

# Obstacles to colorectal screening in general practice: a qualitative study of GPs and patients

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**Background.** The faecal occult blood test (FOBT) has proven efficiency at screening populations for an average risk of colorectal cancer. Mortality related to this cancer decreases by 15–18% among adults, 50–74 years old, tested every 2 years. A participation rate of at least 50% is desirable. This rate has not yet been reached in most French regions.

**Objective.** To explore the obstacles to mass colorectal screening in France.

**Method.** In 2009, five focus groups were conducted in different areas to explore physicians' obstacles to FOBT screening. The patients' obstacles were assessed in semi-structured interviews. A purposive sampling had been carried out for both GPs and patients. The focus groups were coded using Nvivo 8<sup>®</sup> software by three researchers; the interviews manually coded by two researchers.

**Results.** GPs reported insufficient training and some doubted the relevance of screening. They expressed concern of having insufficient time for the test during a consultation, as well as practical and administrative obstacles. Some GPs experienced difficulty persuading patients who had no signs of colorectal disease. Obstacles for patients were mainly difficulties in doing screening themselves and a perception of health care that didn't match with screening. Information and organization were also important points to improve. The screening process was considered complex both by GPs and by patients.

**Conclusions.** Numerous obstacles to colorectal screening, from both the physicians' and the patients' perspectives, were found. The major goal to improve mass screening may be to increase awareness and understanding of both physicians and patients regarding this process.

**Keywords.** Cancer, colorectal screening, family medicine, qualitative research.

## Introduction

Many studies in Europe have assessed the effectiveness of screening for colorectal cancer (CRC) using a guaiac faecal occult blood test (gFOBT). A single test can detect 20% of adenomas and 50% of neoplasms in people without a high risk of CRC. If performed every 2 years, for all adults 50–74 years old, it could reduce mortality rate from 15% to 18%, given a participation of at least 50% of this population.<sup>1–3</sup> France is a high-risk country for CRC: this neoplasm is the third most common cancer in France with nearly 38 250 new cases every year. It is also the second greatest cause of cancer mortality.<sup>4</sup> As in many European countries, a gFOBT is used for the screening.<sup>5</sup>

Mass screening began in pilot regions in France in 1992. It was then gradually extended to the whole country between 2002 and 2008.<sup>6</sup> Patients aged between 50 and 74 years receive an invitation, every 2 years, from a local screening organization (that is a part of the national health system), urging them to ask next time their GP for the test. During this consultation, GPs first identify patients with a high risk of CRC and exclude them from the mass screening. A colonoscopy is recommended for these at-risk patients.<sup>6,7</sup> GPs then deliver the FOBT and explain how to perform it. They also explain the meanings and consequences of the results. Within 3 months, patients must send the completed test to a central laboratory. If they don't, they receive a reminder.

Finally, another 3 months later, a test is directly sent to them. The participation rate is 85% when a GP delivers the test but is only 15% when it has been sent directly.<sup>8</sup>

Both GPs and patients receive the results. GPs refer patients who have a positive test to a gastroenterologist for a colonoscopy. In the past, 87% of patients with a positive test have undergone a colonoscopy.<sup>8</sup> In addition to this process, GPs could improve participation rate by identifying non-requesting patients. GPs can receive specific training to master these procedures. In addition, specific incentives are paid to GPs for each test carried out by a patient (~5 per test).

The desirable 50% patient participation has not yet been reached in France. At the present time, the mean participation rate is 42%. The overall participation rate in 2007–08, for 18 pilot districts, ranged from 28% to 54%. When compared to the previous period (2006–07), this rate had decreased in 13 districts.<sup>9</sup>

A previous French study explored the compliance determinants within a pilot program that encouraged screening for CRC.<sup>10</sup> This cross-sectional study showed that GPs played a key role. The main reasons for non-participation were because of other personal priorities (36%) or not being convinced of the efficacy of screening (26%). Women who had regular gynaecological follow-ups (pap smear and/or mammography) had higher rates of participation in colorectal screening.<sup>10</sup> To our knowledge, no published study has yet explored the detailed reasons for this behaviour. This study explored GPs' and patients' barriers to undergoing screening for CRC in France using a qualitative approach.

## Methods

Data were collected from GPs' focus groups (FGs) and from semi-structured interviews with patients visiting their doctors on unrelated issues.

Five FGs were organized. Purposive sampling involved looking for different screening experiences and took advantage of the progressive involvement of the various districts of France. One group of GPs worked in a pilot region and had delivered the test since 1992. The other GPs had been involved in the screening process for 1–4 years. A French-speaking qualitative medical research network (the GROUM.F) helped organize the FGs.

Eleven women and 28 men were purposefully recruited. Their mean age was 47 years (range: 27–67). GPs reported a large variance in experience in prescribing colorectal screening, from 0 to 200 FOBTs delivered every year (Table 1), thus allowing a range of opinions on the topic. The interview schedule was developed from the existing literature<sup>10</sup> and was modified after the first FG (Table 2). Two moderators (Isabelle Aubin-Auger and Patrick Imbert) and three observers (Alain Mercier, Frank Wilmart and Anne Marie Lehr Drylewicz) conducted the FGs. The number of FGs was determined by content saturation during the analysis.

### *Sampling strategy for the patients' interviews*

For the interviews, 24 patients were recruited from five Parisian or suburban practices. Their GPs had various opinions about screening, which ranged from thorough involvement to complete refusal. The interview was conducted in the GP's office (but not in the presence of the GP). Two different interviewers [(Isabelle Aubin-Auger and Alexandra Glédél (AG))] conducted the interviews using the same topic guide, but each of them interviewed different patients (Table 2). Eleven women and 13 men were recruited to have as much diversity as possible: selection criteria were age, gender, educational level, screening participation and opinion on the usefulness of the test. The sampling was completed during a continuous process of data collecting analysis to fill the missing categories.

TABLE 1 *Characteristics of the GPs*

Participants	All focus groups (October 2008 to December), N = 39	FG 1 Soissons, N = 10	FG 2 Ecouen, N = 7	FG3. Grenoble, N = 7	FG4. Rouen, N = 7	FG5. Tours, N = 8
Age mean (range)	47.4 (27–67)	27–62 43.9	29–58 45.1	33–54 46.8	50–67 58.2	27–57 44.8
Gender						
Men	28	7	4	6	5	6
Women	11	3	3	1	2	2
Practices						
Group	28	4	5 group practices/1 alone	All group practices	All group practices	5 group practices/2 alone
Single handed or solo	6	3				
Onset of the mass screening	1992–2008	2007	2008	1992	2007	2004–07
Low prescribers (<50 tests/year)	9	3	Not known	4	0	2
Medium prescribers (>100 tests to <200/year)	13	4	Not known	0	6	2
High prescribers (>200 tests/year)	1	0	Not known	1	0	0

TABLE 2 *Topic guide of GPs' focus groups and for interviews with patients*

GPs	Patients
1. What is your experience of screening for CRC?	1. What is your experience of CRC?
2. What do you know about FOBT?	2. What do you know about the screening?
3. How do you present FOBT to your patients?	3. What was your information source for the screening?
4. How do you organize screening for CRC in your daily practice?	4. What do you think of the way you were asked to do the screening?
5. What are your personal barriers towards this type of screening?	5. Have you already done the test?
6. What comments have patients made?	If yes: how was it?
7. Which possibilities/personal skills do you see/use to overcome these difficulties within your organization, as a doctor or with your patients?	If no: why not?

The mean patient age was 60 years (range: 50–74). The educational level of 10 patients was only to high school. Six patients had already done the test, nine were going to do it later and three were still hesitating. The other six patients did not want to do be screened. The patients' information on screening for CRC came from various sources: i.e. media, family, friends and doctors. Each patient gave his/her informed consent before participation.

The combination of purposeful sampling criteria used for both GPs and patients ensured a wide range of diversified opinions. Nevertheless, content saturation remained necessary and determined the number of interviews conducted.

### Analysis

All interviews and FGs were recorded, transcribed and kept anonymous. The GPs' data were coded independently by three researchers (IAA, AM and JPL), using Nvivo 8 software. The patients' interviews were manually coded independently by two researchers (IA and AG). The data were processed in different steps, using a grounded theory approach. A first phase of open coding was done without a predefined framework. Then, the different elements were shared and discussed with all the authors of this paper. Through an iterative process of constant comparison, an axial coding framework was developed. It started with the different levels of the 'obstacles' and 'facilitators' (patients, doctors, test, information given, organization and further diagnostic procedures, such as colonoscopy) and assessed levels of knowledge, skills and attitudes. In this way, 'selective' codes emerged and a comprehensive model of the screening process was developed.

## Results

### Patients

Numerous obstacles appeared regarding the patients' attitudes to screening. Some patients simply forgot to

perform the test; others lacked time or were indifferent. Some patients stressed that feeling their GP's involvement was important to them (Q1) (Table 3). Participants were afraid of having responsibility for the testing process and feared that a poor technical performance could induce a false positive or negative result (Q2).

Screening for cancer did not match some patients' perception of health care. These patients preferred to manage their health in a different way, such as eating healthy food or exercise (Q3).

Many patients had a poor knowledge about CRC screening, in particular those who were male, and being >60 years. Some thought that screening was only useful in the case of high-risk familial CRC (Q4).

### Patients' facilitators

Women who had already acquired a screening culture through mammography and cervical smears, and patients, whose relatives had already performed a gFOBT, were more likely to accept the test. The same was true for those who experienced a CRC in their family or friends (Q5). Patients with a higher education level were also more likely to become involved in the screening process.

### Doctors

The GPs' experience and level of involvement were the most important influencing factors for patients undergoing the screening–decision process. GPs who had a bad screening experience, such as a false negative result, were less likely to encourage patients to be screened (Q6).

The knowledge and attitudes of GPs were also important. Some GPs felt CRC screening was ineffective according to their knowledge of the medical literature and were, therefore, less motivated in the screening process (Q7).

Time was a major issue. Many GPs found it difficult to find time for the FOBT as well as all their other tasks (Q8). Finding time during their consultation was especially challenging during respiratory tract

TABLE 3 Responses by patients and doctors

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Patients:

Q1: 'I would have been more encouraged to do the screening if I have been talked to by my GP' (Interview 7)

Q2: 'If you don't take the samples properly ... you feel responsible' (Interview 19)

Q3: 'I take care of myself in a different way: I exercise and eat healthily' (Interview 14)

Q4: 'I was surprised to read that screening was beginning so young. I thought it was a cancer for elderly people' (Interview 6)

Q5: 'I was made aware of this problem by one of my relatives who had this cancer. It made me more attentive' (Interview 19)

Doctors:

Q6: 'When you had a painful experience with a patient who had a negative screening and a CRC removed a few months later ...' (FG Soissons)

Q7: 'I read that mass screening was not efficient' (FG Grenoble)

Q8: 'We need more time, GPs can't manage everything: contraception, smear test, bronchitis and life events ...' (FG Ecouen)

Q9: 'The problem is that patients come for many things; during the consultation, the number of complaints increases and, after all this, the screening letter pops up at the end of the consultation' (FG Grenoble)

Q10: 'People are not motivated with any kind of reason; you should spend much more time convincing, educating or persuading them' (FG Rouen)

Q11: 'For people who are not screened, it's not about seeking for care, but is all about money problems' (FG Tours)

Q12: 'The 73-year-old patient, with no risk factors, it's his first and last test: so you shouldn't forget about him because of medico-legal implications' (FG Rouen)

Q13: 'It depends on the patient: sometimes I ask them to come back for a specific appointment, but for those who don't attend frequently, even if I ask them to, they won't come back' (FG Soissons)

Q14: 'Delivering the test become easier after several experiences' (FG Grenoble)

Q15: 'Usually, I have to repeat the same explanations for having a screen' (FG Ecouen)

Q16: 'A refusal should lead to a new proposal, at a better moment on a more favourable day, using a new strategy. Then, it's not harassment' (FG Rouen)

Q17: 'The only criteria to convince me would be to find blood in my faeces' (Interview 14)

Q18: 'I will do the test, but confess it's enough to do my blood pressure and prostate' (Interview 21)

The test:

Q19: 'The first advantage is to avoid a colonoscopy' (Interview 17)

The organization:

Q20: 'My tendency is to offload my responsibility for the screening onto the local organization, and not to seek patients out by myself' (FG Tours)

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infection and influenza epidemics. It was difficult and quite annoying for GPs when the patient asked for the test at the end of the consultation, after having presented with many other health problems (Q9).

GPs felt the need to develop various skills to motivate their patients. Patients who came without a screening request were a challenge (Q10). They experienced difficulties with some patients: language and money problems could be barriers (Q11). Finally, some medico-legal aspects were taken into account (Q12).

### Doctors' facilitators

Choosing the best opportunity or the right time to introduce screening was a key issue for GPs. Some chose to anticipate the patient's query and then proposed the test, whereas others preferred to postpone the screening, provided that the patient was a regular attendant (Q13).

GPs with a long experience of mass screening seemed more convinced and were comfortable delivering the test (Q14). Some promoted the idea of a specific consultation on prevention (with a specific fee).

To increase their effectiveness, some GPs modified their practice's organization by making specific appointments or time slots for screening. Screening tests could also be synchronized, such as with mammography. Some GPs had developed their own routine of counselling (Q15).

Being flexible with a screening strategy allowed GPs to be more effective at approaching patients who initially refused the test (Q16).

### Patients' and GPs' agreements and discordances

Several patient barriers were correctly identified by the GPs but not all of them. GPs and patients agreed that lack of symptoms was one of the main reasons for doubting the test's usefulness (Q17). They also agreed that other disease conditions or familial priorities could be reasons for postponing the test (Q18).

GPs thought that one of the main obstacles for patients was their misunderstanding of the screening process, while patients mostly complained about lack of time. Many patients worried that they might be constipated when they had to do the test three times in a row, whereas GPs did not mention this potential problem. GPs were afraid of patients' reactions to a false negative, whereas no patient spoke of this fear.

### The test

GPs thought the manipulation of faeces was a major obstacle for most patients, but the patients said the whole process was a problem. They specifically mentioned problems with technical precautions, such as sampling 3 days in a row, preventing contamination with water or urine and sampling the correct amount.

Some patients showed a complete lack of knowledge about the test, even sometimes thinking that it was a colonoscopy. A problem also appeared regarding interpretation of the results: a positive test being automatically linked to cancer.

For patients, performing the test at home, and choosing the appropriate time, facilitated the process. Avoiding a colonoscopy and the test being free of charge were also strongly positive arguments (Q19).

### Information about the test

Some patients were not convinced by the explanatory letter and asked their GP for other reasons why

screening was necessary, such as epidemiological factors (e.g. screening efficiency).

The letter was not always clearly identified, and could be mistaken for advertising, though information on screening also came from the media or from the patient's friends and relatives. Media information was positively perceived, but most patients underlined its insufficiency. GPs also asked for more support from the media, frequently referring to the impact of the French alternative 'use of antibiotics' campaign.

Many patients underlined the importance of getting information from their current GP, sometimes regretting that their GP had not told them about the screening before.

#### Organization of the screening

Many physicians complained about the amount of forms to complete. They also had to stock the screening equipment. This work was seen as repetitive and time consuming, even though it facilitated the test's delivery. Storage of the tests was also frequently mentioned as an issue.

The patient had to pay the fee for the screening consultation and for the colonoscopy if necessary. This was also an obstacle for some GPs and patients.

Management of the screening process by a local agency seemed helpful but at the same time could cause a loss of involvement and a lowered feeling of responsibility by the GP (Q 20).

#### Colonoscopy

The GPs found it important to explain correctly the indications of the colonoscopy, whereas patients were afraid of the test's results. Patients were also frequently afraid of pain and the adverse effects of a possible colonoscopy, whereas physicians thought that patients were only worried about doing the screening.

## Discussion

This focus group and interview study have given an insight into the complex processes involved in the decision to undergo a colorectal screening. It is a merit of this study that it combines both patients' and doctors' knowledge and attitudes. All these factors, as well as information and organizational issues, can be integrated into a model, which outlines steps, each with their own 'obstacles' and 'facilitators' (Fig. 1).

#### The different models of decision-making processes

At the patient level, a decision to undergo screening depends on complex behavioural issues, including values, beliefs and attitudes. Among the different models previously described, the health belief model agrees with our data and includes severity, susceptibility, benefits, barriers and self-efficacy.<sup>11</sup>

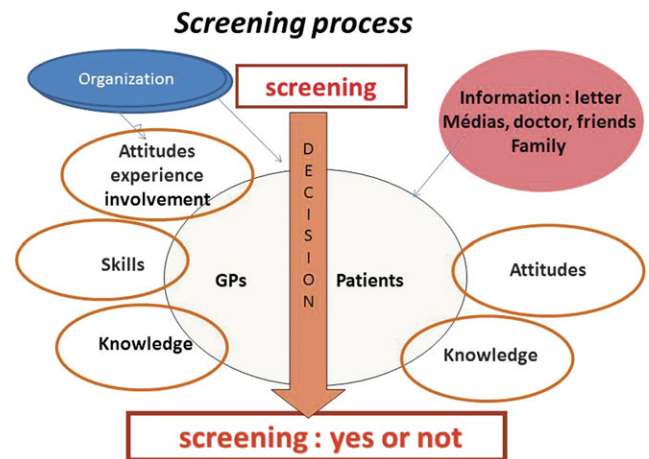


FIGURE 1 Screening process

#### Determinants of patient participation in screening

These determinants have been thoroughly described in many European countries with different health care systems and target populations.<sup>12</sup> In addition to previous findings, numerous incorrect ideas concerning screening and its objectives have also been identified as barriers, despite the range of information available (media, doctors, friends ...).

Other determinants found in this study are consistent with those in the literature. Greater participation by those with a higher educational level has been previously described in a French pilot project, particularly for male patients.<sup>13</sup>

Having a screening habit (mammography and cervical smear) was a positive factor for women.<sup>13</sup> Also consistent with previous studies, our data show that an absence of bowel problems and symptoms was a recurrent barrier for flexible sigmoidoscopy or FOBT screening. Perceived susceptibility to bowel cancer was also important in the decision-making process because patients often confounded cancer screening and diagnosis.<sup>14,15</sup> Lack of time to do the test was another reason for non-compliance, as has already been described in an Italian population for a comparative mass screening programme.<sup>16</sup>

Having visited a GP or a primary health care provider during the past year has been linked with higher participation in screening in several studies.<sup>17</sup> This relates to our findings on the significant effect of a GP's behaviour when delivering the test. A GP's involvement was described as a major issue in the interviews, which is a similar finding to that is found in previous studies with different health systems.<sup>18</sup>

#### GPs obstacles and difficulties

In addition to the existing literature, this study shows that GPs, like their patients, had difficulty in dealing with scientific arguments and in separating personal experience and public health data. They realized that

a false negative could lower their screening enthusiasm, and one successful screening could raise it. GPs were also more convinced about the importance of giving the test to patients if they got feedback on the overall screening results at their own practice.

In addition, much effort is needed to integrate prevention into daily practice. In this study, the GPs' experiences helped them eliminate several obstacles. Organizational issues, lack of time and inadequate and too many forms were identified. Solutions such as specific appointments or standardization of the explanations given to the patients were then proposed.

#### *Organizational factors*

Strategies that proved effective, like personalized and direct invitations to patients, and incentives for GPs are already being used in France.<sup>19</sup> However, other strategies have proven their effectiveness and some are already being implemented by GPs of our study. Scheduled appointments, timing of invitations for different screening procedures (e.g. pap smear, mammography, FOBT) reminders or prompts placed in patients' files and media-based campaigns should be developed at a national level and could be very helpful to GPs.<sup>19,20</sup> Other Countries like UK have chosen for a national organization of CRC screening, operating through a call and recall system, sending out test kits, analysing samples and dispatching results. Such a centralized system puts less pressure on the individual organizational capacities of GPs and eliminating some of the obstacles mentioned.<sup>21</sup>

#### *GPs and patients perceptions of each other*

GPs' perceptions about the obstacles patients perceived were also explored, and new issues were identified. GPs were not aware of some of these obstacles; they were more focused on medical barriers and less concerned about social or psychological factors. The obstacles perceived by GPs are described less in the literature: the lack of time and opportunity to discuss screening are shared by family doctors in other countries.<sup>18</sup> In this study, lack of time was equally shared by GPs and patients. Greater participation in screening occurs when patients report greater satisfaction and communication with their physician.<sup>21</sup> Lack of trust in doctors has been cited as a barrier by unscreened patients.<sup>22</sup>

#### *Limitations*

This study had some limitations. The patients' interviews were all conducted in Paris and the Parisian suburbs, where mass screening is just beginning. Therefore, most patients only had a low level of information and poor experience of the screening process, though this should improve in coming years. One interviewer had very little experience of the methodology which may have influenced the data gathering. Some of the data could have been more consistent.

It was not possible to explore the differences between GPs' experiences in more depth; thus, other studies need to focus on this important topic and explore it quantitatively.

#### *Implications for GP practice and future research*

Our GPs expressed difficulty in approaching patients who had not requested screening. These particular patients should be given specific attention. When they do consult, full involvement of the practitioner towards screening is needed, regardless of the initial motive for the consult.

Personal targeting and detailed information on the risks and benefits of screening would be useful for non-participant patients. However, this strategy is probably time consuming and will imply new criteria for incentives. For those patients who do not or only seldom consult with their GP, the mass media, health authorities and screening agencies should provide information and promote screening. However, the practitioner's involvement is essential if the patient is unsure or confused about screening.

There is an obvious need for better and specific training of GPs. However, health providers' education and training programmes have shown contradictory effects. Some interventions have significantly increased screening participation, whereas other interventions have been ineffective and expensive.<sup>21</sup> However, intensive patient education has been efficacious in improving compliance with FOBT,<sup>23</sup> but in France, there is a lack of health education structures and grants.

According to the literature, reminders to patient and GP are effective at increasing participation in CRC screening, and their use should be continued despite the big diversity of electronic medical record systems among French GPs.<sup>22</sup>

GPs' communication skills and the doctor-patient relationship are very important in this process. The wording that a doctor uses while delivering the test and the choice of when to suggest the screening should be explored. Even if the standardization of explanations to the patient appeared to be a facilitator.

The GP still needs to answer the patient's personal questions to avoid any misunderstanding.

Our patients requested specific information about CRC and the risks and benefits of screening. This has also been described in a qualitative study carried out in the UK.<sup>24</sup> These data could then be used during specific GPs' training to increase awareness of potential barriers and of patients' needs. Learning to allow time for patients to express their fears could be necessary.

## Conclusions

The CRC screening process may look quite simple, yet, it is exactly the opposite: delivering this test is a much more complex process than is usually thought. GPs and patients both experience several obstacles.

This study has shown that GPs experienced difficulties in dealing with scientific arguments and understanding the differences between personal experience and public health implications. Their responses were not dissimilar to the patients' perceptions. The patients' numerous false ideas about screening and its objectives were also identified as barriers, despite the various sources of information (media, doctors, friends ...). On top of this, a gap was identified between GPs and patients in their perceptions of each other's obstacles and health care conceptions.

It is important that the organizational strategies, some of which have been proved effective in different countries, should also be developed in France. In addition, targeting and personalized interventions are needed for late adopters to screening.

It is hoped that our study leads to improved FOBT rates, which will encourage involvement increase the experience of family physicians, remedy patients' incorrect ideas and increase understanding of each other's opinions. The promotion of shared decision making implies further research how to improve GPs' training and patients' education.

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## References

- Hardcastle J, Chamberlain J, Robinson M *et al.* Randomised controlled trial of faecal-occult -blood screening for colorectal cancer. *Lancet* 1996; **348**: 1472–7.
- Faivre J, Dancourt V, Lejeune C *et al.* Reduction in colorectal cancer mortality by faecal occult blood screening in a French controlled study. *Gastroenterology* 2004; **126**: 1674–80.
- Bretagne J-F, Manfredi S, Heresbach D. Dépistage de masse du cancer colorectal: présent et avenir. *Presse Méd* 2008; **36**: 1054–63.
- Viguier J. Colorectal cancer screening in France: progress report and prospects. *Hépatogastro* 2008; **15**: 8–13.
- Libion F, Doumont D. *Programme de dépistage du cancer colorectal: quelles recommandations pour quelle efficacité? Tour d'horizon de pays occidentaux.* UCL-RESOUnité d'Education pour la Santé. Louvain: Belgium, 2007; Réf: 07–46.
- L'arrêté du 29 septembre 2006 relatif aux programmes de dépistage des cancers et les annexes (cahiers des charges). <http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000460656&dateTexte> (accessed on 28 April 2011).
- Avis de la HAS sur la place des tests immunologiques de recherche de sang occulte dans les selles (iFOBT) dans le programme de dépistage organisé du cancer colorectal en France.* 2008. [http://www.has-sante.fr/portail/jcms/c\\_727080/place-des-tests-immunologiques-de-recherche-de-sang-occulte-dans-les-selles-ifobt-dans-le-programme-de-depistage-organise-du-cancer-colorectal-en-france](http://www.has-sante.fr/portail/jcms/c_727080/place-des-tests-immunologiques-de-recherche-de-sang-occulte-dans-les-selles-ifobt-dans-le-programme-de-depistage-organise-du-cancer-colorectal-en-france) (accessed on 28 April 2011).
- Viguier J. L'organisation du dépistage du cancer colorectal en France. *BEH* 2009; **2–3**: 19–22.
- Goulard H, Jezewski-Serra D, Duport N *et al.* Evaluation épidémiologique du dépistage organisé du cancer colorectal en France: résultats des programmes pilotes au-delà de la première campagne, 2010. [http://www.invs.sante.fr/publications/2010/plaquette\\_colorectal/index.html](http://www.invs.sante.fr/publications/2010/plaquette_colorectal/index.html) (accessed on 28 April 2011).
- Goulard H, Boussac-Zarebska M, Bloch J. Facteurs d'adhésion au dépistage organisé du cancer colorectal: étude Fado-colorectal, France, décembre 2006-avril 2007. *BEH* 2009; **2–3**: 25–9.
- Kiviniemi MT, Bennett A, Zaiter M, Marshall JR. Individual-level factors in colorectal cancer screening: a review of the literature on the relation of individual-level health behavior constructs and screening behavior. *Psychooncology* 2010 <http://www.ncbi.nlm.nih.gov/pubmed/20981673>(accessed on 13 March 2011).
- von Euler-Chelpin M, Brasso K, Lynge E. Determinants of participation in colorectal cancer screening with faecal occult blood testing. *J Public Health* 2010; **32**: 395–405.
- Serra D, Goulard H, Duport N, Bloch J. Pratique du test de détection de sang occulte dans les selles (Hémocult) dans la population française, enquête décennale Insee, France 2002-2003. *BEH* 2008; **1**: 1–4.
- McCaffery K, Borril J, Williamson S *et al.* Declining the offer of flexible sigmoidoscopy screening for bowel cancer: a qualitative investigation of the decision-making process. *Soc Sci Med* 2001; **53**: 679–91.
- Freins à la participation au dépistage du cancer colorectal: étude FADO. *INCA* 2008 Paris: MEDEC Congress.
- Giorgi Rossi P, Federici A, Bartolozzi B *et al.* Understanding non-compliance to colorectal cancer screening: a case control study, nested in a randomised trial. *BMC Public Health* 2005; **5**: 139.
- Senore C, Armaroli P, Silvani M *et al.* Comparing different strategies for colorectal cancer screening in Italy: predictors of patients' participation. *Am J Gastroenterol* 2010; **105**: 188–98.
- Levy BT, Nordin T, Sinift S *et al.* Why hasn't this patient been screened for colon cancer? An Iowa Research Network study. *J Am Board Fam Med* 2007; **20**: 458–68.
- Weller D, Patrick J, McIntosh HM, Dietrich AJ. Uptake in cancer screening programmes. *Lancet Oncol* 2009; **10**: 693–9.
- Anhang Price R, Zapka J, Edwards H, Taplin SH. Organizational factors and the cancer screening process. *J Natl Cancer Inst Monogr* 2010; **40**: 38–57.
- Power E, Miles A, Von Wagner C, Robb K, Wardle J. Uptake of colorectal cancer screening: system, provider and individual factors and strategies to improve participation. *Future Oncol* 2009; **5**: 1371–88.
- Lasser KE, Azyanian J, Fletcher R *et al.* Barriers to colorectal cancer screening in community health centers: a qualitative study. *BMC Fam Pract* 2008; **9**: 15.
- Stokamer C, Tenner C, Chaudhuri J, Vazquez E. Randomized controlled trial of the impact of intensive patient education on compliance with fecal occult blood testing. *J Gen Intern Med* 2005; **20**: 278–82.
- Jepson RG, Hewison J, Thompson A, Weller D. Patient perspectives on information and choice in cancer screening: a qualitative study in the UK. *Soc Sci Med* 2007; **65**: 890–9.