Information and Monitoring System, a toxico-epidemiologic monitor of drug markets in the Netherlands. The process of this intervention was evaluated by a combination of qualitative and quantitative research methods to acquire valid and useful results. A concluding Delphi-technique resulted in shared proposals for improvement of future warning campaigns and the monitoring process. Amendments in the protocol for warning campaigns were made to facilitate the communication between different actors and to clarify responsibilities. Problems of information provision were tackled by the development of a reporting system of drug incidents. Further, the national coverage of the monitor was ensured by inviting new participants and the structure of the monitor was improved by setting up a monitor of drug incidents. The Delphi-technique also contributed to mutual understanding and common ground, and thus to optimising the conditions for further implementation.

**Keywords:** public health; risk management; drugs of abuse; Delphi-technique; warning campaign

### Introduction

Substance use implies health risks. Dutch drug policy aims to discourage substance use and to reduce the harm involved (De Kort and Cramer 1999). However, cocaine use is becoming more popular in the Netherlands (Van Laar *et al.* 2006) and in other European countries (European Monitoring Centre for Drugs and Drug Addiction 2006). Additional health risks appeared in 2004, when cocaine on the European drug market was contaminated with atropine, and several people were hospitalised for severe intoxication after cocaine intake (Boermans *et al.* 2006). To reduce the number of these hospitalisations and to prevent fatal drug incidents, a national warning campaign was conducted by the Drug information and monitoring system (DIMS), a toxico-epidemiologic monitor of drug markets in the Netherlands. This campaign aimed to timely inform (potential) substance-users about these additional health risks. Several actors, namely field workers (i.e., prevention professionals), policy makers and scientists participated in this campaign.

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\*Corresponding author. Email: m.bossong@umcutrecht.nl

The different perspectives of the involved actors had shown to go with communication problems in the past. Evaluation of this campaign was, therefore, a challenge in terms of creating common ground. Moreover, a quick response to a contaminated drug on the market is of vital importance for drug-users. To anticipate this, required actions of those involved had been laid down in a protocol based on past practical experiences. This first version of the protocol included the aims of a warning campaign, background of the organisational structure, list of professionals involved and their contact information, responsibilities and tasks of policy employees, and a decision tree (cf. Fearn-Banks 2002). This evaluation study sought to answer the following research questions:

- (1) How do different actors interpret and appreciate the protocol in use and what solutions do they suggest improving future warning campaigns?
- (2) Does the participatory, multi-method research approach in the current study contribute to improved communication and future concerted action?

### **Context: drug information and monitoring system**

The national warning campaign was set up by the DIMS. DIMS is a network of cooperating institutions and its main focuses are to identify the compounds of synthetic drugs, to describe prevalence of drugs in the market and trends in drug use, and to identify health risks for drug-users. The DIMS network consists of the coordinating and steering centre at the Trimbos Institute, which is the Dutch research institute for mental health and addiction, 24 'test-offices', and numerous anonymous 'providers'. Providers are individual substance-users, who bring drug samples for testing to the offices participating in DIMS. Most of these offices are part of the prevention departments of facilities for outpatient addiction care situated all over the Netherlands. Field workers (i.e., prevention professionals) working at these facilities subsequently inform the substance-user about the compounds of the provided drugs, based on laboratory analyses. This drug testing system enables scientists at the central DIMS-office to monitor synthetic drug markets by gathering and interpreting the information from the offices. When a contaminated drug with extraordinary health risks appears, this central office starts a national warning campaign (i.e., Red Alert) to prevent and reduce health risks. DIMS functions under the authority of the Dutch ministry of health, welfare and sport and is supervised by The Netherlands health care inspectorate. An organisation chart of DIMS is shown in Figure 1; more elaborate information about DIMS can be found in Spruit (2001).

### **Red alert atropine**

In 2004, cocaine contaminated with atropine, a medicine used in optometrics, appeared on the European drug market. Because the intake of small doses of atropine is highly dangerous (Winek *et al.* 2001), several people were hospitalised due to severe intoxication after cocaine use (Boermans *et al.* 2006). To prevent fatal accidents and reduce hospitalisations, a Red Alert campaign was conducted in The Netherlands to timely inform (potential) substance-users about the additional health risks. Flyers and posters, distributed and presented at target locations, and three press releases, picked up by different national written and broadcasting media, were among the communication means. Other European countries were informed as well through the Early warning system of the European monitoring centre for drugs and drug addiction.

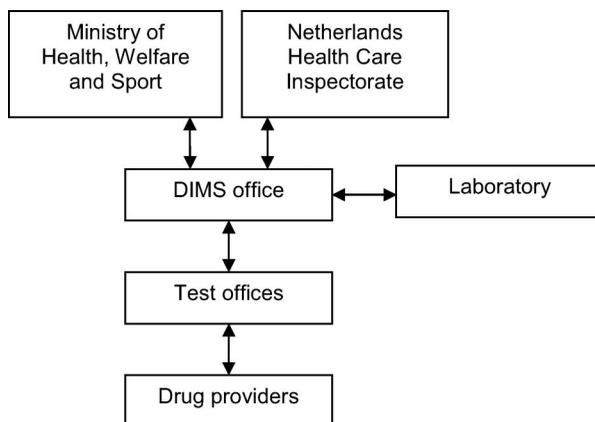


Figure 1. Organisation chart of the Drug Information and Monitoring System (DIMS).

Such a warning campaign has to deal with a complex situation and requires quick decisions. It can be characterised as risk communication (Rohrmann 1992), involving professionals with different backgrounds (policy makers, scientists and field workers) and risk exposed people (drug-users). The warning campaign on atropine was closely watched and steered by policy employees of the Ministry of health, welfare and sport and The Netherlands health care inspectorate. Scientists of the DIMS-office communicated with both these policy officials and the field workers at the test-offices. These latter professionals, in turn, were the informational gateway to drug-users. Because a warning campaign can be considered as risk communication within a crisis situation, frustration and mutual irritation may emerge (National Research Council 1989, De Rodes 1994). These negative emotions amongst actors can be indicative of lack of mutual trust and understanding. Because of the involvement of professionals with different backgrounds, responsibilities and knowledge, lack of mutual understanding was a foreseen difficulty in this campaign.

### Beyond top-down communication and decision making

In designing risk communication and health education campaign, two opposite theoretical models can be applied: an educational model (or empty bucket model) and a democratic model. The educational model proposes that experts can inform laymen and others who are less informed adequately by conveying one-way messages. This top-down view implies that receivers of information will listen, understand and remember the information that is given by the experts, as if receivers are empty buckets that can be filled with information. However, this unidirectional view has shown to be a myth and it has become clear by years of practical experience that a more bidirectional view on health and risk communication is needed. In order to ensure that messages are conveyed and understood adequately, all actors involved in the communication process should participate and interact with each other. The communication process should focus on sharing knowledge rather than persuasion, and on mutual understanding, rather than mere exertion of power (National Research Council 1989, De Rodes 1994, Fischhoff 1995). The same applies to decision making. When it is based on an interactive model, risks of rule rejection and circumvention by those who were not involved in rule setting (i.e., psychological

reactance) are reduced (Brehm 1966). For these reasons, communication, collaboration and decision making within the DIMS network are primarily based on the latter interactive model. This implied that the evaluation should also be a deliberation and negotiation process between all the actors in both the network and the warning campaign (Springett 2001). Thus, all participants were actively involved in the evaluation research, and were requested to express their opinions and thoughts on the risk communication process that took place during the warning campaign.

### **Evaluation research**

The aforementioned warning campaign was the first campaign guided by a protocol. This evaluation study of the atropine case aimed at providing guidelines for improvement of the protocol and for enhancement of its implementation. In addition, the evaluation study can contribute to mutual understanding and trust, on the condition that the research design enables dialoguing between the stakeholders. The Delphi-technique (Dalkey and Helmer 1962, Moore 1987), has shown to be a useful participatory tool for this purpose (e.g., Powell 2002). This technique aims to obtain the most reliable consensus amongst a heterogeneous group of experts, mostly by a series of questionnaires that are interspersed with controlled feedback. In each round, the respondents are informed about the results and invited to answer new questions, which build on these results. An important aspect is that the respondents remain anonymous. The researcher only structures this communication process by statistically analysing and summarising the answers, and resubmitting the results to respondents. Initially, the Delphi-technique was used as a forecasting tool, but it can also be used to establish priorities, to array possible alternatives, or to educate a respondent group (Dalkey and Helmer 1962, Moore 1987). As such, the Delphi-technique has been successfully used in a variety of disciplines, including risk assessment of illicit drugs (Van Amsterdam *et al.* 2004), preparing for health emergency situations (Crawford *et al.* 2004) and development of health intervention programmes (Fleuren *et al.* 2004).

### **Methods**

A complementary set of qualitative and quantitative techniques were used (Gendron 2001). The first part of the evaluation study served as an input for the Delphi-technique. It aimed at listing perceived problems and entailed a combination of a focus group interview, a questionnaire and interviews. Each data collection method surveyed opinions of different selections of members of the network. First, to gain more insight into the problems they experienced during the campaign, representatives of the test-offices participated in a semi-structured focus group interview (Morgan 1996). Second, a questionnaire addressing the communication between the central office and the test-offices was sent to all the field workers who were involved in drug testing. Third, to complete the variety of views within the network, we individually interviewed key members of the DIMS network and those who had expressed strong opinions before. These persons had most heavily influenced the overall opinion on the warning campaign amongst test-offices. In the second part of the study, the Delphi-technique (Dalkey and Helmer 1962, Moore 1987) was used to weigh the problems listed in the first part of the study, and to suggest and weigh solutions to the prioritised problems, respectively. Representatives of the test-offices and all staff members of the central DIMS-office participated in this iterative procedure. Importantly, this series of qualitative and quantitative techniques guaranteed that all actors in the DIMS network could be heard.

To guarantee the scientific quality of the evaluation study on this delicate topic, an external, and therefore impartial, researcher designed and executed the study. In particular, criteria for objectivity, such as validity, reliability and usefulness were taken into account (Schwartz and Mayne 2005). Hereafter, we will elaborate on the specific research methods.

### ***Focus group***

#### *Respondents*

To gain a tentative survey of issues, representatives of the test-offices ( $N = 13$ ) were invited to take part in a focus group interview (Response: 11 out of 13). This homogenous group of respondents, who have the same tasks and responsibilities in the network, were interviewed within a 1.5 hour session (Morgan 1996).

#### *Procedure*

In a short introduction, the aim of the interview was clarified and the anonymity of the respondents was assured. This semi-structured group interview focussed on three major topics, namely the activities of the participating offices during the Red Alert, the cooperation between the central DIMS-office, and the test-offices and suggestions for improving the process of a Red Alert. The interview took place on a quiet location at the central DIMS-office where respondents were used to meeting. In the focus group interview, the exchange of views was preceded by asking the participants to write down their own opinion so as to reduce group effects. A trained research assistant made notes of verbal and non-verbal behaviours. Additionally, the interview was audio-taped and transcribed afterwards, with the benefit of these observational notes. Finally, a content analysis of the transcripts was conducted (Carey 1995, Sim 1998).

### ***Questionnaire***

#### *Respondents*

To complete the broad exploration and to engage this group of professionals in the evaluation process, a digital questionnaire was sent by e-mail to all 51 employees of the test-offices (Response: 21 out of 51). During the focus group session, the representatives of the facilities ( $N = 11$ ), also filled out a written version of this questionnaire.

#### *Procedure*

The digital questionnaire included instructions as well as a phone number for help. For the focus group the researcher gave oral instructions. The questionnaire consisted of two identical sets of 10 items with a 5-point Likert scale. The first set dealt with the communication between the central office and the test-offices, in general. The second set focussed on communication during the actual warning campaign. Respondents indicated on items ranging from positive to negative about their opinion on the communication. They were asked: In general (or for the second set of 10 items: during the warning campaign on atropine), I think the communication with the DIMS-office is: pleasant-unpleasant; informal-formal; can be contacted easily-not easily; clear-unclear; close-distant; distinct-indistinct; easy-difficult; sufficient-insufficient; fast-slow;

professional-unprofessional. The internal reliability of the scales on the quality of communication was adequate: Cronbach's  $\alpha = 0.72$  concerning general situations (set 1) and  $\alpha = 0.91$  concerning the actual warning campaign (set 2).

### ***Individual interviews***

#### *Respondents*

To gather more in-depth information, representatives of the test-offices who were actively involved in the warning campaign ( $N = 6$ ), were invited for individual interviews (Morgan 1996). Five out of six responded to this request. Additionally, policy officials and staff members of the central DIMS-office were invited, and all responded ( $N = 6$ ).

#### *Procedure*

The interviews covered four to seven major topics, depending on the background of the interviewee. Topics were the following: the activities undertaken by the respondent during the Red Alert, activities in and opinion on the decision-making process, the cooperation between actors, the provision of information by the DIMS-office, the use of the protocol, experienced problems during the campaign, and suggestions for improvement of the communication and the protocol. All interviews were introduced by guaranteeing anonymity and took place on-site. Besides making verbal notes the interviews were audio-taped and summarised afterwards. For practical reasons, one person was interviewed by telephone. Another interview contended with technical problems of the audio-equipment, and was therefore summarised using notes. The two respondents involved were given the opportunity to check the summary of the interview over, of which both approved.

### ***Delphi-technique***

In the current evaluation study, the problems listed in the first phase of the evaluation study constituted the input of our Delphi-study. In three rounds, the respondents were invited to weigh these problems and to suggest and weigh solutions to the prioritised problems (Figure 2).

#### *Respondents*

All representatives of the test-offices ( $N = 15$ ) and all staff members of the central DIMS-office ( $N = 4$ ) were invited by e-mail to participate in this Delphi-study. DIMS staff members joined in the second round. Dropping out was low in the first round (2 out of 15), but increased in the second (5 out of 19) and third round (8 out of 19).

#### *Procedure*

Three successive digital questionnaires, including written instructions and contact information, were sent and could be returned by e-mail after completion. In each round, participants were requested to react within 6 work days. A reminder was sent at the fourth day. After 6 days, the next questionnaire was sent.

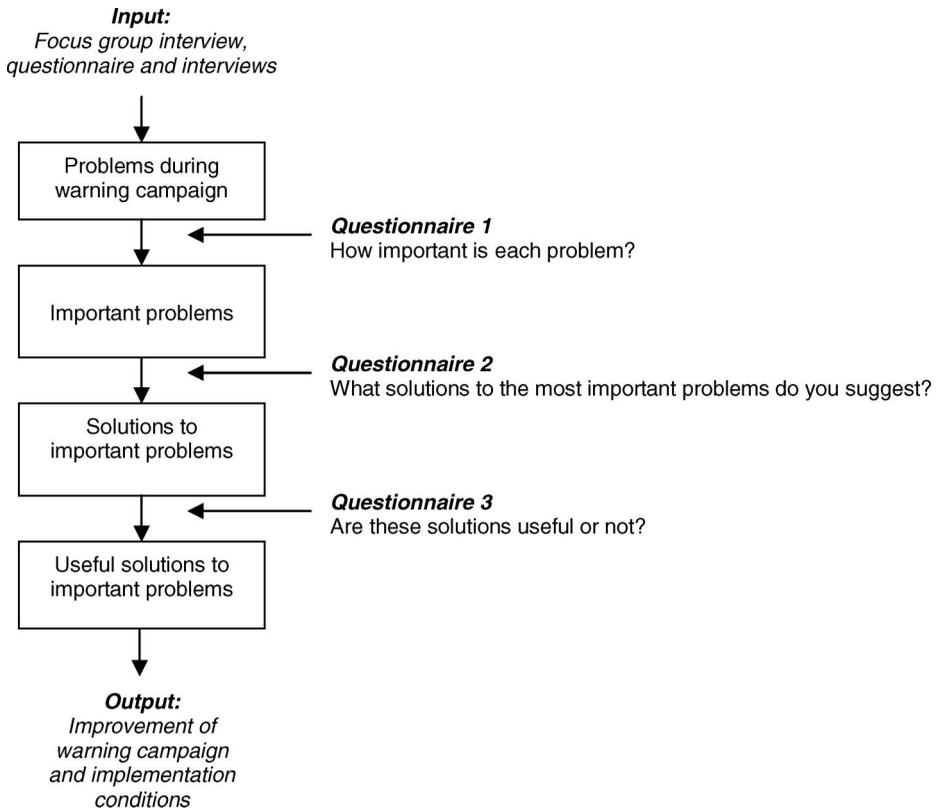


Figure 2. Outline of the iterative process of the Delphi-technique.

## Results

### *Results of interviews and questionnaire: input for the Delphi-study*

As a starting point for the Delphi-study, the individual interviews, focus groups and questionnaires were analysed. From the interviews and the focus group 28 problems emerged, most of them concerning the communication (e.g., the DIMS-office could not always be contacted by cell phone), provision of information (e.g., no information was available on activities undertaken by other test-offices) and decision making (e.g., there were too little guidelines for the test-offices to spread flyers). The questionnaire completed by the employees of the test-offices showed that they were generally satisfied with the communication. However, communication during the Red Alert was significantly more difficult, more formal and more distant than in general situations. These three points were thus included in the list of problems.

### *Results of the Delphi-study*

In the first questionnaire, the respondents were invited to weigh the 31 listed and sorted problems that emerged through aforementioned qualitative analyses of the interviews, focus group and from the questionnaire. Respondents had to tick every listed problem as 'not a problem', 'not an important problem' or 'an important problem'. Thirteen problems

were rated as ‘important’ by more than one-third of the respondents (Table 1). Most clearly, communication problems were identified as being important problems. For instance, the communication between the DIMS-office and the test-office was not adequate concerning drug incidents in the district of the test-office. All thirteen points mentioned were brought up in the second round with an invitation to suggest solutions to these problems. In this round, 101 solutions emerged. These were pooled and thematically ordered by the researcher, and subsequently resubmitted to the respondents in the third questionnaire.

The objective of the third round was to weigh these solutions suggested in the second round. Respondents had to classify each of the 101 solutions as ‘good solution’ or as ‘not a good solution’. For each problem, there was at least one solution that was subscribed as a good solution by more than 73% of the respondents, suggesting strong consensus amongst participants. Ultimately, the Delphi-study thus resulted in shared solutions to the most important problems. Table 2 shows the most subscribed solution to each problem mentioned in Table 1. Finally, the outcome of the Delphi-study, comprising of a well-defined set of improvements and guidelines for future warning campaigns, was communicated to all participants by oral presentations, a leaflet and a research report.

### *Improvements of the protocol and the monitoring process*

This was the first Red Alert in which the protocol for warning campaigns was in use. This protocol was improved as a result of this evaluation study. Three major improvements were made with implications for policy employees and the DIMS-office. First, to facilitate the communication and implementation of the campaign, a checklist was added to the protocol, in which the activities and responsibilities of both the policy employees and the DIMS-office were clarified. Second, we tackled the problem of information provision. We developed a reporting system of drug incidents, to ensure that identical and relevant information was gathered of each incident, and that all actors would have access to the

Table 1. The most important problems identified and rated by actors of the DIMS network.

1	The test-office was not well-informed about a drug incident in its own district, reported by the police to the central DIMS-office.
2	Answers (by the central DIMS-office) to questions of one test-office were not communicated to the other test-offices.
3	It was not clear which drug scene was involved (i.e., recreational, marginalised and/or domestic scene).
4	No information was available on activities undertaken by other test-offices.
5	The provision of information on drug incidents took a long time.
6	It was not clear when a Red Alert comes to an end.
7	Updates of information on the DIMS website lacked instructions on how to enquire drug-users.
8	Information on symptoms due to intake of contaminated cocaine was insufficient.
9	Information on potential risks of using cocaine in combination with other drugs was deficient.
10	The information updates on the DIMS website were not perfectly clear.
11	The flyer did not mention that it would take one week to report the test results of laboratory analyses.
12	In the press release it was suggested that flyers were being distributed, whereas this had not started.
13	The flyer was not appropriate for both the recreational and the marginalised scene.

Table 2. The most subscribed solution to each important problem category listed in Table 1.

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1	The central DIMS-office should always inform the representative of the involved test-office as soon as possible by e-mail or telephone.
2	The central DIMS-office should send a list that comprises frequently asked questions concerning the warning campaign by e-mail to all test-offices.
3	The test-office should acquire information about the drug scene by interrogating involved drug-users and forward this information to the central DIMS-office.
4	The central DIMS-office should always inform test-offices by e-mail about all activities undertaken within the DIMS network.
5	The central DIMS-office should urge the Ministry of Health, Welfare and Sport to reconsider the procedure concerning the disclosure of information about drug incidents, in particular information from hospitals and physicians.
6	The central DIMS-office should announce the ending of the warning campaign on the internal DIMS website.
7	The test-office should use the protocol for interrogation of drug-users.
8, 9	The test-offices should report information on symptoms from field work to the central DIMS-offices.
10	The DIMS-office should be sensitive to suggestions and additional information from the test-offices; <i>ex aequo</i> : the test-offices should actively inform the central DIMS-offices about lack of clarity.
11	The central DIMS-office should include in the flyer that test results of laboratory analyses will take one week.
12	The central office and the public information service of the Trimbos Institute should keep in touch with each other.
13	The test-offices should report to the central DIMS-office if the flyer does not fit in with the drug scene.

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same information. Third, it became clear that the ending of the warning campaign was not well-defined. Therefore, it was protocolled that in future warning campaigns, the ending will be timely and adequately corresponded with the Minister of health, who officially has to end the warning campaign. In addition to these changes in the protocol, it was made clear that aspects of the Red Alert involving both the DIMS-office and the test-offices could be improved. First, to avoid future mistrust and suspicions of concealment (or even deception), in future warning campaigns information from the DIMS-office will be immediately shared with all test-offices. Moreover, the DIMS-office will be more sensitive for requests of the test-offices for more information and test-offices will explicitly solicit for information when they think this is lacking. Second, a meeting was planned in which both the test-offices and the DIMS-office shared their expertise to improve the warning campaign, in order to reach the drug-users at risk in future similar situations more efficiently. Third, responsibilities within test-offices have to be adequately written down in local protocols. It has to be clear for employees of the test-offices who their spokesman is, what has to be undertaken in case of a Red Alert (and by whom), and who carries the overall responsibility.

In addition to improvements to the protocol and to the warning campaign, it also became clear that the monitoring process (the general activity of DIMS) could be improved. At the moment of the warning campaign some national regions were underrepresented, resulting in more difficulties in tracking information from drug-users and informing drug-users on contaminations. Therefore, one of the modifications that has been made to the network was to ensure national coverage by inviting extra offices in the network. In addition, it was made clear that the structure of the monitoring network in

The Netherlands could be improved by creating a monitor of drug incidents. Through this online system, policy makers and scientists can get a better grasp of the incidence and severity of drug incidents over a longer period of time. Realisation of this monitor is in progress and we hope to accomplish it in the near future.

### ***Additional results of Delphi-study***

It is known that a Delphi-based study can not only lead to pooled judgement, but can also have additional beneficial effects on the collaboration between different actors. To quote Robson (2000), *'the bringing together of stakeholders can have benefits over and above those connected with the current evaluation'*. During and after the Delphi-study respondents expressed that they had changed their mind after reading the summarised responses. For instance, sometimes their priorities changed or they showed more sympathy for other perspectives because of a lack of a comprehensive view beforehand. The Delphi-study also revealed considerable mistrust among field workers in terms of supposed withholding of information by the central office during the warning campaign. Because the central office reacted to these suspicions with surprise, this issue was discussed and successfully clarified in a regular meeting that took place during the evaluation study. Moreover, the implementation and use of the protocol concerning this warning campaign was discussed during the evaluation, leading to insight into differential interpretations and use by the staff members of the central DIMS-office as compared with field workers. Summarising, it is likely that this Delphi-study contributed to mutual understanding and trust, and consequently furthered the implementation of the warning protocol.

### **Discussion**

The current study examined the interpretation and appreciation of the protocol used for a national warning campaign by different actors in the DIMS network. Ultimately, it aimed at improving national warning campaigns on contaminated drugs. Moreover, we investigated the additional effects of a participatory multi-method evaluation research on the communication between actors with various backgrounds.

With the use of a complementary set of qualitative and quantitative methods, and a concluding Delphi-study, the most important problems and the best solutions were selected. Mainly problems in communication and provision of information were demonstrated. For all mentioned problems, a solution that was approved by the large majority of all participants in the Delphi-study was found. It is likely that when these solutions are implemented, by means of changing the protocol, alterations in future warning campaigns will be widely accepted (Brehm 1966).

Resulting from the participatory character of the methodology, all mentioned problems were explicated from the viewpoint of different actors during the evaluation research, contributing to mutual understanding and shared knowledge (National Research Council 1989, De Rodes 1994, Fischhoff 1995, Springett 2001).

### ***Strengths and limitations***

Based on our experience with this approach to evaluate a warning campaign, what aspects need to be highlighted? First, a particular strength of this evaluation study was the combination of qualitative and quantitative techniques, allowing divergent input from all participants. The concluding Delphi-technique resulted in convergence, necessary for

taking shared improvement measures. The focus group was helpful in surveying the issues at stake; interviews deepened our understanding of these issues. The questionnaires of the Delphi-technique completed the picture in terms of the relative importance of the issues brought up and in terms of eliciting and weighing solutions to the most important problems.

Second, characteristics of the Delphi-technique contributed to an increase in the internal validity of the results. The Delphi-technique, different from face-to-face methods, mitigates the influence of opinion leaders in a network. Because no immediate response is required, participants have sufficient time to make up their mind. Furthermore, the respondents deliver content and the researcher only structures the process. The turn-around time of a Delphi-study can be substantially reduced by using digital questionnaires sent by e-mail.

Third, we also like to draw special attention to the importance of the impartiality of the researcher if the evaluation object holds controversial aspects and the participants have different responsibilities, in this case illegal drug use and the testing of drugs that the authorities allow to take place. An involved researcher may hinder the communication process, arouse suspicion and bias the results in several ways. For instance, the results might be influenced negatively, because the researcher might have formed negative opinions about certain participants. The results might also be biased positively by making own functioning seem better than it really is (Schwartz and Mayne 2005).

Finally, to quote Engel (2001), in interpersonal relationships and communication '*the need to know and understand*' and '*the need to feel known and understood*' should be taken seriously. Thus, being engaged and heard in the evaluation process can be crucial in enhancing commitment to a joint undertaking, in this case the execution of a warning campaign on a contaminated drug. Additionally, participation of as many actors as possible contributes to the validity of the results. These respondents should include the draughtsmen of the protocol as well as those who are responsible for its implementation and execution. An indirect effect of the evaluation study was that it impacted on the regular meetings: issues were made more explicit and clarified.

Despite these positive side effects of the participatory approach, the current evaluation also suffers some limitations. First, there was a generally small response to the questionnaire. Apparently, not all employees of test-office were willing to participate in the research. However, we ensured that of each test-office at least one health professional filled in the questionnaire. Moreover, although the participation in the Delphi-study was high at the beginning, the attrition rate increased during the subsequent rounds of the Delphi-study, suggesting that this participatory approach was demanding for respondents. Second, achieving pooled judgement amongst a heterogeneous group of actors yields shared solutions. However, these solutions might suffer from simplification that may have occurred during the iterative process of a Delphi-study. Therefore, after implementation of the solutions, the warning campaign should be evaluated again. Only by repeatedly evaluating and improving a warning campaign, the most efficient intervention can be developed (World Health Organization 2004).

To conclude, participatory evaluation of a national warning campaign for drug-users amply came up to our expectations. It is an effort that pays off. The participants get involved in a collaborative learning process leading to mutual understanding and trust, and thus to optimising the conditions for further implementation of a warning protocol. The shared guidelines for improving the protocol and future warning campaigns that resulted from the Delphi-study, are practicable and will be supported by the different actors.

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