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When providers and community leaders define health priorities: the results of a Delphi survey in the canton of Geneva

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Abstract

The Delphi method was used to determine the health priorities in one Swiss canton. The opinion of various groups concerned, either as health professionals or as representatives of the general population, was gathered to identify the health determinants and health problems perceived as most important, to clarify the reasons for these choices, and to recommend interventions to be undertaken in order to improve the situation in the identified priority areas. Five panels, including health professionals as well as selected leaders of community groups with no direct involvement in health, were given the opportunity to reply to two rounds of questionnaires. There was a high convergence of opinion on health determinants and problems to be given priority between panels and between the first and second round. Priorities identified are mainly physical problems (cardiovascular disease, respiratory and breast cancer, AIDS, injuries due to road accidents, chronic back pain), psychosocial disorders (depression, suicide, violence in the family, stress), and problems of substance abuse (alcohol and tobacco). Unemployment and social isolation were chosen because of their perceived impact on health. Very few interventions were proposed in the medical technical or research areas. This may be due partly to the fact that good quality care is widely available and accessible in Geneva, whereas preventive programmes have not received enough attention in the past. Through the identified priorities and the proposed activities, a new vision of health emerges which gives more importance to psychosocial problems and the social environment. In this context, health promotion is seen as essential, acknowledging that sustained change in individual behaviours can only occur if the social and cultural context is taken into consideration. In conclusion, the results of this survey show that the Delphi method is a useful tool to reach consensus on health priorities and corresponding activities among a variety of actors. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Delphi survey; Health priorities; Priority setting

Introduction

The canton of Geneva is one of the smaller 23 Swiss cantons, with a population of ca. 400,000 and a geographic extension of 246 km². Like many industrialised regions, it has been confronted in past years with increasing health care costs. This is related to the diffi-

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	Political	Institutional	Ambulatory	NGO	Community	Total
First round	42	57	58	54	82	293
Response rate (n)	60% (25)	70% (40)	48% (28)	57% (31)	49% (40)	56% (164)
Refusal	(5)	(1)	(8)	(2)	(3)	(19)
Second round	25	40	29 ^a	31	40	165
Response rate (n)	76% (19)	80% (32)	72% (21)	84% (26)	83% (33)	79% (125)
Refusal	(1)	(0)	(1)	(0)	(0)	(2)
Final response rate	45%	56%	36%	48%	40%	43%

 Table 1

 Number of participants and response rate by panel

^a One person erroneously received the questionnaire during the second round not having participated in the first round.

culty of financing a health care system that is heavily biased towards treatment, care and cure at the expense of consistent preventive strategies and services¹. The current system guarantees excellent care for acute and chronic conditions and is widely accessible to the population. However, 90% of the expenses of the health sector go to curative care and only 10% to preventive services.

The health status of the population of the canton of Geneva can be generally considered excellent, according to one of the highest life expectancies in the world (74.5 years for men and 81.5 years for women), to a virtual disappearance of maternal mortality (two deaths in total between 1981 and 1993) and to a very low infant mortality rate (4.7/1000 live births in 1996) (OCSTAT, 1998). However, a more detailed analysis of available epidemiological data shows a slightly less favourable picture (Schopper, Ammon & Rougemont, 1998). Excessive alcohol intake (Etter, 1996) and related diseases (Bisig & Beer, 1997) are higher than in the rest of Switzerland and most western European countries; tobacco consumption is still high among men and women, and is increasing among young people (Amman et al., 1996; Le Gauffey, Efionayi-Mäder, François & Schmid, 1995); and dietary fatintake is too high (Bernstein, Morabia, Constanza, et al., 1992). As a consequence, lung cancer rates are persistently high in men and increasing among women

(Registre genevois des tumeurs, 1997) whereas cardiovascular diseases are the third cause of premature mortality (after cancer and violent deaths) (OCSTAT, 1998). In addition, breast cancer is more frequent in Geneva than in the rest of Switzerland and Europe, and suicide rates among women and adolescents are alarmingly high (OCSTAT, 1998)². The above data seem to indicate that the health status of the Genevan population could be improved. Thus, in 1996, the health department of the canton of Geneva requested the Institute for Social and Preventive Medicine to reappraise the current health priorities of the Genevan population and to recommend changes within the health sector. This should provide the basis for a new health strategy for the canton.

The Delphi survey presented here was carried out as part of this mandate between January and April 1997, with the purpose of gathering the opinion of various groups concerned either as health professionals or as representatives of the general population who are potential users of health services. Specifically, the objectives of the survey were (1) to identify the health determinants perceived as most important, (2) to identify the health problems that should be given special attention, (3) to clarify the reasons for these choices, and (4) to recommend interventions to be undertaken in order to improve the situation in the identified priority areas.

The Delphi technique was first developed by the Rand corporation in 1948 as a forecasting tool (Dalkey, 1969). It has since been used in many different fields, including health and medicine, to reach consensus on complex issues in a systematic manner. For example, it has been widely used to define research priorities (van der Beek, Frings-Dreesen, van Dijk & Houtman, 1997; Harrington & Calvert, 1996; Rudy, 1996; Hutchinson & Fowler, 1992), to develop a consensus on public funding of health care services (Charlton, Patrick, Matthews & West, 1981; Hadorn & Holmes, 1997) or on general health service priorities (Moscovice, Armstrong, Shortell & Bennett, 1977; Car-

¹ The Swiss health system is extremely decentralised, each of the 23 cantons being responsible for developing its own health system and health policy. Only a few issues are regulated centrally, as for example private health insurance.

² Suicide represented 2.6% of all deaths in Geneva in 1995. Female suicide rates are higher than the Swiss average, whereas male rates are slightly lower. Switzerland is among the "high suicide rate" countries in Europe, with France, Denmark, Austria, Finland and Germany. Suicide rates are twice as high as in the US and three times higher than in Great Britain or Italy.

bonell, Gascon, Nolasco & Alvarez-Dardet, 1991) and to design health policies (Rainhorn, Brudon-Jakobowicz & Reich, 1994; Bettcher, Sapirie & Goon, 1998).

Many other methods have been used in recent years to estimate the relative importance of specific health conditions, including documented or perceived severity of health conditions (Smith & Jacobson, 1990), premature mortality (Centers for Disease Control, 1986), indicators combining mortality and morbidity (Colvez & Blanchet, 1983), potential for health gain (Robison, 1993; Nord, 1992) or cost-effective health gain (Hadorn, 1991). In some instances, a "public" debate was held to solicit broad public consensus on health priorities (Gouvernement du Québec, 1997). The use of quantitative methods alone seemed unsatisfactory to us, as it would have been unacceptable to health professionals and the general public to be presented with a set of priorities without taking their views into consideration. We chose the Delphi method rather than a standard opinion survey as it allowed us first to gather the opinion of different groups and then to provide them with an opportunity to react to the opinions expressed. Participants initially respond based on their own professional and personal experience and then revise their judgement in light of the general opinion before reaching a final consensus.

The Delphi survey was complemented later on by a quantitative analysis of health priorities estimating disability adjusted years of life lost (Schopper et al., 2000). To our knowledge, no formally published data exist on the use of the Delphi method to elicit consensus on health priorities in a defined population including providers and community leaders in the survey³.

Methods

Since its initial development, the procedures to follow when using the Delphi method have been standardised (Delbecq, van der Ven & Gustafson, 1975; Listone & Murray, 1975). Panel members are chosen purposefully either for their expertise, because they run or use medical services or because they represent interested groups. Usually thirty panel members are considered to be sufficient if the panel group is homogenous. Their opinion on a series of questions is sought on an individual and anonymous basis in several rounds. After each round, results are summarised and used to develop a questionnaire for the next one. The number of rounds varies between two and four. The first round is often used to build-up an initial list of items, the second and third round being used to reach consensus. In case of persistent divergence, a fourth round may be added. The respondents must be given at least one opportunity to re-evaluate their original replies in the light of the overall responses (Levine, 1984). A Delphi survey is considered complete when there is convergence of opinion or when a point of diminishing returns is reached (Fink, Kosecoff, Chassin & Brook, 1984).

Panel members

In our study five panels were defined, each of them representing a fairly homogenous group: all political leaders involved in decision making with regard to health and social support issues ("political"), the direcof medical social institutions tors and ("institutional")⁴, a purposeful sample of medical and paramedical professionals established in private practice ("ambulatory"), and managers of health-related non-governmental organisations ("NGO"). Finally, selected leaders of community groups with no direct involvement in health ("community") were included. This last panel was to represent the opinion of the general population and was over-represented in the first round as we expected a lower rate of return than from the four other panels (see Table 1). The choice of panel members was generally eased by the fact that the canton of Geneva is small both in population and area. The various groups of professionals and community representatives are well known, easy to identify and to reach. Overall, 293 persons were given the opportunity to participate in the survey.

The questionnaires

A first questionnaire, providing a comprehensive list of health determinants (20 items) and another list of disease-oriented problems (43 items), was designed on

³ A technique similar to ours was used to determine health priorities in one region of France. The French Ministry of Health proposed in 1995 to use the Delphi method during the regional health conferences to establish health priorities. A Delphi survey was carried out in Ile-de-France in 1996, leading to a report: Margue Y, Lombrail P. Etude sur les priorités de santé publique en Ile-de-France, Mai 1996.

⁴ In Geneva, the vast majority of institutional care (hospitals, old-age homes etc.) is publicly administered and funded, whereas virtually all out-patient (ambulatory) care is provided by private practitioners. The directors of medical and social institutions can be health or other professionals (lawyer, economist etc.).

	Political %	Institutional %	Ambulatory %	NGO %	Community %	Total %
Alcohol abuse	67(2) (2)	63(2) (2)	81(1) (2)	76(1) (1)	63(2) (1)	70(1) (1)
Tobacco abuse	72(1) (1)	80(1) (1)	81(1)(1)	56(3) (2)	37(8) (5)	65(2) (1)
Deteriorated family environment	39(6) (6)	50(3) (5)	57(3) (4)	56(3) (4)	67(1) (3)	55(3) (5)
Unemployment	61(3) (5)	43(6) (4)	48(4) (5)	64(2) (2)	57(3) (2)	52(4) (3)
Social exclusion	55(5) (4)	50(3) (3)	48(4) (6)	40(7) (6)	57(3) (3)	50(5) (4)
Stress	61(3) (3)	37(7) (5)	48(4) (3)	44(6) (5)	40(7) (8)	44(6) (5)
Bad nutrition	28(9) (6)	30(9) (8)	29(8) (9)	52(5) (6)	30(9) (9)	34(7) (7)

Table 2 Health determinants by order of priority and by panel^a

^a The first figure in each cell reflects the actual percentage of panel members who have listed a given item as a priority in a set of five. The first figure in parentheses indicates the actual ranking of this item within the list of five; the second shows the level of priority which it is given by the panel members.

the basis of previous studies⁵ and pilot-tested with a small group of professionals and lay persons. The first round could thus be directly used to elicit the opinion of panel members on what they consider to be the ten most important determinants and health problems. Items were presented in random order and each panel member was encouraged to add other items that were not included on the lists. Participants were asked to explain their choice and to recommend specific actions to be undertaken in order to act on the health determinants and alleviate the prioritised problems.

After 6 weeks, two recalls and a response rate in excess of 50%, responses were analysed, summarised and used to generate a second questionnaire. This one listed 12 determinants and 18 health problems that had been chosen as priorities by at least 30% of participants during the first round. The items were presented in order of decreasing priority as indicated by the frequency of citation during the first round. In addition, based on the proposals made by participants in the first round, a list of possible actions was drawn up for each item. In this second questionnaire, panel members were asked to choose five determinants and ten problems and indicate their own priority. For each item participants were also asked to set a priority score

from 1 to 5 for the recommended actions. After another 6 weeks and two recalls with a response rate of 79%, the final data analysis was carried out.

Data analysis

Data were entered and analysed in standard Epi-Info and SPSS softwares. Quantitative analysis included the assessment of the frequency of item selection, and the calculation of priority scores. Results from open-ended questions on reasons for choice and actions proposed were assembled into appropriate categories and synthesised for use in the second questionnaire.

Results

The response rate by panel for each round is shown in Table 1. Fifty-six percent of those invited to participate in the survey responded in the first round. Response rates are spread fairly evenly across panels, with the lowest rate in the ambulatory group. Some participants found it difficult to fill in the first questionnaire; they had difficulty in making a choice and in separating personal opinion from professional bias. Reasons for explicit refusal were feeling incompetent to give a personal opinion (including some of the decision-makers), and not feeling concerned by the study (medical specialists). However, some participants, mainly in the NGO and community panel, went to great pains to gather a consensus opinion from their respective group (20 persons and more) before replying in both rounds. The final results thus reflect the opinions of many more persons than the response rates indicate, in particular in these two panels. In the second round, 79% of those having participated in the first round filled in the questionnaire.

⁵ Three studies carried out in Geneva examined the health status of the population and perception about health priorities: La santé des genevois. Les Cahiers de la Sané. No. 1, Juin 1993; Etter JF. Rapport d'évaluation du CIPRET-Genève. IMSP, Université de Genève, 1996; la santé dans le canton de Genève, lère enquête Suisse sur la santé. ISP, Lausanne, 1996. General morbidity and mortality patterns for the European region were taken from: European Community Atlas of Avoidable Deaths. Second Ed. Vol. 1. Oxford University Press 1991; and Investing in Health. World Development Report 1993. Oxford University Press. In addition, the questionnaire developed for the previously mentioned Delphi study in Ile-de-France was used.

Table 3 Activities proposed to decrease alcohol abuse

• Prohibit alcohol advertising

• decrease the price of non-alcoholic beverages and increase price of alcoholic beverages

- Intensify information campaigns on the negative consequences of alcohol abuse, in particular directed at young people
- Encourage information dissemination and special activities in the working place
- Promote better management of personal alcohol
- consumption through a media campaign
- Strengthen support provided to families of alcoholics
- Promote and improve quality of care provided to alcoholics
- Improve training of doctors to address this issue in a better way

Health determinants

The seven determinants selected as a priority by at least 30% of all panel members are shown in Table 2. By and large, there is agreement on alcohol and tobacco abuse as being the most important health determinants to be tackled, with the notable exception of the community panel which ranks tobacco abuse comparatively low. In contrast, community leaders seem to perceive social determinants such as unemployment, social exclusion and a deteriorated family environment generally as being more important than providers do. All panels gave priority to social determinants over issues such as illegal and legal drug abuse, unsafe sexual behaviour, pollution, and pro-

Table 4

Health	problems	by	order	of	priority	and	by	panel
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fessional exposure to health risks. The reasons mentioned for setting these priorities were mainly the frequency and recent increase of the phenomenon and its important impact on health, often referring to a vicious cycle, including several of the determinants (i.e. unemployment can lead to a deteriorated family environment, to additional stress, to alcohol abuse and social exclusion). The activities proposed usually included a range of legal, social, environmental and medical measures. As an example, activities proposed to deal with alcohol abuse in a better way are shown in Table 3.

Health problems

The 15 most important health problems identified as such by at least 30% of the panel members are shown in Table 4. Depression and cardiovascular diseases unanimously rank as the top two. A high rank was given to "violence in the family" by all panels. Major divergence between the panels appears with regard to AIDS, rated as a high priority by the community leaders and given a lower priority ranking by the politicians. But more interestingly, breast cancer, still a major cause of premature death for women in Geneva, is ranked high by most health professionals but given low priority by the community. In addition, hypertension is rated relatively low by the community and NGO panel, whereas it is given high priority by the two "medical" panels (institutional and ambulatory). Only community leaders gave a high rank to dental health, 63% mentioning this as a priority, as compared

	Political	Institutional	Ambulatory	NGO	Community	Total
Depression	94(1) (1)	97(1) (2)	86(1) (1)	84(2) (1)	83(1) (1)	89(1) (1)
Cardiovascular disease	89(2) (2)	93(2) (1)	81(2) (2)	90(1) (2)	73(2) (2)	81(2) (1)
AIDS	56(8) (8)	67(4) (5)	62(6) (6)	72(3) (4)	70(3) (3)	66(3) (3)
Breast cancer	78(3) (4)	60(7) (7)	76(4) (7)	68(4) (6)	46(11) (11)	64(4) (7)
Chronic back pain	39(10) (11)	73(3) (4)	71(5) (4)	68(4) (8)	53(7)(7)	63(5)(6)
Respiratory cancer	78(3) (3)	63(5) (3)	62(6) (5)	56(8) (6)	53(7) (5)	61(6) (4)
Violence in the family	61(6) (5)	47(11) (10)	57(8) (8)	64(6) (3)	67(5) (4)	59(7) (5)
Hypertension	61(6) (8)	63(5) (6)	86(3) (3)	44(10) (10)	43(12) (10)	58(8) (9)
Suicide	50(9) (7)	53(9) (9)	38(12) (10)	60(7) (5)	70(3) (5)	56(9) (8)
Injuries due to road accidents	67(5) (6)	53(9) (12)	57(8) (9)	52(9) (9)	50(9) (9)	55(10) (10)
Cerebrovascular disease	39(10) (10)	60(7) (8)	33(13) (14)	32(12) (11)	50(9) (8)	44(11) (11)
Diabetes	28(15) (15)	43(13) (14)	33(13) (15)	44(10) (14)	40(13) (12)	39(12) (14)
Alzheimer	39(10) (12)	47(11) (11)	33(13) (16)	28(13) (16)	37(14) (14)	37(13) (12)
COPD	39(10) (13)	43(13) (13)	33(13) (13)	28(13) (13)	33(16) (13)	35(14) (12)
Osteoporosis	13(14) (16)	43(13) (15)	48(10) (10)	24(16) (15)	23(17) (17)	34(15) (15)

^a The first figure in each cell reflects the actual percentage of panel members who have listed a given item as a priority in a set of ten. The first figure in brackets indicates the actual ranking of this item within the list of ten; the second shows the level of priority which it is given by the panel members.

Table 5

Activities proposed to improve the situation with regard to depression

• Provide information to the general public and in particular young people to de-dramatize the problem

• Inform the general public about the early symptoms of depression

- Improve detection of masked depressions
- Create places for information provision, active listening and counselling
- Create support groups for patients and their families in each neighbourhood

• Improve treatment and make it more holistic rather than purely medical

• Facilitate access to long term treatment

to 24% across all panels (not shown in Table 4). The criteria most frequently used to explain the choice of a priority is the frequency of the health problem and its severity, using terms such as "disabling", "degrading", "painful" to qualify the loss in quality of life due to the disease. In addition, the criteria of negative social perception was used to explain the choice of depression, suicide and violence in the family as problems that need heightened attention. Terms used were "hidden problems", "more frequent than what we think or know", and "social taboo".

Virtually all respondents proposed several actions that should be undertaken to alleviate the priority problems. Most of these relate to primary and secondary prevention. Suggested preventive activities span a large spectrum and go well beyond the classical behavioural interventions. The necessity to intervene at a very early age, giving special responsibility to teachers and parents was repeatedly emphasised. Strengthening and making effective use of social networks was seen as important in implementing preventive activities. A better collaboration with the media was frequently proposed, as well as the need to improve the training of medical doctors to enable them to address psychosocial problems (depression, violence in the family, suicide, drug abuse) in a more efficient way. Where appropriate (road injuries, violence in the family, AIDS), legal or regulatory measures were recommended. Very few interventions were proposed in the medical technical or research areas. As an example, activities proposed by a majority of participants to tackle the problem of depression are shown in Table 5.

Between the first and the second round, there was no change in the five health determinants and the ten health problems that were cited most frequently as priorities. There were, however, minor changes in the order of priority within these lists between the two rounds.

Discussion

Before entering into a discussion of the results, we would briefly like to reflect on advantages and possible pitfalls of the method used. The main advantage of this technique is that people can express their opinion anonymously on a difficult subject, while being able to reflect on the combined responses of the group. The Delphi method thus avoids conformity pressure and domination by influential panel members, which could occur in individual or group interviews, but still provides consensus. However, the reliability of the Delphi method depends largely on the selection, responsiveness and quality of the participants, on the size of the panels and the number of rounds. In defining the five panels we attempted to create relatively homogenous groups with regard to their professional or community responsibilities and their involvement with the health system. The final response rate (43%) was acceptable for this type of survey, but the number of panel members responding in the second round was well below the "ideal" number of thirty in two panels. In the "political" panel (19/42) this can be explained by the fact that the panel was restricted "by nature" as all political decision-makers with regard to health and social support issues had been included. However, the low response rate of the "ambulatory" panel (21/58) is unsatisfactory.

Overall the quality of the responses was very good, as indicated by the fact that questionnaires were filled carefully and adequately, with many detailed answers to the open questions. Several respondents called to first clarify what was expected of them, often fearing to express personal views or not feeling empowered to express their opinion on such a difficult subject. We already stated that some of the participants in the NGO and community panel sought the consensus opinion of their larger group before answering, thus increasing the representativeness of their responses.

A possible pitfall in our study is the use of a questionnaire in the first round which was not illicited from the group itself. Although there was ample space and encouragement to add more items in both lists (health determinants and disease-oriented problems) only few participants did so. This may be explained by the fact that our initial lists were based on studies and opinion surveys from Geneva and France and were very comprehensive. One could argue that this will lead to a "conservative" consensus. However, as discussed below, the study brought some unusual problems to the fore.

This Delphi study on health priorities, carried out in the well defined and circumscribed setting of the canton of Geneva, has highlighted several issues.

1. Traditionally the Delphi method has been used to

gather the opinion of "experts". Our experience shows, however, that it can also be very useful to gather the opinion of non-experts who are concerned with the subject under discussion. With regard to their understanding of issues and their willingness to initiate the debate we did not encounter more problems in the "community" panel than in the others. The final response rate of the "community" panel was slightly lower (40%) than the average of the four professional panels (46%, ranging from 36 to 56%). But as mentioned earlier, many of the respondents polled the opinion of their respective group.

- 2. We found an astonishing convergence of opinion on health determinants and problems to be given priority between panels and between the first and second round. With few exceptions there is agreement between panels despite the fact that they are composed of people with different professional backgrounds, experiences and responsibilities. Some of the priorities identified are mainly physical problems (cardiovascular disease, respiratory and breast cancer, AIDS, injuries due to road accidents), others represent psychosocial disorders (depression, suicide, violence in the family, stress), and problems of substance abuse (alcohol and tobacco). Chronic back pain combines physical as well as psychosocial aspects. Finally, unemployment and social isolation are described as societal phenomena that have a significant impact on health.
- 3. The differences of opinion point to the need for more and better targeted information to certain groups. For example, the "community" group, representing the general population, must be better informed about the mortality and morbidity impact of breast cancer, hypertension and tobacco abuse. The results of the study may indicate that past and current information campaigns have not been efficient enough. This should be explored further. On the other hand, decision makers need to understand better the importance of chronic back pain which is one of the main reasons for disability in men in Switzerland.
- 4. Some results were surprising and pointed to "hidden" problems. These include health and social issues that are currently not well documented but are perceived as frequent and severe, such as depression, a deteriorated and/or violent family environment, social exclusion, unemployment and stress. Concerning depression, a population-based study (Amman et al., 1996) had shown in 1993 that about 6% of men and 9% of women living in Geneva were suffering from a medically diagnosed depression at the time of the study, twice the average Swiss rate. In addition, more than 30% of the respondents considered themselves to be in bad mental condition. Regarding violence in the family, data on physical abuse of children, includ-

ing sexual abuse, are still very patchy (mainly notification of cases). However, a recent study showed that a third of school-aged girls and 10% of boys in Geneva have suffered from some type of sexual abuse (Halperin, Bouvier, Rey & Wicky, 1997). The first study on domestic violence against women was carried out in Switzerland in 1996, showing that during their lifetime 20% of women had been physically abused and 40% psychologically abused by their partner(s) (Gillioz, De Puy & Ducret, 1997). There are no specific data for the canton of Geneva. Concerning other social issues, the number of unemployed receiving financial support is available (about 8% of the active population in 1997). However, the relationship between unemployment and health problems, as well as the more diffuse issue of social exclusion, are not sufficiently documented. There clearly is a need to gather more consistent and accurate data over time on all these issues.

- 5. Surprisingly, and although at least two panels mainly comprised medical professionals, very few interventions were proposed in the medical, technical or research areas. This may be due partly to the fact that care, and in particular sophisticated tertiary care, is widely available and accessible in Geneva, whereas in some areas preventive programmes have not received enough attention in the past. In addition, basic research was probably not perceived as an activity that could be carried out independently in Geneva (i.e. research for an HIV vaccine). Through the identified priorities and the proposed activities, a new vision of health seems to emerge which can be summarised in five points.
 - Psychosocial problems emerge as priorities next to more "classical" diseases such as cardiovascular diseases and cancers.
 - The importance of the social environment and of individual reactions in determining the health status are unanimously acknowledged by medical professionals and are those emanating from the lay public.
 - Health promotion is seen as essential, but has to be rooted in the social context. It should not be left to health professionals alone. In particular, the school and media communities have an important role to play.
 - As the curative health care system seems to be fairly satisfactory, the main effort should be focused on disease prevention. In doing so one must acknowledge that sustained change in individual behaviours can only occur if the social and cultural context is taken into consideration.
 - As a consequence, the importance of social, economic, legal and educational policies and interventions as part of a health strategy have to be emphasised.

Finally, the process of the survey in itself has proven very useful to raise awareness about health priorities. Through their active participation and after receiving the full report of the survey, respondents felt involved and more readily accepted the outcome. This has laid the foundation for the broader discussion needed to reach a consensus on a health strategy for the canton. In conclusion, the results of this survey show that the Delphi method is a useful tool to reach consensus on health priorities and corresponding activities among a variety of actors.

References

- Ammann, P. et al. (1996). In W. Weiss, E. Zimmermann, & A. Kiefer, La santé dans le canton de Genève: projet GCI/ Coopération intercantonale en matière d'analyse des données issues de la lère enquête suisse sur la santé. Lausanne: ISP.
- van der Beek, A. J., Frings-Dreesen, M. H., van Dijk, F. J., & Houtman, I. L. (1997). Priorities in occupational health research: a Delphi study in the Netherlands. *Occup. Environ. Med.*, 54(7), 504–510.
- Bernstein, M., Morabia, A., Constanza, M. et al. (1992). Equilibre nutritionnel de l'alimentation de la population adulte résident à Genève. Soz. Präventivmed, 39, 333–344.
- Bettcher, D. W., Sapirie, S., & Goon, E. H. T. (1998). Essential public health functions: results of the international Delphi study. *World Health Stat. Q*, 51(1), 44–54.
- Bisig, B., & Beer, V. (1997). Mortalité. In Rapport sur les Données Cantonales de l'Enquête Suisse sur la Santé. Lausanne: Institut suisse de la santé publique.
- Carbonell, C., Gascon, E., Nolasco, A., & Alvarez-Dardet, C. (1991). Opinion on health priorities in the community of Valencia. *Gac. Sanit.*, 5(24), 135–138.
- Centers for Disease Control (1986). Premature mortality in the United States: public health issues in the use of years of potential life lost. *MMWR*, *35*, 1S–11S.
- Charlton, J. R. H., Patrick, D. L., Matthews, G., & West, P. A. (1981). Spending priorities in Kent: a Delphi study. J. Epidemiol. Community Health, 35(4), 288–292.
- Colvez, A., & Blanchet, M. (1983). Potential gains in life expectancy free of disability: a tool for health planning. *Int. J. Epidemiol.*, 12(2), 224–229.
- Dalkey, N. C. (1969). [bkt] The Delphi method: an experimental study of group opinion. RM-5888-PR. Santa Monica: Rand Corp.
- Delbecq, A. L., van de Ven, A. H., & Gustafson, P. H. (1975). Group Technique for Programme Planning. A Guide to Nominal Group and Delphi Processes. Glenview, Illinois: Scott, Foresman & Company.
- Etter, J. F. (1996). Enquête auprès de la population genevoise sur la consommation d'alcool et sur les opinions concernant la prévention de l'alcoolisme. Institut de médecine sociale et préventive, Genève.
- Fink, A., Kosecoff, J., Chassin, M., & Brook, R. (1984). Consensus methods: characteristics and guidelines for use. *AJPH*, 74(9), 979–983.
- Gillioz, L., De Puy, J., & Ducret, V. (1997). Domination et violence contre la femme dans le couple [pub]Payot, [loc]Lausanne.

- Gouvernement du Québec (1997). Priorités nationales de santé publique 1997–2002. Ministère de la Santé et des Services sociaux.
- Hadorn, D. C. (1991). Setting health care priorities in Oregon. JAMA, 266, 2135–2141.
- Hadorn, D. C., & Holmes, A. C. (1997). The New Zealand priority criteria project. Part 1: Overview. BMJ, 314(7074), 131–134.
- Halperin, D., Bouvier, & Rey, Wicky H. (1997). A contrecoeur, à contre-corps. Regards pluriels sur les abus sexuels d'enfants. Genève: Ed. Médecine et Hygiène.
- Harrington, J. M., & Calvert, I. A. (1996). Research priorities in occupational medicine: a survey of United Kingdom personnel managers. Occup. Environ. Med., 53(9), 642–644.
- Hutchinson, A., & Fowler, P. (1992). Outcome measures for primary health care: what are the research priorities? *Brit.* J. Gen. Pract., 42, 227–231.
- Le Gauffey, Y., Efionayi-Mäder, D., François, Y., & Schmid, H. (1995). Les consommations d'alcool, de tabac et de drogues des écoliers de 11 à 16 ans en Suisse. Lausanne: Institut suisse de prévention de l'alcoolisme et d'autres toxicomanie.
- Levine, A. (1984). A model for health projections using knowledgeable informants. World Health Stat. Q, 37(3), 306–317.
- Listone, H. A., & Murray, T. (1975). *The Delphi method, techniques and applications*. Massachusetts: Addison-Wesley Publishing Company.
- Moscovice, I., Armstrong, P., Shortell, S., & Bennett, R. (1977). Health services research for decision-makers: the use of the Delphi technique to determine health priorities. *J. Health Polit. Policy Law*, 2(3), 388–410.
- Nord, E. (1992). Methods for quality adjustment of life years. Soc. Sci. Med., 34(5), 559–569.
- OCSTAT (1998). Etudes et documents No 24. La santé en chiffres: recueil de statistiques socio-sanitaires sur le canton de Genève.
- Rainhorn, J. D., Brudon-Jakobowicz, P., & Reich, M. R. (1994). Priorities for pharmaceutical policies in developing countries: results of a Delphi survey. *Bull. WHO*, 72(2), 257–264.
- Registre genevois des tumeurs. Le cancer à Genève: incidence, mortalité, survie, 1970–1994. Genève 1997.
- Robison, R. (1993). Cost-utility analysis. BMJ, 307, 859-862.
- Rudy, S. F. (1996). A review of Delphi surveys conducted to establish research priorities by specialty nursing organisations from 1985 to 1995. ORL Head Neck Nurs., 14(2), 16–24.
- Schopper, D., Ammon, C., & Rougemont, A. (1998). Planification qualitative du système de santé genevois: les domaines d'actions prioritiaires et la réforme du système de santé. Les cahiers de la santé No. 9.1. Département de l'action sociale et de la santé, Genève.
- Schopper, D., Pereira, J., Torres, A., Cuende, N., Alonso, M., Baylin, A., Ammon, C., & Rougemont, A. (2000). Estimating the burden of disease in one Swiss canton: what can DALYs tell us? International Journal of Epidemiology, in press.
- Smith, A., & Jacobson, B. (1990). The Nation's Health: a strategy for the 1990s: a report from an independent multidisciplinary committeee. London: King Edward's Hospital Fund for Londonn.