What's behind a guideline? Authority, competition and collaboration in the French oncology sector

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WHAT'S BEHIND A GUIDELINE?
AUTHORITY, COMPETITION AND COLLABORATION IN THE FRENCH ONCOLOGY SECTOR[1]

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Standards and, more broadly, organizational rules are a key topic in the organizational literature. Since these are meant to be tools to improve the efficiency of individual and collective contributions to the achievement of an organization's goals, organizational scholars have been interested for a long time in the study of the process of their development as well as of their actual impact (see for example Selznick, 1949; Gouldner, 1954). And indeed, analogies between some of their questionings and results of empirical studies – conducted in areas other than in the healthcare sector – and those of science studies on medical guidelines may be identified.

First, the results of organizational studies contradict some assumptions (or threats) on the power of standards or organizational norms to make organizations function uniformly and they even underline that their adaptation to the specificities of every organization is a pre-requisite for their successful diffusion (Segrestin, 1997; Brunsson & Jacobsson, 2000). This is compatible with well-known results about the incapacity of guidelines to hinder practice variations and about the necessity of local negotiations and adaptation processes to everyday care practices and institutionalized patterns (Timmermans & Berg, 1997; Zuiderent-Jerak, 2007). Second, organizational studies conclude that the introduction of standards does not always benefit the categories of actors who are in charge of the supervisory activities or, say, the regulators (Segrestin, 1996; Cochoy et al., 1998; Castel & Merle, 2002). This of course may echo back to empirical studies which underplay the risks of "deprofessionalization" through the development of medical standards (Berg et al., 2000; Timmermans & Kolker, 2004; Weisz, 2005). Third, organizational-oriented studies (Segrestin, 1997; Brunsson & Jacobsson, 2000) as well as STS studies (Berg, 1997; Bourret, 2005; Cambrosio et al., 2006) have analyzed standards as potentially useful coordinative devices.

However, beside these convergences, the organizational approach and some of its key concepts may enlighten aspects of the dynamics of medical guidelines, which to my knowledge have received only scant attention thus far. Drawing from the seminal works by Weber, organizational scholars showed that collective action is problematic, notably because actors pursue their own and often non-convergent interests, and that power is a given dynamic in relations between actors placed in a context of strategic interdependence (Emerson, 1962; Crozier, 1965; Crozier & Friedberg, 1980; Pfeffer & Salancik, 1978). This approach leads to an emphasis on the 'strategic interactions among a set of actors placed in a given field of action and mutually dependent for the solution of some common "problem"' (Crozier & Friedberg, 1995). Taking the French oncology sector as a case study, I will show that guidelines are used strategically by individual physicians and groups of physicians. This framework has thus two heuristic consequences. First, it reveals another force propelling the development of guidelines. While some studies made convincing arguments about the rise of guidelines as a result of analyses by some medical researchers that the practices of physicians hardly correspond to medical science (Berg, 1995; Daly, 1995) or as one of the manifestations

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of a new type of objectivity, 'regulatory objectivity' (Cambrosio et al., 2006), in the medical domain, the case of French oncology shows evidence that the proliferation of medical guidelines is also the result of an attempt by some physicians to improve their position relative to competing groups. Second, it points to other kinds of changes which guidelines may involve, beyond medical practices and coordination: the evolution of the structure of power relationships inside the medical profession. This point reinforces the argument made by science studies that, paradoxically, standardization does not eliminate the diversity of practices among physicians, even if it may sometimes transform them.

Material and Methods

This paper is based on fieldwork undertaken since 1999 which consists of several case studies aimed at understanding some developments of the organization of cancer care in France, and in particular the trend to rationalize medical work.

Four main types of healthcare organizations are in charge of cancer care in France. Created in the 1920s, French comprehensive cancer centers (Centres de Lutte Contre le Cancer; CLCCs) are 20 autonomous private hospitals publicly funded. Each one is directed by a physician. The CLCCs manage research activities and treat patients at the same time in their respective regions. The National Federation of CLCCs (FNCLCC), whose board is composed of the 20 directors, was created in 1964: conceived at first as an employers' association, its role has enlarged to comprise the facilitation of collaborative scientific projects between CLCCs.

Public teaching hospitals were created in 1958. The Hospital Reform Act was passed to modernize the French hospital system by linking regional public hospitals to university medical schools (see Jamous & Peloille, 1970). Public teaching hospitals have become the keystone of the French healthcare system, since they are expected to offer the best and most advanced treatments, to train physicians and to conduct medical research for all pathologies.

Last but not least, general hospitals and private clinics participate in cancer care by providing diagnostics and/or treatments in surgery, radiotherapy and/or chemotherapy.

Fieldwork was carried out in six different settings: at the national level, within the FNCLCC, which is the main producer of cancer guidelines in France, and in five French administrative regions.

- Fieldwork at the national level (1999-2002) focused on the genesis and the main goals assigned to the federal guidelines project. Data was obtained from daily informal exchanges and semi-directive interviews with the main federal actors in charge of the project and with directors. I also had access to working documents and the proceedings of meetings where the scope of the project was discussed, decided and (re)defined.
- At the regional level, interviews were conducted with representatives of regulatory bodies, directors of hospitals and physicians. Nearly 300 semi-directive interviews have been conducted so far (1999-2004). In a specific region, I was able for three years (2002-2004) to observe collective decisions-making processes about how guidelines were negotiated and validated. I had also the opportunity to observe the therapeutic decision-making processes (*N* 450) of four medical staffs. It was an opportunity to observe the manner in which guidelines were referred to when physicians had to define a therapeutic strategy for actual patients.

A non-unified process led by professional organizations

A professional initiative

Early attempts to institutionalize the production and use of guidelines in the French healthcare system can be placed at the turn of the 1990s. In 1987, a national agency was created to develop medical evaluation, but its actual results had been rather modest. The 1991 Health Law underlined once again the importance of evaluation (including the evaluation of medical practices) in the healthcare sector, but this did not lead to any significant change either. In fact, the first national standards procedures occurred in 1993. These norms, however, aimed at forbidding dangerous and costly practices rather than promoting the best ones (Kerleau, 1998). Furthermore, cancer care was not influenced by these public guidelines. The first French recommendation regarding cancer was published in 1993 by a medical society (the French Society of Mammography and Breast Pathology) and dealt with quality criteria in mass screening for breast cancer – i.e. a diagnostic procedure.

But from then on, cancer centers took the lead in developing cancer guidelines in France. In 1993, the board of the FNCLCC mandated some of their peers to launch a project aimed at 'harmonizing clinical practices between cancer centers, concerning diagnostic, classification, treatment and follow-up procedures' (Annual Report of the FNCLCC, 1994; author's translation). The selected methodology to elaborate these guidelines was initially a consensus conference. But a trip to the United States, where the project leaders visited some prestigious U.S. medical institutions, changed their mind: guidelines should rather be based on a critical review of medical literature in order to limit the impact of subjective opinions by the most reputed physicians and consequently to 'objectify' these guidelines. This project was thus explicitly conceived as a part of the emerging evidence-based medicine. From this point onwards, the scope of the project also changed its aim to not only defining the best practices for CLCCs but for the entire sector.

Methodologists were recruited by the Federation. They were public health physicians who were trained to review the literature and to evaluate whether the final guidelines were congruent with this literature or not. They were meant to argue against physicians if the latter were prone to develop guidelines according to their own experience or first results of the latest clinical trials rather than to a systematic review of the literature.

In addition to the methodologists, the project's leaders planned from the start to involve as many cancer center physicians as possible in the elaboration of guidelines. From their point of view, this strategy presented some assets: first (and quite obviously), these physicians (about 1000 physicians) represented a skilled labor force; secondly, their participation was conceived as a way to train them to learn and practice evidence-based medicine and to facilitate the acceptation and appropriation of guidelines. By the end of 1994, 300 cancer center physicians had already participated either in the task groups (which elaborated the clinical practice guidelines) or in the feedback process (consisting of comments on the first versions of the guidelines). Six hundred physicians had taken part in the project by 1998. The first documents, called 'Standards, Options and Recommendations' (SOR), were produced in 1995, consisting of long monographs (around 200 pages) and of summaries published by the main French cancer journal *Bulletin du cancer*[1].

Collaboration and competition

Beginning with the publication of the first SORs, the National Federation has involved more and more people working outside the CLCCs. At first, in 1995, an advisory board was created in addition to the executive committee, which was exclusively composed of 5 directors. In 1996, the executive committee welcomed one more CLCC physician, 2 representatives of medical societies (pediatric oncology and gynecologic oncology) and 4 physicians who practiced outside CLCC. The advisory board grew to 74 members. To finish, it was decided in 1997 to create a scientific board, exclusively composed of people working outside CLCC.

Until recently, more than half of physicians who have been involved in the elaboration of guidelines or in the feed-back process worked outside CLCC. Since 1998, the FNCLCC has published 29 clinical practice guidelines in collaboration with a medical society (see table 1).

Medical society	**Number of guidelines**
French Dermatology Society	2
French Society of Pediatric Oncology	6
French Federation of Digestive Oncology	2
French Society of Gynecologic Oncology	4
Society for the Study and the treatment of Pain	5
French Society of Pneumology	2
Study Group of Lymphomas	2
Others[2]	6
	29

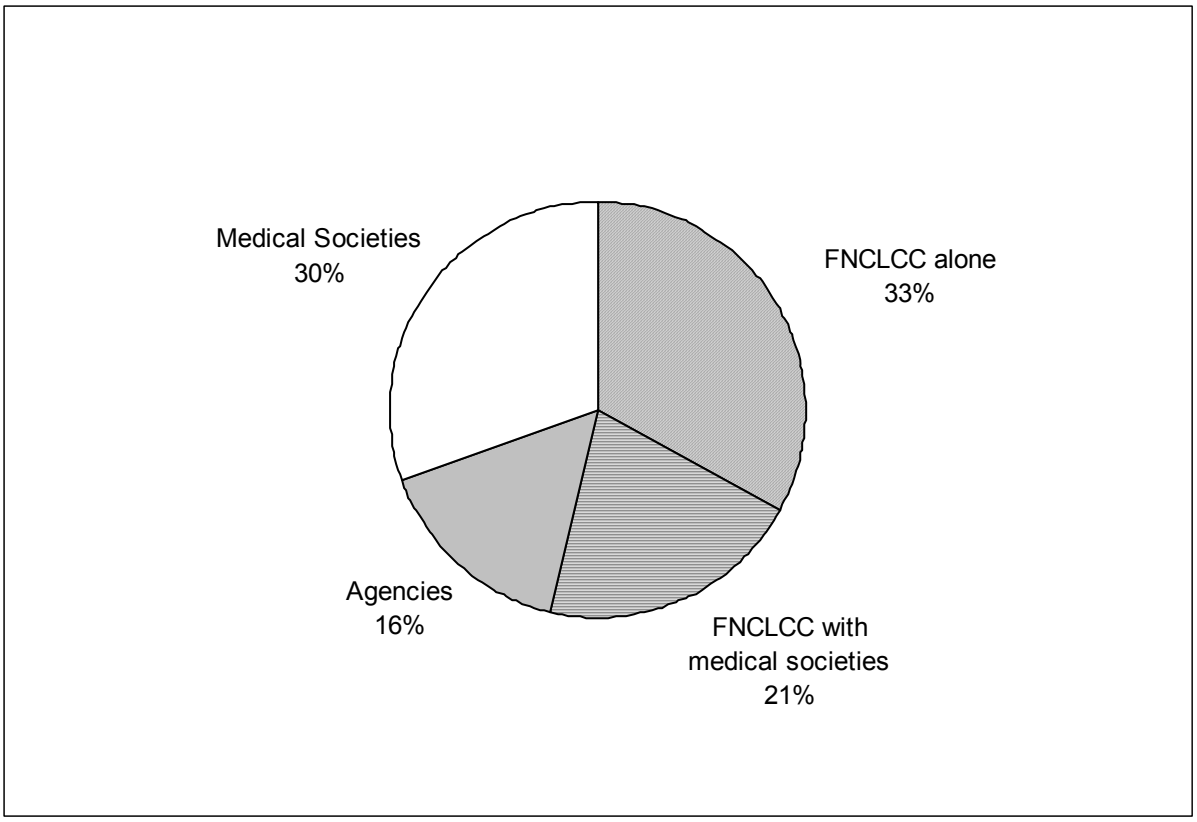
Table 1: Participation of medical societies in FNCLCC's guidelines

Despite this alliance with other actors or institutions, the FNCLCC still manages the process and keeps the label 'Standards, Options and Recommendations' and the (legal) responsibility for its guidelines.

It is responsible for 81 out of 148 French clinical practice guidelines (54%) which have been published so far (see graph 1). Furthermore, FNCLCC's guidelines have been published in the *British Journal of Cancer*, one of the most reputed journals in Europe. FNCLCC is the only French organization whose cancer guidelines are diffused outside France. The SORs are approved by the State and medical audits conducted by the Social Insurance used them as reference.

Other French producers of guidelines are the medical societies. They have published 46 sets of guidelines since 1997. Like the FNCLCC, their guidelines concern the management of specific cancers. Among them; the French Association of Urology (14 published guidelines - 9%), the French Society of Hematology (9 guidelines) and the French Federation of Digestive Oncology (6 guidelines) are the most productive. Other medical societies published only 1 guideline during this period.

Guidelines by the National Agency are of a different kind: they correspond either to recommendations for prevention and screening procedures, the evaluation of new techniques, or they answer precise questions (e.g. "Can initially non-resectable hepatic metastases be made resectable?").



Graph 1: French cancer guidelines' producers

Diversity of the implementation processes at the regional level

A recent study funded by the French National Cancer Institute confirmed the results of two previous surveys conducted by the FNCLCC: SOR guidelines are generally considered by physicians as the most reliable ones in oncology. However, among these physicians, those who worked in CLCCs and physicians who devoted more than half of their activity to cancer patients, were the ones who declared more familiarity with them and utilized them more frequently.

Nonetheless, they are not considered as tools for everyday practice, except by a few practitioners who work inside teaching hospitals or cancer centers. Cancer centers thus created voluntary and cooperative networks for the elaboration and implementation of regional treatment protocols adapted to the characteristics and resources of the local healthcare system in order to be relevant and handy for everyday practice. This entails initiating and monitoring the discussion process at the regional level through which federal review monographs are in fact transformed into decision-making algorithms and into specific recommendations of one among several scientifically appropriate treatments. In some regions, the cancer center created a network without involving the regional teaching hospital. As a result, these teaching hospitals organized opposing networks.

Besides these regional networks, some physicians who were specialized in the treatment of specific organs – and mainly urologists, gastroenterologists, visceral surgeon, lung specialists, and hematologists – declared that they used the guidelines of medical societies rather than the SORs.

Development of guidelines as a collective strategy for intra-professional legitimacy

The specific dynamics of this movement – its initial impulse and the diversity of involved organizations at the national and regional levels – is tributary to the specific organization of cancer care in France. In particular, the rivalry and competition between specialties (pathology-centered specialists vs. organ-centered specialists) and between hospitals influenced this development.

The reinstatement of cancer centers as dominant actors through the development of guidelines

The traditional collective identity of French Cancer Centers and the evolution of their position in the French oncology sector explain why their physicians first became involved in the development and diffusion of guidelines. Indeed, these guidelines have been considered as a tool to reinstate themselves as scientific leaders in the sector and as partners for other physicians. This project was the key-stone of an ambitious reform program conducted by the FNCLCC. This program, which consisted also of the development of research activities, an accreditation program and the negotiation of new professional statutes for employees, was a direct response to increasing competition for the CLCCs and to critiques by other stakeholders of the sector (Castel & Friedberg, 2004).
In 1993, the instigator of the project was a pediatric oncologist, the director of a cancer center located in a very competitive region. His motives to develop guidelines were fourfold. First, the implementation of state-of-the-art practices in every hospital was a goal that he shared with his American peers (see Daly, 2005; Berg, 1995) and he could have been qualified, using Marks' expression, as a 'therapeutic reformer' (Marks, 1997). Indeed, he could not abide by the heterogeneity among treatments which were prescribed by physicians in his center, since they could imply the unequal treatment of patients. He was all the more sensitive to this issue in that the international community of pediatric oncologists had already been involved for many years in the question of the harmonization of their practices (Castel & Dalgalarrondo, 2005). Secondly, and furthermore, he analyzed that this heterogeneity was an obstacle to the regional legitimacy of his center. Indeed, because of this heterogeneity, physicians of other hospitals could put in doubt the quality of the advice that CLCC physicians offered them.

> There have been two initial reasons to launch this project. The first one is an inner one. We, as pediatric oncologists, treated lymphoma with a specific protocol and we saved 75% of the children. In another service, physicians treated adults with lymphoma with another protocol and saved only 25% of patients. Thus, the poor patient was 25% likely to survive, if he was over 16, whereas children under 16 were 75% likely to survive. And I did not judge it justifiable that patients be treated differently from one service to another. (...) The second reason is an anecdote. Dr X [a head of service in a big public general hospital] called me once and told me: 'I called your center to ask if it was possible to prescribe birth-control pills to a woman with breast cancer and I had three different answers.' Then, he told me: 'As long as you won't be able to agree with each other – or at least to argue why you disagree – we will not consider you as the leading hospital.' (Interview with the director of the cancer center, 1999; author's translation)

Thirdly, this director hoped the development of guidelines could be used to reshape (and improve) the relationships between his center and other general hospitals. His center should appear to other hospitals as a facilitator to treat the more frequent cancers and as a scientific reference which could help them to treat more complex and rare cancers or to which they could even refer patients for enrolling into clinical trials or for specific care.

> Physicians who work in other hospitals want us to let them develop their business. (…) Our answer is the thesaurus [i.e. the treatments protocols], outside consultations (…); it is an openness which leads us to advise a treatment for patients we do not necessarily see. It is an evolution you know well. (Discourse in front of the medical Board of the cancer center, 1993; author's translation)

Last but not least, he expressed in the same discourse that guidelines might be an argument to convince regulatory bodies to pay for new, expensive treatments[3].
Other directors were soon convinced of the strategic opportunities of this project for CLCCs. At the national level, they were well aware that it might contribute to re-establishing their legitimacy towards the public authorities and the French medical community. Indeed, at a time when concern for quality in the healthcare system was rising, CLCCs would be the hospitals who set the example.

> At the time [i.e. in 1993, at the beginning of the project], the Social Security agency was about to elaborate guidelines… Then, what was our usefulness if, as oncologists, we were not able to produce cancer guidelines? We thus decided together: 'We will produce guidelines by ourselves and respect them, before we are forced to do so by someone else.' (…) Furthermore, our oncologists used to say that they were the best ones. They had to prove it [in producing guidelines]! (Interview with a director, 2002; author's translation)

The SORs were preeminently seen by the directors as a way to set the rules in the oncology sector. Indeed, teaching hospitals were particularly threatening to them. From the 1980s on, teaching hospitals began to claim that cancer centers were not useful anymore since they had the same missions in the field of cancer-care. The former further argued that their physicians, specialized in organ treatments and at the forefront of clinical research, were more qualified to treat (and cure) cancer and to teach other physicians the best way to do it. In this context of struggle for legitimacy, guidelines were conceived by directors as a way to re-affirm the usefulness of CLCCs along-side these teaching hospitals. But they were also a tool to defend a medical approach and the organization of cancer care which CLCCs have developed (Pinell, 2002) and are very proud of: an organization based on the participation of every medical specialist in the decision-making process related to a patient's treatment strategy – also called a multidisciplinary approach – whereas teaching hospitals tended to promote another model, in which mastership of the initial decision is given to the organ specialist (and mainly to the surgeon). It therefore comes as no surprise that one of the first guidelines elaborated by the FNCLCC was entitled 'Standards, Options and Recommendations concerning good practices in the multidisciplinary organization of cancer care' (Chardot et al., 1995).
At the regional level, the directors' expectations were congruent with those of the project leader's: they intended to use the SORs to restore the leadership of their center and to improve its relationships with some general (private and public) hospitals. But they also had specific strategic uses of the SORs depending on the local organizational context. For instance, for some directors who had decided to enhance collaboration with the regional teaching hospital, the SORs helped to initiate a dialogue between their physicians and those who worked in the teaching hospital. In one region, the elaboration of a common language and common therapeutic attitudes subsequently allowed a new division of cancer care between these two hospitals to be established. In other regions, the directors hoped the diffusion of guidelines would facilitate the treatment of common cancers by general hospitals, allowing CLCC physicians to concentrate upon complex tasks. On the contrary, in some regions, the SORs were a tool to restrict the entrance of newcomers to the sector.

> When the organization of cancer care was discussed at the regional level [with regulatory bodies and hospital representatives] two years ago, we had a clear idea about which hospitals we wanted to work with and with which we did not. We came to the discussions with the SORs, saying: 'These are the best practices in oncology and we cannot sell off oncology. Thus, only hospitals which are able to comply with the SORs may care for cancer patients.' If you refer to some rules which you do not have written down and which describe what has to be done, it defuses a bomb. Then, we succeeded in selling the ideas of a multidisciplinary organization of cancer care and a unique regional medical record… It is not all achieved, but… People have made headway. We may notice that some hospitals have given up the idea of developing oncology, others have grown bigger. (Interview with a vice-director of a CLCC, 2001; author's translation)

Whatever the different uses of the SORs, they all have in common that these guidelines represented for CLCC directors a tool to reorganizing cancer care in their regions. This was a major motive for adopting the project.

Counter-reactions

As we noted above, public authorities delegated cancer guidelines to the FNCLCC and approved the SORs, thus reinstating CLCCs as legitimate organizations in the French oncology sector. Then, medical societies stepped in and became involved in the development of cancer guidelines. Some of them collaborated with the FNCLCC and others produced their own guidelines. These different attitudes were partially linked with the specific relationships that oncologists had developed previously with the different organ specialties.

The medical societies which have been the most prolific producers of guidelines are dominated by organ specialists who traditionally intend to master the care of the corresponding cancers at the expense of oncologists, considering the latter as merely "sub-contractors". Indeed, urologists, gastroenterologists and hematologists perceived oncologists as competitors. For instance, urologists usually consider surgery to be the best treatment against localized and locally advanced prostate cancers, even if some studies concluded that surgery and radiotherapy were equivalent treatments in terms of overall survival. For them, radiotherapy must remain only an option when surgery is not possible. The respective place of these two treatments for prostate cancers remains a controversial issue (Hakenberg et al., 2006). In the same vein, gastroenterologists consider themselves to be more qualified than oncologists to prescribe drugs for digestive cancers since they better understand the working of the corresponding organs and thus are able to adapt protocols to the organs' reactions (and weaknesses). However, even if they more or less openly criticize the FNCLCC for trying to lead the development of guidelines at the national level, all these societies cannot help making reference to the SORs, thus attesting to their importance in the sector.

> It is true that there have been conflicts between oncologists and urologists. Things are changing leading to fewer conflicts. But this remains very much "physician-dependent". (…) But there is still a problem: the FNCLCC still tends to think that cancer centers embody cancer care. We answer that they are only one actor amongst others. (…) The methodology that the French Association of Urology is using to produce guidelines is becoming more and more credible. We are trying to elaborate them according to the level of evidence, like the SORs. (Interview with a member of the board of the French Association of Urology, 2003; author's translation)

On the contrary, the first medical societies which accepted to participate in the SOR project happened to be the ones which were composed either of organ specialists who were used to working with oncologists and/or of many oncologists. In particular, since the 1970s, the

French Society of Pediatric Oncology has been composed of physicians of cancer centers and teaching hospitals who have developed common research and treatment protocols (Castel & Dalgalarrondo, 2005). Inside the French Society of Gynecologic Oncology, gynecologists and oncologists have collaborated for a long time, since breast cancer is one of the first cancers, of which treatment has consisted in a multidisciplinary approach – combining surgery, radiotherapy and medical treatment – (Pickstone, 2007).
However, even if the organization of cancer care influences the development and implementation of guidelines, it does not determine it. Specialists, once competitors, may learn how to work together around the development of guidelines. For instance, the French Society of Dermatology finally accepted to co-sign two guidelines with the FNCLCC, although they had been reluctant to for a long time. The French Federation of Digestive Oncology also joined the SOR project three years ago, after it had published 6 guidelines by itself. One hypothesis for this evolution relies on the institutionalization of the SOR project in the French oncology sector, so that it is difficult for an (isolated) medical society to continue this activity in parallel. Another hypothesis is the regulatory capacity of evidence-based medicine, entailing an inherent reflexivity among participants and resulting in the production of conventions and concerted programs of action (Cambrosio et al., 2006).

Individual authority and guidelines

In the French oncology sector, physicians tend to hold a good opinion of guidelines because of the professional issues these guidelines have addressed (Castel & Merle, 2002). On the one hand, they are generally considered as a tool to lessen medical uncertainty, since they may attenuate the difficulty to make a therapeutic decision in a context characterized by an increasing number of randomized controlled trials and since an error may have lethal consequences. On the other hand, they limit the risk of a patient's and a manager's mistrust towards the quality of medical practices. Furthermore, the fact that these guidelines are exclusively elaborated by professionals (including those which have been approved by public authorities) and that they are not used by public authorities to punish physicians, facilitate this acceptation. But I will argue in this section that participation in the development and implementation of guidelines may also be the result of an individual strategy by physicians, in order to increase their specialization in cancer care and their visibility in the medical community, and thus, to have greater control of patients' trajectories in Strauss' sense (1985). Intra-professional legitimacy is also at stake for the individual practitioner, which will partially explain why some become involved in the elaboration and implementation of guidelines, and others do not.

The interests of cancer center physicians in the SOR project

The SOR project would probably have failed if the physicians who directed CLCCs had not convinced "rank-and-file" oncologists to participate. As we saw above, nearly two thirds of the medical community enrolled within a few years. The CLCC physicians we interviewed between 1999 and 2002 criticized neither the developmental process of the SORs nor the quality of the final documents. To the contrary, they generally expressed pride in their participation. For instance, in 1995, seven inter-CLCC scientific groups, among the most significant ones (gynecologic tumors, breast cancers, digestive cancers, genetic oncology, infectious diseases in oncology, statistics, radiology), stated their participation in the SORs prominently in their annual report.
Three reasons may explain this success. The first is an institutional one. On the one hand, CLCC physicians were aware that the oncology sector was becoming increasingly

competitive and, thus, increasingly threatening for them. They believed that the SORs could contribute to re-establishing cancer centers as leaders in the French oncology sector.

> The SORs are a wonderful tool and only CLCCs are able to produce it – thanks to our multidisciplinary culture. We receive great credibility when we publish a SOR. (…) When we write such texts, we become incontestable in the sector. (Interview with a radiotherapist, 2000; author's translation)

On the other hand, since clinical research is tightly linked with the birth of oncology as a medical specialty (Cambrosio, 2005; Pickstone, 2007), CLCC physicians were more prone to participate in a project that claimed its insertion in the Evidence-Based Medicine movement. Moreover, the traditional multidisciplinary organization inside CLCCs has facilitated the acceptation and the organization of this project by their physicians. They were more likely to accept a formalized (collective and multidisciplinary) regulation of their practices.

> The guidelines are part of a global evolution, but this does not represent a revolution for us. For other hospitals, it may be a cultural revolution (…): the systematic reference to a document for therapeutic decision-making and the multidisciplinary organization of care are not innate; it requires a specific organization and structure. (Interview with a CLCC surgeon, 2002; author's translation)

The second reason for this success related to the management of this project, which was not intended to be a top-down project. On the one hand, the whole medical community was invited to get involved. It was not limited to opinion leaders. Furthermore, every guideline had to be validated by every CLCC medical committee (which is composed of all physicians who work inside the center) before it was published. On the other hand, reformers presented this project to the physicians as a way to improve their practices rather than as a coercive one to control them. Medical evaluations were intended to evaluate the conformity of medical practices with the SORs but no sanction was considered.

Thirdly, physicians consider that the SORs help them in their daily practice. On the one hand, their involvement in the development and dissemination process contributes to their hyper specialization (and authority) on certain cancers. Indeed, belonging to a national task force which is responsible for a SOR enhances or consolidates a physician's reputation in the treatment of the corresponding cancer (similar to publishing the results of randomized clinical trials in leading medical journals). In the same vein, the management of a task force at the regional level in order to adapt and implement the SORs contributes to the regional authority of this physician: not only can this physician make clear during discussions that he is well-versed in the literature and that he is aware of the latest clinical trials but, at the same time, he demonstrates to his regional colleagues that he is inclined to help them – and so exhibiting a kind of altruism.

> [A medical leader] is someone who works a lot and who works well. We may evaluate this through his care for the patients we refer to him. But he is also someone who participates in task groups and in protocols. And he is someone who knows how to share his knowledge. The number of publications is one criterion but it is not the only one. What counts more is showing one's intention of working (…) and on the way one is trying to be acknowledged as a leader. There is also the human touch. (Interview with an oncologist in a general hospital, 2003; author's translation)

On the other hand, due to a significant increase in the number of articles related to randomized clinical trials at the turn of the 1990s, it was difficult even for the CLCC physicians to be well informed on current treatments for every cancer. Most of them became

specialized in certain kinds of cancers. Thus, the SORs were consulted as a resource to find scientific information when it came to taking care of patients who suffered from cancers of which they were less familiar. In particular, cancer center physicians were interested in the SORs for their activity of outside counseling. Indeed, when they had to give advice to peers on cancers in which they are not specialized, the SORs constituted a precious help.

> I am an oncologist, but I do not know 10% of all the decisions to take in oncology. We are hyper-specialized. For instance, I am specialized in prostate cancer. But when it departs from your hyper-specialization, it becomes very complicated. Guidelines will be referred to by physicians when the case departs from their specialty. (Interview with a radiotherapist, 2000; author's translation)

Opportunist uses of guidelines

Other physicians may also perceive the strategic interest of their participation in the regional implementation process. Organ specialists who want to specialize in oncology or oncologists who work in general public or private hospitals and who have thus to be trusted by surgeons may choose to participate in the regional implementation of guidelines in order to acquire local legitimacy. Indeed, physicians have to convince their colleagues who may refer patients to them, that they are competent and, in particular, that they are able to prescribe the correct treatments. There is no available study which compares overall survival rates among different hospitals in France. A doctor's reputation rests therefore on other (social) mechanisms. The participation in clinical research which may allow a physician to acquire a distinctive reputation through publications or communications is a frequently used strategy. But one may analyze the current development of oncology networks in France, which generally elaborate collegial guidelines and promote the creation of multidisciplinary (and sometimes multi-hospitals) medical staffs in charge of making therapeutic decisions, as another medical response to restore medical authority. Physicians participate in the regional elaboration of guidelines or in multidisciplinary medical staffs to increase their knowledge, to appear competent when talking with their peers and to acquire a kind of quality distinction.
A regional task group aiming at implementing the SORs allows physicians who work in general healthcare organizations to have privileged and personal access to the knowledge and experience of their academic[4] counterparts. Guidelines facilitate the sharing of specialized knowledge, so that "rank-and-file physicians" depend less on the personal advice of their illustrious colleagues for the most frequent types of cancers. We may then apply Segrestin's analysis of ISO norms (1996) to guidelines: indeed, the 'logic' of both kinds of norms consists of sharing knowledge which was only mastered by experts before.

> If someone wants to practice traditional surgery, [the work on guidelines] is not that important. But if someone wants to specialize in oncology, then… It is changing so fast! Nobody is able to attend all scientific meetings; nobody is able to read the whole published literature. (…) If someone wants to "hyperspecialize", he has to know up-to-date treatments and nobody can do it on their own. (Interview with a private surgeon, 2003; author's translation)

This participation is a resource for physicians in their efforts to gain greater control over the management of patient "trajectories" in both Strauss' senses (Strauss et al., 1985): trajectory of illness and organization of medical work. This allows them to intervene more in the work of their colleagues.
First, they may acquire a greater legitimacy over physicians who have not specialized in oncology. Some find this label useful in convincing their patients and peers (general

practitioners, surgeons, diagnostic physicians…), who may assign patients to them, that they are as competent as, say, academic physicians. Their authority relies then more on local, collective norms rather than on their individual competence. Indeed, some of their non-specialized counterparts reported more trust (and thus refer more frequently) to those of their peers who participated in this collective process. We may thus understand why only oncologists and organ specialists who want to specialize in oncology participate in such networks. On the opposite, organ specialists (gastroenterologists, surgeons, etc.) for whom cancer patients do not represent a major part of their activity do not get involved in networks.

> The network is useful to attest my competencies. I decided to adhere to it as soon as it began. (…) Surgeons, when they send me a patient, know that some regional standards exist. Thus, I am writing in the medical record: 'standard of [the regional network]'. It legitimizes my decision. They know that every patient is treated in the same way. (Interview with a medical oncologist, 2003; author's translation)

Secondly, during task group discussions, they have the opportunity to hinder the academic physicians' monopoly over cancer care. The first social mechanism is negotiation, as Timmermans and Berg showed before (2003): they negotiate with academic physicians so that guidelines do not stipulate treatments that are too complex and that cannot be prescribed by general facilities (e.g. clinical trials, intensive chemotherapies, up-to-date diagnostic exams…). The second mechanism is trust: during discussions, they get a chance to convince their (specialized) colleagues that they are competent and may even demonstrate some expertise. Indeed, some academic physicians that were interviewed recognized that before this process, they tended to mistrust their colleagues who worked in general healthcare organizations, believing that they were not competent enough. Nowadays, they have changed their mind. As a result, academic physicians are more prone to let these physicians take care of patients who suffer "standard" cancers (such as colon cancer, breast cancer…) or even to re-assign those patients to them.

> This allowed me to meet some physicians who worked in general hospitals and whom I had not known before. It helped me to avoid certain prejudices. In the medical world, it is terrible how fast we label people! 'The private sector does not think anything but money!' 'The public sector does not do anything at all!' But, when we came to know each other, we realized that people share a common interest: the patient! And we also realized that everybody worked hard. (Interview with an academic lung specialist, responsible for a regional task group, 2003; author's translation)

Last but not least, guidelines constitute a robust argument for physicians, so that they may try to restrict the autonomy of their peers and to influence the management of patients. For instance, during multidisciplinary staff meetings, physicians may argue that a therapeutic decision is not 'evidence-based' and thus try to change it, even if this patient is not under their responsibility. Physicians who want to propose a "non-conform" treatment have to justify it. Another example relied in the changing relationships between surgeons and radiotherapists in a region where protocols had been broadly diffused. Surgeons grumbled about the growing interference of radiotherapists in their autonomy. Indeed, radiotherapists dared to ask them to perform a new operation when surgical margins were insufficient related to the diffused guidelines. A last frequent example relied in the relationships between diagnostic specialists and clinicians: the latter were more prone to use guidelines to frame their colleagues' activity in terms of delay and quality of their exams reports.

> [The regional protocols] make clear that I am not maniac or obsessional when I am asking them for some quality criteria: these criteria are written in the guidelines! For example, I must have exams' results in pathology or in radiology fifteen days later. As for pathologists, when we ask them to write some details, it is not because we are maniacs, it is only because it has to be that way. (Interview with a private surgeon, 2003; author's translation)

Of course, this does not mean that physicians are compelled to obey their colleagues if they rely on guidelines. Other types of authority still exist in the sector. For example, physicians may invoke the uniqueness of every therapeutic relationship to adapt a protocol. And authority of academic physicians may still rely on charisma or personal prestige. Indeed, some academic physicians refuse to participate in networks which implement guidelines. They would rather organize frequent meetings when they give personal advice on specific cases which are brought by non-specialized physicians. Nonetheless, our observations made clear that rational-legal authority (Weber, 1922) is becoming dominant in the French oncology sector. Physicians who are able to justify therapeutic decisions and advice thanks to these guidelines and, more broadly, to the medical literature, are becoming more and more legitimate among their peers. Furthermore, guidelines facilitate an increasing 'lateral control regime' (Lazega, 2000) among physicians. Contrary to previous periods when analysts noticed that physicians had limited opportunities to meet and to evaluate each other (Freidson & Rhea, 1963; 1965), guidelines represent a device which increases interdependency among physicians and a reference frame to judge one's colleagues.

Conclusion

Medical standardization may not only alter relationship dynamics between physicians and non-physicians (specifically patients, hospital managers and regulatory bodies), but it may also alter relationships between physicians themselves. In line with Timmermans and Berg (2003) and Cambrosio and colleagues (2006), this case study shows that standardization implies an increase of relationships among physicians (through task groups, for instance) and the development of shared conventions, which facilitate these inter-personal exchanges. As it is in the industrial sector (Segrestin, 1997; Cochoy et al., 1998; Brunsson & Jacobsson, 2000), standardization in the medical field allows for an improvement of relationships between actors through mechanisms of collective learning.

The study of standardization in the sector of French oncology shows also that it is heuristic to take political considerations into account when studying the development of standardized guidelines. This conclusion appears to be congruent with some of those of Timmermans and Berg (2003) who proposed "a study of the politics of standardization in practice". However, their conception of power differs from the one used in this paper. Although they did not explicitly set forth a definition of power, their analyzes and reference to *The Birth of the Clinic* by Foucault (1973) underlay a substantive and abstract conception of power. In the cases they studied, standards either embodied institutionalized power relationships (which impeded the establishment of standards, like in the "CPR" case) or they changed the dynamics of these relationships; however, the authors did not analyze why either happened as it did.

By contrast, the sociology of organization, to which I refer, considers an interactive and strategic concept of power, which is a basic ingredient of exchange relations between actors placed in a context of strategic interdependence (Crozier, 1965; Chazel, 1992; Boudon & Bourricaud, 1982). Power can be conceptualized as the unequal and negotiated exchange of capacities of action in which every actor looks to simultaneously constrain other members of an organization in order to satisfy expectations and avoid being constrained by other members (Crozier & Friedberg, 1980; Friedberg, 1997). Strategy and resources are, therefore, two key

ideas related to this concept of power. In the case of French oncology, I established that standards could indeed be strategic resources used by professional actors at the expense of other professionals to improve their position in regards to the following two issues: 1) maintaining a sufficient volume of activity and 2) increasing control over therapeutic decisions. CLCCs and cancer center physicians were the ones who benefited the most from these standards. But, in this theoretical perspective, even actors placed in a favorable situation could not eliminate the capacity of other actors to resist. This explains why negotiations took place at every level of analysis: national, regional and local. The perspective of the sociology of organization, which places concrete exchange and bargaining relations at the core of its analysis and in which social control is continually challenged and (re)produced, helps to identify other reasons why, as well-illustrated by STS studies (Timmermans & Berg, 1997; Zuiderent-Jerak, 2007), standardization does not prevent local specificities and variations but may even enhance them.

Notes

[1] These guidelines are called 'Standards, Options and Recommendations' (SOR) since they are classified in three categories. A clinical attitude is called a 'Standard' when there is unanimity concerning its benefits, its inappropriateness or its potential danger. It is called an 'Option' when a majority of physicians agrees with the benefits, inappropriateness or dangers of a specific attitude. 'Recommendations' represent a choice by experts among different options. Each category is then explicated by a level of evidence, depending on the available scientific.

[2] This corresponds to medical societies who participated in only one guideline: French Sarcoma Group, French-speaking Society of Enteral Nutrition, French Society of Pathology, French Association of Urology, French-speaking Society of Brain-surgery, French Society of Nuclear Medicine.

[3] In the same vein, Berg and colleagues (2000) showed that guidelines had been a tool for insurance physicians in the Netherlands to restore the legitimacy of their practices, which were criticized by non-physicians.

[4] By "academic physician", I mean physicians who work in hospitals whose missions are research and teaching, and thus teaching hospital and cancer center physicians.

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