

Hospital performance: Competing or shared values?

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Abstract

Objective: To find out which are the emerging views on hospital performance and to analyze how these views vary among hospital stakeholders.

Methods: *Study setting:* Three hospital stakeholder groups (physicians, caregivers, and administrative staff) in a large Paris teaching hospital.

Study design: A case study combining a qualitative (interviews of 80 key hospital stakeholders and a survey of hospital staff), and a quantitative analysis (a questionnaire composed of 4 theoretical dimensions, 13 sub-dimensions, 66 items) with triangulation of the results.

Results: Hospital stakeholders assign greatest importance to the human relations dimension, i.e., organizational climate (professional and public service values) and quality of work life. These values attract a high degree of consensus among stakeholders (no statistical difference between physicians, caregivers and administrative staff).

Conclusions: Our findings challenge the mainstream view that competing values underlie hospital performance. Currently, views are to some extent shared among different stakeholder groups. A reason for this could be the need to form a more united front in the face of recent reforms. This common emphasis on professional and public service values could be the basis for formulating management priorities in teaching hospitals in order to improve performance.

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1. Introduction

In just a few years, hospital performance has become a matter of popular concern within the healthcare

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industry. Tighter budgets and widespread restructuring have led to higher expectations from many stakeholders such as patients, the public, health professionals and payers. The reaction in most developed countries has been a redefinition of performance toward a more market-oriented view of clinical issues [1,2]. Performance criteria have become more tangible and restrictive. The hospital of today has to fulfill several objectives. It has to achieve high clinical performance in a technology-driven world, to increase productivity within tight budgets under close scrutiny, and to continue recruiting health professionals and attracting patients. It has also to become more flexible, for instance by promoting ambulatory care through inter-organizational networks providing continuity of care [3,4].

This new outlook has given rise to a variety of models for assessing hospital performance [5]. However, many of them have proven unsatisfactory as they focus on single variables, yielding a truncated, one-sided view of performance. There have been few attempts to analyze these models within the framework of organization theory.

According to organization theory, different ways of viewing organization engender different models of organizational performance, whether in general [6,7] or in the specific field of healthcare [8–10,4]. Thus, although many indicators, dimensions and models of hospital performance have been proposed, they reflect different and fragmented facets of performance. Moreover, the different dimensions studied in these models are not necessarily valued in the same way by all stakeholders. Each stakeholder group has its own aims, preferences, and values; this makes it difficult to derive a clear concept of organizational performance [11].

The purpose of this paper is two-fold: first, to find out which are the emerging views on hospital performance; second, to analyze how these views vary among hospital stakeholders. To do this, we conducted an in-depth case study of a teaching hospital using a quantitative (survey) and a qualitative (semi-structured interviews) method. The paper is in four parts: an introduction to the theoretical framework we used to investigate views on hospital performance, a description of the research method and of the hospital selected for the case study, a presentation of the findings and a discussion.

1.1. A multidimensional framework of hospital performance

Four models in particular have addressed the multiple dimensions of organizational performance: the “*Rational goal model*” is based on an instrumental and rational conceptualization which holds that an organization is effective if it achieves specific objectives [12]; the “*Open system model*” views the organization as an entity closely dependent on its environment [13]. The environment provides the organization with employees, customers and suppliers. Also, there are laws and regulations with which the organization must comply. The flexibility and adaptability needed to acquire resources for growth are signs of good performance; the “*Internal process model*” emphasizes internal production processes [14]. Performance is then based on the way in which services are produced; the “*Human relations model*” maintains that an organization performs well if its members, relieved from burdensome external controls, can fulfill their potential and become committed to the successful operation of the organization [15].

Several authors on organizational theory have tried to combine models (e.g., [6,16,17]) but not all the criteria used in these models are compatible. Some compete with each other. For instance, flexibility and openness to change are valued in the *Human relations* and *Open system* models, whereas control and stability are sought in the *Rational goal* and *Internal process* models. The emphasis on internal processes in the *Human relations* and *Internal process* models is contrary to the emphasis on external processes in the *Rational goal* and *Open system* models [18,19]. However, according to Quinn and Rohrbaugh [17], these four models, which encompass most of the performance criteria relating to means, ends, management values and structural preferences, can be combined into a comprehensive framework of competing criteria. The organization is in fact seen as a political arena where members of the staff form special interest groups depending upon how they view organizational performance; these groups then interact with each other [11].

That organizational performance depends on competing views is the mainstream tenet in organization theory. However, both in the organization theory and health services literatures, views emphasizing con-

sensus have also been expressed. According to the normative organizational model, organizational performance is based on integration, cohesion and shared values. For instance, the balanced scorecard of Norton and Kaplan [20] measures organizational performance using four interlinked dimensions that has given rise to performance assessment systems for healthcare organizations (e.g., [21]). The strategic management literature also stresses shared values and cohesive management [22]. Besides, the results of empirical research have shown that the performance priorities of hospital stakeholder groups subjected to common environmental pressures overlap [23] and that views diverge more between hospital and non-hospital stakeholders than among hospital stakeholders [4]. Finally, changes in the hospital environment, whether greater state control or the introduction of company management models, are overturning barriers between professional territories to build more contingent relationships in work organization and management [24,25,1]. Closer collaboration between clinicians and managers may generate new cross-boundary tasks of management and performance review [26].

The present study uses an analytical framework for assessing the performance of healthcare organizations that embraces both competing and consensual views [10] and which has been applied successfully to Belgian hospitals [27] (Table 1). Like Quinn and Rohrbaugh's competing model [17], this framework is based on Parsons' social system action theory [28]. The strength of the Parsonian perspective is that it can embody all four dominant models of organizational performance (*Rational goal*, *Resource acquisition* (*Open systems*), *Internal process*, *Human relations*) by explaining that they correspond to the four major functions that all social systems – including the hospital – need to address in order to survive and develop. A social system that works well (i) has to be goal-oriented, (ii) must interact with its environment to obtain resources, (iii) needs to integrate its internal processes in order to function and (iv) must maintain a system of values and norms that support and constrain functions (i)–(iii). In other words, the Parsonian perspective enables several aspects of organizational performance that are usually considered in isolation to be considered simultaneously [8].

Table 1
Analytical framework for assessing hospital performance

Performance model: dimensions	Definition	Sub-dimensions
Rational/goal	A rational view which holds that an organization is effective if it achieves specific objectives	Effectiveness Budget equilibrium/cost control Goal attainment
Open system	The success in the acquisition of resources, be they material, financial, or symbolic, as well as growth through flexibility, adaptation, and external support, is the valued performance criteria	Attractiveness/capacity to acquire resources Openness/community relations
Internal process	A high-performance organization is one which runs smoothly, without undue internal strain	Productivity Internal organization functioning Patient satisfaction
Human relations	Performance is defined in terms of the organization's internal health using dimensions such as morale, climate, cohesion, conflict and human development	Professional values Public service values Organizational values Work climate Personal achievement values

2. Methods

2.1. Research design

We used the case study as this design is suited to the study of complex phenomena [29]. To improve internal validity, we combined a qualitative and a quantitative analysis (interviews of key hospital stakeholders and a survey of hospital staff) and triangulated the results. The research methods were approved by the university review board for human subject research.

2.2. Hospital selection

The selection of Bicêtre Hospital for the case study was opportunistic. In 2000, the French Ministry of Health launched a national clinical research program in which hospital performance was a priority topic. Key decision-makers at Bicêtre hospital were eager to take part and the staff was highly motivated.

Bicêtre Hospital is part of AP-HP (*Assistance Publique-Hôpitaux de Paris*), the public network of teaching hospitals which serves a population of over 10 million in and around Paris. It is a typical mainstream hospital (1020 inpatient beds and 23 day-care beds, 816 physicians and 2701 employees), delivering care in nearly every specialty in medicine and surgery. It is the AP-HP hospital with the largest number of emergency room (ER) visits for adults and children (66 696 ER visits in year 2000), and is a national reference center for neuroradiology. Teaching hospitals in France now also have to act as community hospitals. In this respect, Bicêtre hospital is well integrated within the urban and social landscape of the Paris suburbs and serves a local population of about 200,000 residents. It is thus an interesting case to study because many teaching hospitals in French provincial towns face similar challenges.

The Faculty of Medicine of Paris University XI, one of the three main Paris medical faculties, is located within the grounds of Bicêtre hospital. Each year over 1000 medical students study and practice on the site. Twenty laboratories of the National Institute of Research in HealthCare (INSERM), dedicated to research in the fields of genetics, bio-statistics and public health sciences, are also located on the site. Bicêtre hospital is thus an interesting exemplar of a hospital which needs to enhance performance in its three main missions that are care, teaching and research.

2.3. Interviews: study population and analysis

We began with the interviews, using an existing semi-structured questionnaire based on the analytical framework developed by Sicotte et al. [10]. Three groups of stakeholders were targeted: physicians; care-givers (mainly nurses); hospital managers and staff. We interviewed 80 stakeholders during the first semester of 2001 in order to identify key opinions in each group. Final sample size was established by theoretical saturation. Interviews were conducted as long as they continued to enrich the categorical dimensions of hospital performance [30]. The final sample was composed of 30 physicians (including 18 care unit heads representing 16 different medical specialties, a union representative and a general practitioner); 18 nurses and head nurses; 39 administrative staff (including 15 department heads) and 9 persons from ancillary services. An additional eight persons representing external supervisory authorities (AP-HP and town hall) were also interviewed. Interviews lasted an average of 90 min. All interviews were conducted on a one-to-one basis by the same researcher to ensure that the questions and emphasis were similar across interviews and that the meaning and importance ascribed to each sub-dimension of the analytical framework were as explicit as possible. Space was also given to allow the emergence of performance dimensions not included in the initial model.

Transcripts of the interviews were analyzed using QSR NUD'IST 4.0. Data were categorized as follows [30,31]: (i) Axial coding was used to relate responses to the 4 dimensions and 13 sub-dimensions of the initial framework and to analyze how far views were shared by the three stakeholder groups; (ii) vertical coding was used to better define the meanings associated with each dimension, sub-dimension and item. Each result was compared to the others in order to determine the sub-dimensions of a given dimension; (iii) dependency chains were sought to distinguish prerequisites from consequences. All responses were coded by two researchers working independently. Discrepancies were resolved by consensus. If agreement was not reached, the response was discarded. The rate of unresolved discrepancies per interview was under 15%. This analysis helped to make minor adjustments to the initial model and to the survey questionnaire.

Table 2
Response to the survey questionnaire

	Hospital staff (n)	Questionnaires			
		Sent (n)	Returned (n)	Response (%)	Analyzed (n)
Caregivers (excluding physicians)	2358	610	309	51	300
Physicians	786	151	59	39	54
Administrative staff	524	139	51	37	48
Total	3668	900	419	46.6	402

2.4. Survey: study population and analysis

For the survey, we used the questionnaire that was used to identify the dimensions of performance of our analytical framework in Belgian hospitals [27], after adapting it for the content validity of each performance dimension and for item quality (as assessed during interviews) (Appendix A). The questionnaire was submitted to Bicêtre staff in a pilot test to ensure that questions were well understood. It comprised 4 dimensions and 13 sub-dimensions of performance, measured by 66 items (see annex 1)¹. Each item was scored on a visual scale from 0 to 10 (from lesser to greater importance). At least three items were kept for each dimension for analysis of internal consistency. In January 2002, after the pilot test, it was administered to a random sample of 900 staff members out of a total of 3668 (24.5%). The distribution of individuals by work category was similar in the sample and total hospital population (Table 2). The overall response rate was 46.6% (419/900). It was 51% for caregivers, 39% for physicians and 37% for administrative staff.

Questionnaires were considered invalid if: (a) data were missing for more than 5 of the 66 items; (b) scores were within 5% of the theoretically highest (600) or lowest (0) possible value, and (c) a score of less than 5/10 was recorded for all three items of the consistency test. By these criteria, 402 of the 419 questionnaires were valid.

All questionnaire items were submitted to a principle axes factor analysis with orthogonal rotations (varimax) to verify the validity of the performance variables. A valid factor analysis required a minimum of 5

respondents per item (i.e., 300 respondents for our 66 items); we had 402 respondents.

Cronbach's alpha estimates for the scoring of each sub-dimension exceeded 0.70, the level generally considered acceptable, for 11 out of 13 sub-dimensions. Cronbach alpha was much lower for clinical efficacy/effectiveness (0.54) and productivity (0.59).

To compare the relative importance of the sub-dimensions, we ranked them into five groups according to the relation between the 90 and 99% confidence intervals (CI) of each case and the average mean of the cases' distribution. To compare stakeholder groups, we did not compare mean scores but their rank order (Spearman's test) because preliminary analyses had detected biases in rating (significantly higher ratings from administrative staff). A Student *t*-test was used to compare the mean scores for dimensions. Statistical tests were performed using SAS software (version 8.2., SAS Institute Inc. Cary, NC, USA).

3. Results

3.1. Comparison of the theoretical and empirical dimensions of hospital performance

A first factor analysis extracted four main factors or dimensions of performance accounting for 74% of the total variance. Each dimension tended to form a single factor to the exception of "Rationale" which was nearly equally composed of two factors, the second factor being "Internal process" (Table 3). The "shared values/organizational climate" dimension was the most important factor.

A second factor analysis performed at the level of the sub-dimensions of performance did not give enough evidence that each of the 13 sub-dimensions formed the

¹ A complete version of the questionnaire is available from the corresponding author.

Table 3
Principal components analysis with varimax rotation on four dimensions

Dimension	Mean score (S.D.)	F1	F2	F3	F4
Rationale	7.94 (1.03)	0.63	0.58	0.38	0.34
Open systems	7.04 (1.31)	−0.20	−0.44	0.25	0.84
Internal process	7.65 (1.1)	−0.75	0.61	0.24	0.07
Human relations	8.28 (0.96)	−0.01	−0.29	0.86	−0.41

expected factors. Moreover, the results for three items could not be interpreted (items 21, 27, and 35).

3.2. Stakeholder performance values

The mean score for the “shared values/organizational climate” (*Human relations*) dimension was significantly different from the means for the three other dimensions ($P < 0.001$) (Table 3). A comparison of the confidence intervals (CIs) of the mean scores for the 13 sub-dimensions defined 5 categories (illustrated by different colors in Fig. 1). Each horizontal bar represents the CI of the mean score for a given sub-dimension: the clear central section gives the 90% CI and the dark lines give the 99% CI.

The overall mean score for all 13 sub-dimensions was 7.9 (S.D. 0.65). Mean scores for each sub-dimension are given in the left-hand columns of Table 4. The highest category (in which the 99% CI is above the overall mean) was composed of “Profes-

sional values” (8.51), “Personal achievement values” (8.5), “Efficacy/effectiveness” (8.46), “Public service values” (8.43), “Work climate” (8.38), “Patient satisfaction” (8.27), and “Internal organization” (8.25). All five sub-dimensions of the “*Human relations*” dimension had a high score (≥ 8.25). The lowest category (in which the 99% CI is below the overall mean) was composed of “Openness/community relations” (7.4), “Productivity” (7.2), “Attractiveness” (6.77) and “Goal attainment” (6.75).

The interviews were useful to clarify the stakeholders’ perception of “Professional values”. These values included ethics, listening to the patient, devotion and trust, but, at the same time, according to many stakeholders, were being superseded by technical skills. Besides, “Public service values” were thought to lack consistency and “needed to be defined more clearly and in greater depth” (Physician #69). These values were notably seen as equal access to care, continuity of care, and meeting the needs of the population. Equal access was often understood in terms of ability to pay: “So far, we have only tried to find temporary solutions to deal with people with no insurance cover” (Physician #62); “There is a free consultation clinic for the uninsured” (Nurse #21). Differences with the private-for-profit sector were also stressed: “In a private establishment, child access to care may pose problems because an identity card is required; that’s not the case here” (Administrative staff #17). Opening hours were an important issue for continu-

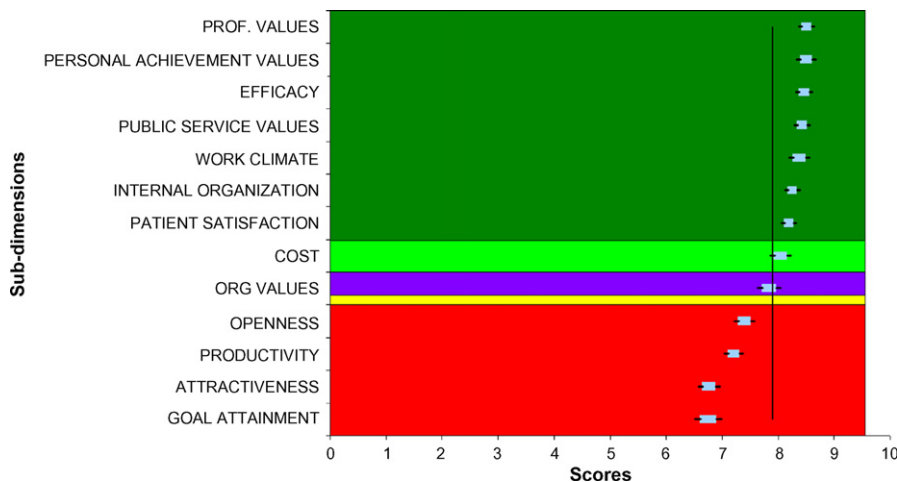


Fig. 1. Ranking of the 13 sub-dimensions into 5 groups according to the confidence intervals of mean scores.

Table 4

Mean score for each sub-dimension and ranking of sub-dimensions by stakeholders

Sub-dimension (dimension)	Mean score			Ranking		
	<i>n</i>	Mean	S.D.	Care-givers (<i>n</i> = 300)	Physicians (<i>n</i> = 54)	Administrative staff (<i>n</i> = 48)
1. Professional values (IV)	402	8.51	1.09	1	2	3
2. Personal achievement values (IV)	402	8.50	1.30	2	1	1
3. Efficacy/effectiveness (I)	402	8.46	1.13	3	5	4
4. Public service values (IV)	402	8.43	1.11	5	3	5
5. Work climate (IV)	402	8.38	1.41	4	8	2
6. Patient satisfaction (I)	402	8.27	1.09	6	4	6
7. Internal organization (III)	402	8.25	1.05	7	6	7
8. Costs/efficiency (I)	402	8.04	1.38	8	7	9
9. Organizational values (IV)	401	7.84	1.58	10	9	8
10. Openness (II)	402	7.40	1.36	9	11	10
11. Productivity (III)	402	7.20	1.30	11	10	12
12. Attractiveness (II)	402	6.77	1.51	12	12	13
13. Goal attainment/output (I)	402	6.75	1.84	13	13	11

ity of care: “Unlike private establishments, we are open 24 h a day” (Nurse #12); “When some emergency departments decide to close, we (public hospital) remain open” (Physician #62). Finally, many stakeholders insisted on the need to meet the public’s expectations: “The health system will be able to evolve because public hospitals mirror public values” (Physician #60).

According to the dimension “Shared Values/Organizational climate”, “Work climate” (8.38) is amongst the sub-dimensions rated highest. Factors of this sub-dimension, such as interfering in day-to-day staff relationships, were encroachment on private life (nurses #33 and #37, medical secretary #72, head-nurse #78, physician #64) and source of burn-out (social worker #14, physicians #60 and #66, administrative staff #63) and especially conflict management. Conflicts were considered “unavoidable” (nurse #34) but their resolution was seen as “crucial to improving performance” (physician #10). Conflict management was perceived as “a positive way of changing the organization” (physician #69); “too much calm triggers suspicion” (head-nurse #65). Factors cited in relation to internal organization were individual well-being, social utility, belonging, and professional identity. Lack of motivation was a common complaint: “When I come on duty, I find staff members who are disillusioned. We do not always have a remedy but I do not entirely agree with those of my colleagues who say that it is all a matter of resources”. “I sometimes think that we

should question how we organize our work and how we interact with each other” (physician #69).

The five items with the highest mean scores belonged to the three sub-dimensions with the highest ratings (see list). Except for item no. 4, they make up shared professional and public values.

Five items with highest mean scores:	M
1. Staff preserve patient dignity and confidentiality	9.31
2. Providing care at all times and continuity of care	9.21
3. Staff is empathetic to patients	9.15
4. Striving to improve both curative and preventive care	9.08
5. Providing care to all patients without discrimination	9.05
Five items with lowest mean score:	M
1. Well regarded by the media	4.93
2. Attracts the most renowned hospital managers	4.94
3. Develops a large service volume to maximize reimbursement	5.52
4. Short length of stay compared to peer healthcare organizations	5.79
5. Care unit managers are widely renowned	5.94

3.3. Analysis of responses by stakeholder group

The three stakeholder groups ranked the same sub-dimensions among the top five with the notable exception of work climate (see right-hand columns of

Table 4). Physicians ranked it eighth, caregivers fourth and administrative staff second. Rankings were highly positively correlated. The Spearman correlation coefficient was 0.939 for administrative staff/caregivers, 0.896 for caregivers/physicians and 0.829 for administrative staff/physicians. Correlations were significant at the 0.005 level (two-tailed).

Many stakeholders were sensitive to issues not normally thought to concern them directly. For instance, administrative staffs were sensitive to work climate and relationships in care units, taking them to be resource management issues needing new modes of assessment and analysis of physicians and nurses (hospital chief executive #45). Some stakeholders linked iatrogenic risks such as nosocomial infections to these issues (nurse #33). Physicians were fully aware of cost constraints and ways of reducing expenditure: “Our ability to adapt is clear from the way we have complied with payment systems inciting us to reduce length of stay one day and increase it the next” (physician #69).

4. Discussion

The notion of what a modern hospital should be has evolved rapidly in France under pressure from successive healthcare reforms. The objectives of this study were to capture emerging thoughts on hospital performance and to examine the values underlying these thoughts among three groups of hospital stakeholders: caregivers, physicians and administrative staff. Our results first of all confirmed that hospital performance is multifaceted. Stakeholders gave expression to the four main schools of thought on performance, in line with mainstream organizational theory [6,16,7,17], health services theory [8,9], and empirical work in hospitals [32,27,4].

A factor analysis of our data extracted four empirical factors describing overall hospital performance which were congruent with those of our theoretical model [10]. However, the relative importance given to some sub-dimensions of performance and their uneven distribution across the four performance models were somewhat unexpected. Stakeholders assigned the greatest importance to four sub-dimensions of the “*Human relations*” model. Two of the four (Professional values, Public service values) referred to

Shared values/organizational climate dimension and the other two (Personal achievement and Work climate) to quality of working life. These are not the factors usually cited first to describe the performance of an organization. The emphasis on Public service values contradicts the commonly held view that health professionals, especially physicians, identify themselves with their professions rather than with their institutions. The emphasis on quality of working life and team relationships confirmed the results of the Belgian study [27] and the observation that severe, long-lasting budgetary constraints and institutional re-organization have weighed heavily on the quality of everyday work [33]. French hospitals have suffered a lot in this respect over recent years. The recent government reform limiting the working week to 35 h has amplified caregiver turn-over per shift and the chronic shortage of nurses and physicians, and has probably had an adverse effect on professional values such as commitment to excellence.

One of the sub-dimensions ranked among the top five (“Efficacy/effectiveness”) did not belong to the *Human relations* model but belonged to the *Rational goal* model. Efficacy – or the ability to cure – the factor that most people associate with hospital performance, appeared from now on as firmly associated with efficiency, i.e., the constraint to maximize available resources. On the other hand, two other empirical sub-dimensions of performance – “Cost control/efficiency” and “Productivity” – which represent the other side of efficiency were ranked lower in importance.

Our findings thus suggest that the contemporary concept of hospital performance should be broadened and that a wider variety of evaluation systems and measurement tools should be used. They challenge the parsimonious stance often used to draw performance road maps and scorecard systems [34].

Our second objective was to analyze whether the concept of hospital performance varied among stakeholder groups. Our results support a consensual view. The spearman correlation tests revealed a positive correlation in the order in which the three groups ranked the 13 sub-dimensions. The top five performance sub-dimensions were the same in the three groups with the exception of work climate. Two stakeholder groups normally thought to have competing views – administrative staff and caregivers – showed greater agreement

than expected. Less importance was given to economical dimensions than human dimensions even by administrative staff. Consensus was also noted during the interviews. Physicians and managers had similar views on most economic issues, such as budgetary reforms, and new fee scales.

Our results on stakeholders thus challenge the traditional mainstream view. The public hospital seems to be less the usual political arena where members form special interest groups with very divergent outlooks (e.g., [35]). The view of hospital performance among stakeholder groups appeared far more consensual, in line with the thesis that the modern hospital is moving toward a community of more shared values [3]. Our results indeed support the view that hospital stakeholders are rallying to a common cause in response to strong external pressures, especially financial pressures. Since the early 1990s, the healthcare environment in France has become more hostile, unpredictable, and competitive after years of relative calm ([36]). Our results on stakeholders also confirm those of a Belgian study which revealed shared views between administrators and physicians [27]. The great financial constraints in France might explain the new consensus.

The great strength of our study was that it combined both a qualitative and quantitative approach, thus increasing the level of confidence we can have in the results. However, several potential limitations should be kept in mind. First, respondents may have provided the answers expected of someone in their position rather than have voiced their own opinions. Social desirability can lead to biased responses on sensitive topics [37]. The very forthcoming opinions expressed by interviewees did not, however, substantiate this view. Second, the factorial analysis revealed that some items were either related to more than one sub-dimension or to a sub-dimension inconsistent with the theoretical model. Moreover, the results for three items could thus not be interpreted. The survey respondents may have found these items difficult to understand or the items may truly be related to more than one concept. Similar problems were encountered in the Belgian study [27]. This non-independence of sub-dimensions means that comparisons between stakeholder groups must be interpreted with caution. The caution should be greater because a lack of statistical power led to an analysis of rank order rather than of scores.

5. Conclusion

The current view of hospital performance includes dimensions beyond and above the often-cited dimensions of efficacy, effectiveness and quality of care. These other weighty dimensions are organizational values and human values related to quality of work life. These values attracted a high degree of consensus among hospital stakeholders even though performance is a highly multidimensional concept. It seems as a more shared view of performance is emerging among hospital stakeholders. However, at the same time, a certain level of tension among performance sub-dimensions still persists. The performance framework presented in this study can help community leaders and managers better understand the situation they face and the steps they need to take in order to assess the performance of their organization. However, further studies under different real-life conditions are necessary to enhance the validity of our findings.

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Appendix A. Definition of sub-dimensions and items in the survey questionnaire

A.1. First dimension: Rationale

Goal attainment

1. Sets up goals and strives to reach them
2. Able to identify the right time to review goals
3. Aims at not exceeding budget estimates
4. Strives to manage labor reorganizing projects efficiently (i.e., implementing reduced working hours)
5. Seeks to implement institutional projects like accreditation successfully

Efficacy/effectiveness

6. Aims at improving the population's health
7. Strives to improve both curative and preventive care
8. Assesses the impact of the services/care it provides

Patient satisfaction

9. Patients are truly satisfied with the service provided
10. Receives few complaints from patients
11. Strives to welcome and comfort patients and their families as best as possible
12. Takes into account patients' viewpoints in organizational changes
13. Provides appropriate information to patients on their health and care

Cost control/efficiency

14. Produces the best possible health outcomes given the available resources
15. Avoids waste of all kinds (e.g., does its utmost to avoid the expense of unwarranted tests)
16. Optimizes its costs without impairing the quality and safety of care

A.2. Second dimension: Open systems (relation with environment)

Attractiveness/capacity to acquire resources

17. Has high level clinical research activities
18. Offers a state-of-the-art technological environment
19. Care unit managers are widely renowned
20. Attracts qualified employees
21. Knows how to obtain additional financial resources
22. Attracts the most renowned hospital directors
23. Well regarded by the media
24. Interns and non-resident students compete for internships in clinical departments

Openness

25. Informs the population of its activity
26. Develops networks with other entities or professionals to improve the provision of services to patients
27. Develops strong ties with the community (associations, cultural centers. . .)
28. Big job supplier
29. Has concern for its relations with independent (private?) practitioners outside the hospital
30. Adjusts its structures to the needs of the local environment (ambulatory care, etc.)

A.3. Third dimension: Internal processes

Productivity

31. Has as short – or a shorter – length of stay as peer healthcare organizations
32. Care is excellent from a technical point of view
33. Increases its volume of service, provided that the activity is justified and relevant
34. Continuously tries to improve the quality and safety of care, even though the volume of service is high
35. Develops a large service volume to maximize reimbursement
36. Offers services not available elsewhere
37. Does not sacrifice the relational dimension of care for a larger volume of service

Internal organization

38. Providing of care to patients is carefully coordinated among care units
39. Has the means required to provide patient care under the best conditions
40. Relies on qualified staff
41. Strives to reduce the administrative burden for the patient
42. Medical practices are evidence-based
43. Abides by the norms and laws in force
44. The architecture of the buildings facilitates the patient's pathway

A.4. Fourth dimension: Human relations (shared values/organizational climate)

Public service values

45. Provides care to all patients without discrimination
46. Provides care at all times and ensures continuity of care
47. Staff gives priority to collective over personal interest
48. Staff management diffuses information around hospital's history

Professional values

49. Staff is at the patient's service
50. Staff is devoted
51. Staff is conscientious

- 52. Staff preserves patient dignity
- 53. Staff preserves patient confidentiality

Organizational values

- 54. Staff is empathetic to patients
- 55. Staff is proud to belong to an organization like AP-HP
- 56. Staff considers ethics' problems

Work climate

- 57. There is strong cohesion and solidarity among team members in the organization
- 58. Each staff member recognizes and respects the competencies and the work of their peers
- 59. Staff's stress levels and exhaustion are taken into account
- 60. The balance struck between the staff's professional and private lives is right
- 61. An important absenteeism is observed
- 62. Everyone contributes from their experience and expertise to produce a high quality solution

Personal achievement values

- 63. Staff fulfills itself through work
- 64. Staff is aware of the importance and usefulness of its work
- 65. Staff's competencies are assessed and praised
- 66. Staff's competencies are recognized

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