



---

# The Role of Collaborative Arrangements on Quality Perception in Ambulatory Care. Recent Experiences in Italy and Implications for Future Research

Olimpia Pino<sup>1,\*</sup>, Davide Dazzi<sup>2</sup>, Alessandro Chiari<sup>2</sup>, and Bruno Agnetti<sup>2</sup>

<sup>1</sup>Department of Neurosciences, University of Parma, Italy

<sup>2</sup>Institute for Research SMI Emilia Romagna, Italy

\*Corresponding author (Email: olimpia.pino@unipr.it)

**Abstract** - The Italian primary care had placed particular emphasis on promoting new organizational arrangements. Few research studies have analyzed their impact on quality perception. With the aim to examine clients' and physicians' satisfaction in ambulatory care within the different organizational models, we studied 96 patients (aged between 18 - 80 years) and 22 physicians ( $M = 50.33$  years). Subjects answered (6 point Likert-type scale) to a 17 items questionnaire (PAT-MED). Factor analyses found four factors accounting for 64.56% of the common variance. PAT-MED dimensions were compared with the EUROPEP administered only to the clients. We found moderately high level of perceived quality with care. Results showed that GP collaborative arrangements do not affects satisfaction. Gender resulted significantly associated to the privacy protection guaranteed by the GP. Marital status and education were not associated with any of the satisfaction measures. Moreover a significant association between age and a number of satisfaction variables was noted. Findings indicated empathic and professional abilities of physicians more important than organizational arrangements.

**Keywords** - Customer Satisfaction, Perceived Quality, Client-Centred Approach

---

## 1. Introduction

Customer satisfaction is a concept centred on the vision of the patient as a "user-client", in the "total quality" perspective. In order to develop a global view of quality of care, it is important to separate and consider both technical and human aspects. Parasuraman et al. (1988), classified criteria used by consumers when they evaluate service quality as five broad dimensions: 1) tangibles (the appearance of physical elements); 2) reliability (accurate performance); 3) responsiveness (promptness and helpfulness); 4) assurance (competence, courtesy, credibility and security); and 5) empathy (access, communications and customer understanding). Open and clear communication between doctor and patient is a key component of patient-centered care. When care is both patient-centered and delivered in a timely manner, patients are more likely to adhere to treatment plans, to be fully engaged in care decisions, and to receive better care overall (Coluccia, Cioffi, Ferretti, Lorini, & Vidotto, 2006). Scorecard indicators based on patients' experiences indicate major deficiencies in timeliness of care and in communication (Graugaard, Eide, & Arnstein, 2003; Mowatt et al., 2001). Ware et al. (1978) studied the measuring and meaning of patient satisfaction and identified four satisfaction dimensions that affect patients' perceptions: 1) doctor conduct; 2) service availability; 3)

confidence; and 4) efficiency/outcomes. Other studies on customer satisfaction stressed the importance of convenience, access, waiting times, choice, quality of information, range of services, nature of the patient's medical problems, and patients' demographic background (Sage, 1991; Singh, 1990). Finally, it was suggested a "value added" as an alternative measure, which includes relationships with doctors, innovation, and intensity of use of certain resources (Eiriz & Figueiredo, 2005). An important element of this affiliation is the ability of the health worker to engage empathically with the patient. It would therefore be reasonable to assume that health professionals manifest particularly high levels of skill in dealing with patients at an interpersonal level. The facts unfortunately often fail to bear this out (Landon, Gill, Antonelli & Rich, 2010).

The implementation, planning, financing and monitoring of the Italian health care system is the duty of the 21 Regions. The Regions are split into around local health units (USL=Unità Sanitarie Locali) that have managerial responsibility for health care delivery. Investments have been made in developing the strategic role of general practitioners (GPs). New policies and programs in this field have been aimed at improving the clinical skills of GPs by promoting the adoption of evidence-based guidelines (Chou, Vaughn, McCoy & Doebbeling, 2011); expanding the scope of services and the

range of conditions treated by GPs, with a strong focus on health promotion, early diagnosis, and management of chronic diseases; enhancing new forms of delivery of primary care by promoting innovative organizational arrangements of GPs and their involvement in multiprofessional networks; and introducing managerial tools to measure performance and provide incentives to GPs in their roles as gatekeepers, budget holders (e.g., commissioning/purchasing and fund holding), and providers (de Jong, Groenewegen & Westert, 2003; Fattore & Salvatore, 2010).

General practitioners are the first point of contact for most common health problems and act as gatekeepers for the prescription of drugs as well as for access to specialty and hospital care. Particular emphasis has been placed on promoting various forms of collaboration and integration, among GPs as well as between GPs and other professionals. Financial incentives have been provided to physicians to develop and join these new organizational arrangements. The existing organizational arrangements, which are referred to as associations, networks and group practice, imply an increasing level of collaboration and progressively higher financial reward for GPs joining in the team (Fattore & Salvatore, 2010). Specifically, association consists in coordinating opening hours from Monday to Friday up to 7 p.m., implementing clinical-diagnostic guidelines for the most prevalent diseases, and holding regular meetings to review the quality of the activities and to promote the adoption of common prescriptive behaviors. The network implies, in addition to the association features, sharing the electronic patient records, a network connection of the ambulatories, and access to the Local Health Trust system for the reservation of laboratory test and specialty visits (Lo Scalzo et al., 2009). Group practice implies, in addition to the network features, working in the same facility and sharing administrative and clinical staff. In 2004, 60% of Italian GPs had already become involved in such collaborative initiatives, and 13.8% had created group practices. However, few research studies have attempted to analyze the impact of collaborative organizational arrangements on client satisfaction (Butzlaff et al., 2006). The group medicine is useful to the physician, the patient and the health service because it can improve care processes and, therefore, this should be reflected on the assessment of the service that users do. For this purpose the present research compared patients of GPs who run group practice with patients of GPs who work individually. The main aim of the study was to analyze the relationship between collaborative organizational structures in primary care and the resulting quality perception. The effect of these organizational models on the quality of care delivered by GPs was examined along with the sociodemographic characteristics of the patients. Given that institutional and organizational resources are limited, it is crucial to understand which actions should be prioritized by policymakers and health care managers (Jommi, Cantu, & Anessi-Pessina, 2011). Therefore we have selected the Emilia Romagna Region (4.5 million inhabitants), which has one of the highest percentages in the country of GPs who adhered to the new collaborative models (i.e., associations, networks, and groups). Moreover, from 2006, the Emilia

Romagna Region has introduced primary care units (PCUs), in which GPs, nurses, and other health care professionals deliver comprehensive health care in community facilities. General practitioners who will belong to a PCU can also maintain membership in other collaborative arrangements, such as group medicine, associations, or networks. Currently, PCUs deliver only a very limited range of services, but under the current trend, they will evolve into primary care centers or homes in which there are a variety of primary care professionals, including GPs, nurses, social workers, and ambulatory-based specialists, and services (e.g., diagnostics, drug distribution), and will be concentrated in the same facility (Deom, Fattore, Frosini, Salvatore, & Tozzi, 2007; Deom, Agoritsas, Bovier, & Perneger, 2010). Two Italian studies have shown that the participation of GPs in associations, networks, or group practices does not necessarily improve their general performance (Fattore & Salvatore, 2010; Fattore et al., 2009). These studies have investigated services arrangements only from a point of view of services provider. Effective communication and the delivery of quality health care are tightly interconnected in complex ways. There is growing research evidence linking provider-patient communication and relationship with a range of measurable indices of patient outcome (Colombo et al., 2009; Haggerty et al., 2003). Patients who enjoy good quality communication tend, for example, to be more satisfied with the care received, exercise greater adherence to agreed/recommended treatment regimens and courses of action, and seem to make more rapid recoveries with fewer complications (Maxwell, 1984; Pino & Rossini, 2012). Coincidentally, and from the health provider's point of view, how health care professionals relate to patients may be a significant factor in determining not only whether or not they are faced with malpractice claims when things go wrong, but also susceptibility to burnout (Haggerty et al., 2003; Mehrotra, Epstein, & Rosenthal, 2006). In addition to quality and costs, managements tools may also have an impact on doctors' autonomy and on their relationships with patients (Hippisley-Cox, Pringle, Coupland, Hammersley & Wilson, 2001). Understanding doctors' perceptions of quality is important. Thus, the second aim of the present study was to compare doctors' opinions about the impact of different managements organization with patients perceptions on different aspects of medical care. Our findings have policy implications for governments, and management implications for office-based physicians.

## 2. Method

### 2.1. Participants

Through collaboration with health care in general medicine, we selected a sample of patients relating to physicians working in groups compared with patients of physicians who work individually. At the organisational level actors such as patients and doctors involved in service delivery can assess health care quality. In order to compare perceived client and doctor quality a group of physicians received a questionnaire identical to

that of patients. The sample of physicians was recruited through telephone inquiries in which it was explained the purpose of the research and, on the basis of an affirmative answer, set up a meeting for giving any other information, obtaining informed consent and administering the questionnaires. Out of a total of 235 physicians contacted by telephone during the period between June 2009 and December 2009, only 22 of them participated. Patients sample was randomly selected from the waiting room of GPs in Parma. Patients accepted administration of the instruments well and generally appeared interested in giving a true representation of their opinions; cooperation was excellent (more than the 95% of patients requested give their consent to the research participation). The sample of patients was recruited during scheduled visits in studies in which interviewers prior to administration of the questionnaire explained the purpose of the study, answered questions and requests for clarification and collected informed consent. The sample of clients was of 96 participants. For both groups, the questionnaires were administered by means of face-to-face meetings emphasizing the anonymous and confidential nature of the data obtained.

## 2.2. Instruments

The data used in this study were collected in the city of Parma. The EUROPEP questionnaire (Wensing et al., 2007) was specifically designed to assess patients' perception of the quality of general practice care and to provide relevant feedback to physicians, patients and healthcare policy-makers. The instrument has been developed to enable international comparison of general practice care in Europe (Landis & Koch, 1977). The EUROPEP instrument comprises 23 questions, and answers are given on a five-point scale with only the extremes labelled as "poor" and "excellent". The scores are aggregated into two dimensions: "Clinical behaviour" (items 1-16) and "Organization of care" (items 17-23). The questionnaire also includes one question investigating perceived health status with a five-point scale ranging from "excellent" to "poor". Interviews were conducted by psychologists trained in interview techniques.

In order to measure quality of relationships and communication with health care professionals, we built on purpose questionnaire, using few simple words easily understandable also by persons with low formal education. The development of the questionnaire began with an extensive literature search. This included the social science, health care and health care quality literature, as well as the the marketing field. The literature search revealed a questionnaire, the SERVQUAL instrument (Parasuraman, Zeithaml & Berry, 1988), which has been subjected to critical review in other contexts. Our questionnaire was initially composed of 22 items that fall into four domains: 1) Patient-physician relationship, 2) Organization, 3)

Physical environment, and 4) Training / competence. A six-point Likert-type scale indicates how much each item mattered to the users. The score on each dimension is the sum of the corresponding item scores. Following a pilot study conducted on 30 patients not included in the research sample, the items were reduced to 18 (Physician-patient relationship: items 4, 5, 14, 15, 16; Organization: items 2, 8, 10, 12; Physical environment: items 1, 3, 11; Training/competence: items 6, 7a, 7b, 9, 13; Overall satisfaction: item 17). Adjustments were made according to observations which they made in order to make the presentation and statements as clear as possible. The content of questions was adjusted according to specific characteristics of the service, and comparable items were embedded. The revised questionnaire (called PAT-MED) was then considered ready to be used. The usual demographic questions – age, gender, marital status, organizational arrangements etc. – were included so that the researchers could check whether there were any systematic differences between subsets of the sample.

## 2.3. Statistical analysis

The questionnaires were analysed using a variety of procedures provided by the statistical program SPSS, 119 Version. Descriptive statistics, including frequencies and crosstabs, were mainly used. The item-scale correlation coefficient was calculated to determine whether each item for the PAT-MED scale was substantially related ( $r > 0.40$ ) to the total score computed from the other items in that scale. Internal consistency reliability was estimated by Cronbach's alpha coefficient. Finally, construct validity was assessed conducting a principal component analysis (PCA) and only marginally by the means of the effects of mediation variables as age, gender, and perceived health status. The Pearson correlation coefficient was utilized to estimate the correlation between variables.

## 3. Results

Overall, 96 patients filled in the questionnaire. The 60.40% of the total sample were women, 57.3% of participants were married, 27.1% single, 12.5% separated/divorced, and 3.1% widowed. As for the age groups are as follows: a) 16.7% between 19 and 28 years, b) 12.5% between 29 and 38 years, c) 19.8% between 39 and 49 years, d) 22.9% between 50 and 59 years, and) 13.5% between 60 and 69 years, f) 14.6% between 70 and 79 years. Of these participants, 70.8% pertain to group medicine while 29.2% pertains to individual doctors. Of the 22 interviewed physicians (mean age is of 50.33 years,  $SD = 8.95$ ), 86.4% are male and 13.6% female gender, the 72.7% are married. As regards the type of job organization, 86.4% belongs to the GrP and the remaining 13.6% to SP.

**Table 1.** Means and standard deviations for EUROPEP questionnaire (Patients sample n = 96)

Item	Item content	Mean	SD
1	Making you feel you had time during consultation	3.92	1.033
2	Interest in your personal situation	4.01	1.021
3	Making it easy for you to tell him or her about your problem	4.13	1.008
4	Involving you in decisions about your medical care	4.07	.987
5	Listening to you	4.22	.986
6	Keeping your records and data confidential	4.19	1.009
7	Quick relief of your symptoms	3.97	1.061
8	Helping you to feel well so that you can perform your normal daily activities	3.99	.989
9	Thoroughness	4.14	.991
10	Physical examination of you	3.90	1.147
11	Offering you services for preventing diseases (eg screening, health checks	4.09	.952
12	Explaining the purpose of tests and treatments	4.13	.921
13	Telling you what you wanted to know about your symptoms and/or illness	4.03	1.031
14	Helping you deal with emotional problems related to your health status	3.94	1.103
15	Helping you understand the importance of following his or her advice	4.05	1.019
16	Knowing what s/he had done or told you during contacts	3.94	1.024
17	Preparing you for what to expect from specialist or hospital care	3.98	.962
18	The helpfulness of the staff (other than the doctor)	4.07	1.018
19	Getting an appointment to suit you	4.09	.963
20	Getting through to the practice on telephone	4.09	1.037
21	Being able to speak to the general practitioner on the telephone	4.13	.943
22	Waiting time in the waiting room	3.09	1.323
23	Providing quick services for urgent health problems	4.02	1.046

In Table 1 are showed the mean scores of the patients responses to the EUROPEP questionnaire. Participants gave higher evaluations to the availability of the doctor to listen to (item 5,  $M = 4.22$ ), the privacy of their medical and clinical data (item 6,  $M = 4.19$ ) and the lowest score for time in the waiting room (item 22,  $M = 3.09$ ). Comparisons through Mann-Whitney test did not produce significant differences

either for individual items or the two scales between GrP and SP. There was only a significant difference to the item 6 on information relating keeping record and data confidential that was higher for female patients. There was also detected a significant correlation between the scale "Clinical behavior" and age of participants ( $r = 0.259, p = 0.011$ ).

**Table 2.** PAT-MED items statistics: means, standard deviations and Mann-Whitney U test comparisons (Patients sample n = 96, Physicians n= 22)

	Items	PATIENTS		PHYSICIANS		"U"	p
		Mean <sup>a</sup>	SD	Mean <sup>a</sup>	SD		
1	Appearance, comfort and physical layout	4.92	.660	5.18	.664	849.5	.091
2	Clarity of informations	5.40	.761	5.50	.673	983.5	.573
3	Confidentiality	5.10	.840	5.59	.590	701.5	.008 *
4	Realible informations	4.98	.846	5.59	.590	596.0	.000 *
5	Sharing in treatment decisions	4.49	1.086	5.23	.869	658.0	.004 *
6	Information on medication prescriptions	4.81	1.009	5.59	.666	555.0	.000
7	Front office ability to listen/understand problems	4.93	.932	5.23	.813	861.0	.153
8	Staff confidentiality	4.88	.798	5.23	.685	786.5	.043 *
9	Appropriateness of care	4.98	.833	5.36	.727	749.5	.025 *
10	Adequacy of the working hours	4.94	.904	5.41	.666	1027.0	.803
11	Architectural barriers	1.53	1.056	1.50	1.144	909.0	.279
12	Telephone availability for urgent needs	4.93	.885	4.95	1.362	499.5	.000 *
13	Informations sharing with other colleagues	4.34	1.238	5.23	1.510	617.5	.001 *
14	Confidence in physicians	4.79	.807	5.36	.790	735.0	.015 *
15	Ability to reassure patients	5.05	.731	5.45	.671	617.5	.001 *
16	Physician confidence in his/her own abilities	5.06	.982	5.50	.673	735.0	.015 *
17	Overall satisfaction	4.96	.962	5.64	.581	617.5	.001 *

<sup>a</sup> Calculated on the basis of the items coding from 1 = Mostly unsatisfactory to 6 = Mostly satisfactory.

Table 2. shows the means, standard deviations and Mann-Whitney comparisons for patients and physicians responses to the individual items of PAT-MED questionnaire. Most participants of patients group feel that their doctors are able to give clear information (item 2,  $M = 5.4$ ), and to respond to their problems and needs (item 7b,  $M = 5.2$ ), without violate the privacy (item 3,  $M = 5.1$ ), they show confidence in their physician (item 16,  $M = 5.06$ ), and judge very good the ability of the physician to reassure them and put them at comfort (item 15,  $M = 5.05$ ). The presence of architectural barriers was criticized (item 11,  $M = 1.53$ ). Comparisons with Mann-Whitney test between responses of patients belonging to a GrP with those belonging to SP not produced significant differences (Mann-Whitney). Marital status, and education were not significant. Highly significant correlations ( $p < .001$ ) were found between scores on the "Ability to respond by the front office personnel," the "Confidentiality of staff", "The adequacy of the working hours," the "Physician's ability to meet the needs user ", "Confidence in the physician" with the age of patients ( $r = 0.317, p = 0.002$ ;  $r = 0.274, p = 0.007$ ;  $r = 0.290, p = 0.004$ ;  $r = 0.328, p = 0.001$ ;  $r = 0.290, p = 0.04$ , respectively). Increasing age was positively associated ( $p = 0.05$ ) with higher quality scores in "Respect the privacy", "Give reliable information", "Maintain the confidentiality", "Provide appropriate care", "Availability by phone for urgent needs ", "Confidence in the doctor" ( $r = 0.218, p = 0.033$ ;  $r = 0.261, p = 0.010$ ;  $r = 0.250, p = 0.014$ ;  $r = 0.233, p = 0.022$ ;  $r = 0.222, p = 0.030$ , respectively).

The physicians sample showed a more positive attitude than clients concerning quality of their service, and they

reported the highest scores for most items except architectural barriers and telephone availability for urgent needs. Given the paucity of participants, comparisons between GrP and SP are impossible. Comparisons through Mann-Whitney test between the opinions expressed by patients and those expressed by physicians the for each item of PAT-MED showed significant differences for most of items (3, 4, 5, 6, 9, 10, 13, 14, 15 and 17).

Initially, the factorability of the 18 PAT-MED items was examined. Several well-recognised criteria for the factorability of a correlation were used. Firstly, 16 of the 18 items correlated at least .3 without least one other item, suggesting reasonable factorability. Second, the Kaiser-Meyers-Olkin measure of sampling adequacy was  $KMO = .857$ , above the recommended value of .6, and Bartlett's test of sphericity was significant ( $X^2 = 802.33, p < 0.0001$ ) indicating that the matrix of data is adequate for a factorial analysis. Given these overall indicators, factor analysis was conducted with all 18 items to probe the construct validity of the PAT-MED questionnaire. The Principal Component Analysis method for factors extraction was used because the primary purpose was to identify and compute composite satisfaction scores for the factors underlying PAT-MED questionnaire. Varimax rotation method with Kaiser normalization was also used. Cronbach's alpha coefficient was employed to estimate internal consistency reliability.

The Intraclass Correlation Coefficients (ICC) of the instrument was measured with Cronbach's alpha, both the total for all four domains identified.

**Table 3.** Reliability for PAT-MED dimensions.

PAT-MED Questionnaire	Cronbach Alpha Value
<b>Sub construct 1:</b> <i>Empathic and professional abilities</i>	.726
<b>Sub construct 2:</b> <i>Accessibility and needs satisfaction</i>	.759
<b>Sub construct 3:</b> <i>Doctor availability and confidence</i>	.343
<b>Sub construct 4:</b> <i>Informations sharing with other doctors</i>	.688

It was suggested to characterize levels of reliability as follows: 0 - 0.4 poor, 0.41- 0.74 from sufficient to good, excellent 0.75-1. In order to evaluate the reliability we computed the Cronbach coefficient over and over time removing a different item from the set. The index of internal consistency for the scale was  $\alpha = .886$ , that was great, as resulted for all domains ( $\alpha = .726$ ;  $\alpha = .759$ ;  $\alpha = .688$ , respectively for the domain 1, 2 and 4) with the exception of the domain 3 which showed (see Table 3) a low internal consistency ( $\alpha = .343$ ). Performing the analysis for each item (see Table 4), a very high score indicated item 11 was poor repre-

sentative for the purposes of the questionnaire.

The item 11 was eliminated because it do not contributed to a factor structure and failed to meet a minimum criteria of having a primary factor loading of .4 or above and no cross-loading of .3 or above. The solution which indicated the four factors explained 64.56% of the common variance was preferred for the "leveling off" of eigen values on the scree plot after three factors and the insufficient number of primary loadings and difficulty of interpreting the five factors.

The values for each factor were of  $X^2 = 20.032$  for Factor 1 (called "Empathic and professional abilities" that includes the

item 15, 7b, 4, 6 and 16), of  $X^2 = 18.481$  for Factor 2 (called "Accessibility and needs satisfaction," which includes items 3, 1, 10, 8 and 9),  $X^2 = 16.767$  for Factor 3 (called "Availability and confidence", which includes items 14, 12, 2, 17 and 7a) and  $X^2 = 9.288$  for Factor 4 (called "Sharing", which includes item 13 and 5). The factor loading matrix for this final solution is presented in Table 5.

Based on item content, the proposed label for factor 1, with five defining items, was *Empathic and professional abilities*. The highest loading item was "Ability to reassure patients ( $L = .842$ ), with "Physician ability to listen/understand problems", "Competence in giving reliable informations", "Information on medication prescriptions", and "Physician confidence in his/her own abilities" also high ( $Ls > .62$ ). Factor 2, also with five defining items appeared to constitute a *Accessibility and*

*needs satisfaction* factor; the highest loading item was "Confidentiality" ( $L = .757$ ) with (in descending order of centrality) "Appearance, comfort and physical layout," "Adequacy of the working hours" and "Appropriateness of care" ( $Ls .725-.598$ ). Based on item content, Factor 3, with 5 included items, was called *Doctor availability and confidence*. The highest loading item was "Confidence in physicians" ( $L = .801$ ) with "Telephone availability for urgent needs" ( $L = .737$ ) and "Clarity of informations" ( $L = .722$ ) also very central. Other items were "Overall satisfaction" and "Front office ability to listen/understand problems" following ( $Ls .592-.497$ ). The fourth factor called *Informations sharing with other doctors/specialists* was made up of two items with high loadings: "Informations sharing with other colleagues," and the "Sharing in treatment decisions" ( $Ls > .650$ ).

**Table 4.** Variation of the Cronbach Alpha Values if the Item n. 11 of PAT-MED questionnaire was deleted.

PAT-MED items	Corrected Item-Total Correlation	Cronbach Alpha Value
1. Appearance, comfort and physical layout	.524	.880
2. Clarity of informations	.503	.880
3. Confidentiality	.681	.874
4. Reliable informations	.667	.875
5. Sharing in treatment decisions	.528	.879
6. Information on medication prescriptions	.547	.879
7a Front office ability to listen/understand problems	.667	.874
7b Physician ability to listen/understand problems	.620	.876
8. Staff confidentiality	.573	.878
9. Appropriateness of care	.694	.874
10. Adequacy of the working hours	.562	.878
11. Architectural barriers	-.057	.902
12. Telephone availability for urgent needs	.677	.874
13. Informations sharing with other colleagues	.230	.894
14. Confidence in physicians	.442	.882
15. Ability to reassure patients	.527	.880
16. Physician confidence in his/her own abilities	.609	.876
17. Overall satisfaction	.652	.875

**Table 5.** Factor loadings and communalities based on a principle components analysis with varimax rotation for 17 items from the PAT-MED Questionnaire.

	Components			
	Empaty	Accessibility	Confidence	Information
Q15 Ability to reassure patients	.842			
Q7 B Physician ability to listen/understand problems	.726			.306
Q4 Realible informations	.643	.415	.236	
Q6 Information on medication prescriptions	.628	.215		
Q16 Physician confidence in his/her own abilities	.616	.435	.239	
Q3 Confidentiality	.208	.757	.309	
Q1 Appearance, comfort and physical layout		.725		
Q10 Adequacy of the working hours	.322	.681		
Q9 Appropriateness of care	.546	.598	.220	
Q8 Staff confidentiality		.572	.406	.249
Q14 Confidence in physicians			.801	
Q12 Telephone availability for urgent needs	.309	.247	.737	
Q2 Clarity of informations		.416	.722	
Q17 Overall satisfaction	.412	.248	.592	
Q7 A Front office ability to listen/understand problems	.323	.321	.497	.388
Q13 Informations sharing with other colleagues				.828
Q5 Sharing in treatment decisions	.299		.233	.650

Note - Extraction Method: Principal Component Analysis.  
 Rotation Method: Varimax with Kaiser Normalization.

Concurrent validity of PAT-MED questionnaire was examined via correlations between indicators and corresponding EUROPEP dimensions using the Pearson correlation coefficient. The correlation between the PAT-MED and the subscale "Clinical behavior" of EUROPEP was  $r = 0.595$ , ( $p \leq 0.001$ )

while the correlation with the subscale "Organization" was  $r = 0.642$  ( $p \leq .001$ ). These correlations suggested a good convergent validity. The Mann-Whitney test indicated that self-rated score for each factor not differed for GrP or SP participants.

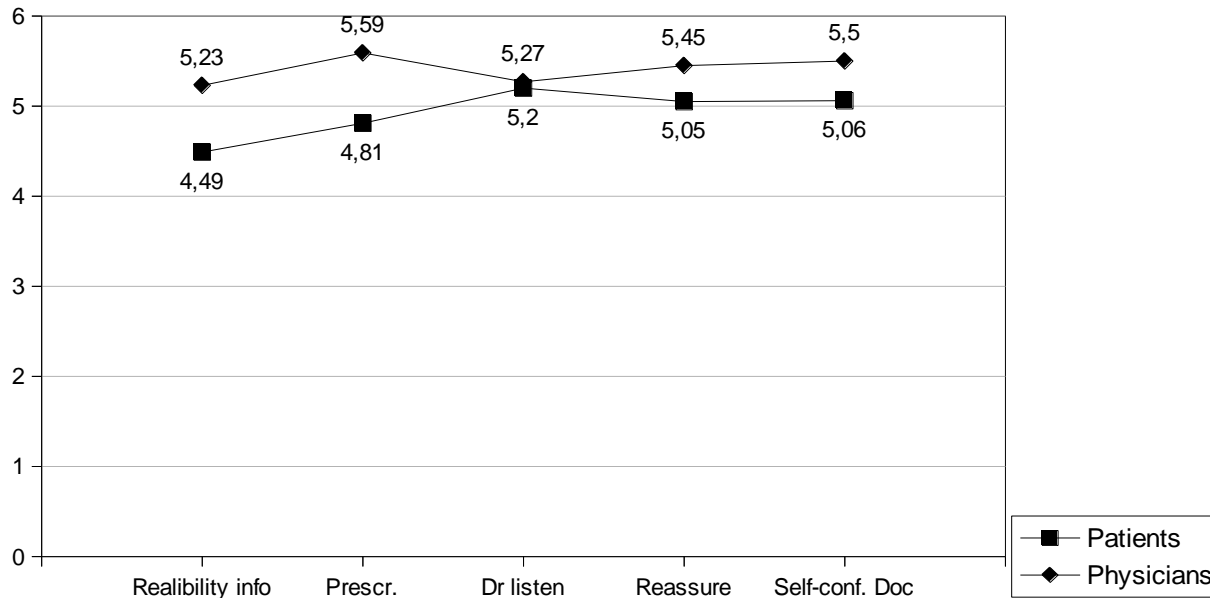


Figure 1. Response patters of Patients and Physicians for *Empathic and professional abilities* dimension.

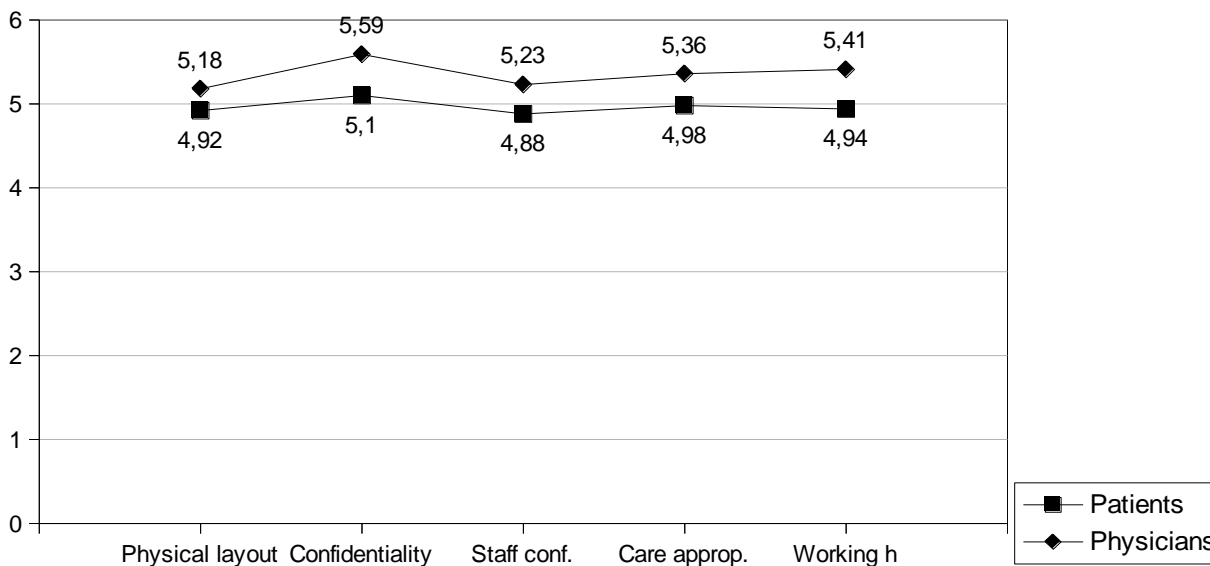
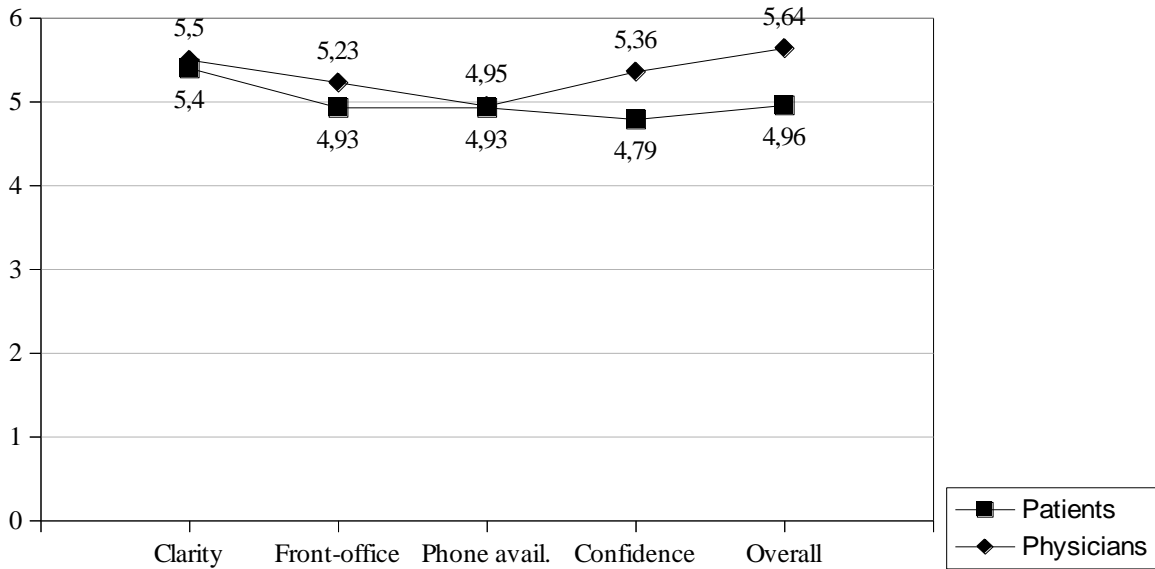
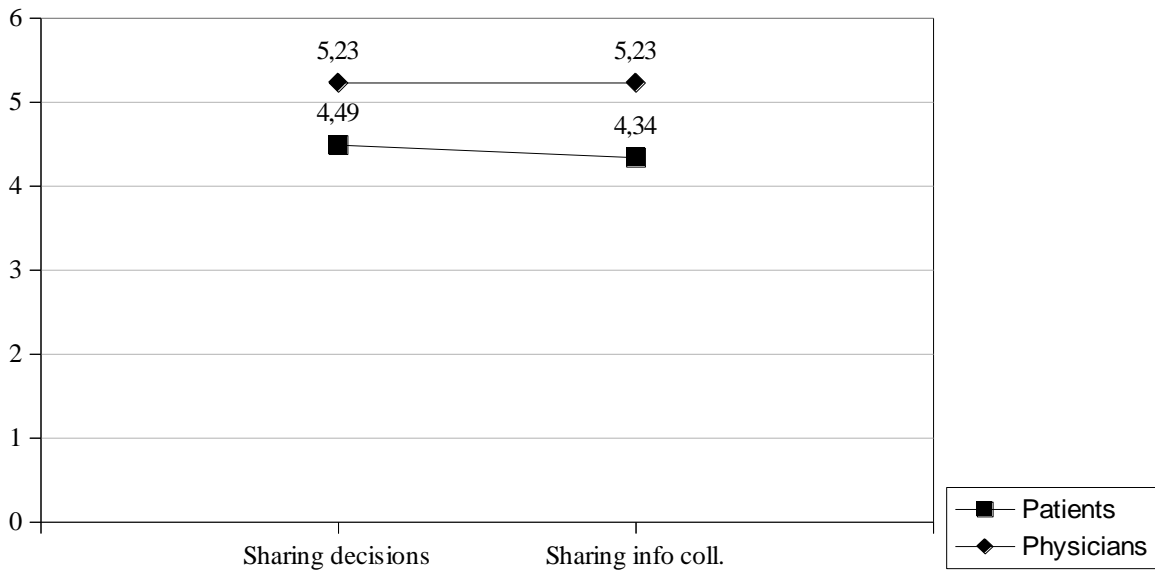


Figure 2. Response patters of Patients and Physicians for *Accessibility and needs satisfaction* dimension.



**Figure 3.** Response patters of Patients and Physicians for Doctor availability and confidence dimension.



**Figure 4.** Response patters of Patients and Physicians for *Informations sharing with other doctors* dimension.

In Figures 1 – 4 pattern responses for each item are represented for both patients and physicians groups separately for all the four dimensions.

A final variable considered was the knowledge of the belongings of their physician (GrP or SP): only the 62.5% of our general practioner users claim to have this information, an important fact that deserves reflection able to understand why. With regard to the analysis carried out on PAT-MED, there were no significant differences on the overall perception of quality in relation to the knowledge of organizational arrangements of the doctors, while significant differences are produced for item 3 (Mann-Whitney  $Z = 793.0, p = 0.019$ ) and item 4 (Mann-Whitney  $Z = 788.0, p = 0.014$ ). The socio-demographic variables had no effect except as regards the gender that gives rise to a significant association (chi-square =

$7.260, p = 0.007$ ). data inspection suggested that the differences lies in the female clients being less aware of belongings of her physician to a GrP or SP, unlike the male participants (22.2% vs. 77.8%). The Odds Ratio for knowledge of physician belongings for GRP/SP is 7.570 (95% CI 6.144 to 7.184). The knowledge of physician belongings do not had a role on responses of EUROPEP, in that there were no significant differences in the perception of service quality among people who have or do not have awareness.

#### 4. Conclusions

The present study examined the effect of collaborative organizational models on client and physicians satisfaction. Patient satisfaction cannot be ignored when modeling the



relationship between physician characteristics and indicators of good management of general medicine because they affect the behavior of the physician significantly. Our findings do not suggest that organizational models are significantly associated with better clients or physicians satisfaction. The lack of differences between the clients which belong to a service group medicine and clients that pertain to a single physician may be attributed to the confident relationship established with own doctor which is based more on personal characteristics and not on organization characteristics. A second explanation, related to the lack of awareness that users have of the primary care, could be attributed to a collaborative arrangements still in progress, perhaps limited to sharing the physical layout but not the management. Furthermore, female users appear to be paying particular attention to some dimensions of quality such but, generally, all patients consider relevant aspects inherent in the quality of relationship with the doctor and his/her staff, in particular in term of responsiveness, assurance and empathy. The ultimate goal of every intervention is to improve the health and quality of life of patients or to maintain high standards of quality at lower costs. Correlations between some PAT-MED and EUROPEP items suggest that some quality dimensions acquired value with age.

In the current study participation rate was relatively high for clients (above 95%) but not for physicians (only about 10%), so it should be pointed out that we predominantly emphasise the customer's point of view. An approach based on both customers and providers offers a much more complete picture of health care quality than simply measuring client satisfaction. Sometimes the perceptions of different actors are different or even collide. For instance, doctors' expectations are different from those of patients for some quality dimensions. Consistent with these principles, it is important have a mixture of items appropriate for measuring quality perceptions in both customer and doctors. Despite some limitations, the metric properties of the PAT-MED instrument are sound, the assessment is valid and reliable and the approach is promising. Future research will examine the resolution of the PAT-MED. Further studies on the reasons for doctor refusal are needed, but experience with interviewed subjects makes clear that intensive study of satisfaction can achieve collaboration. Our data represent a snapshot of patients' experiences, and it will be critical to understand the ways in which these scores change over time and the factors that underlie their improvement. The Emilia Romagna Regional Government has invested significant resources and institutional energy in fostering organizational arrangements as one of the cornerstones for the development of an effective primary care system. Lastly, our study argues for a weak appreciation of the role of the organizational context. Although our evidence is not conclusive, it suggests that despite a strong political commitment, economic incentives, and a mandatory membership by GrP, they do not have a specific link with clinical practice. Connections occurring in group practice, that is case review meetings, shared medical records, and clinical pathways are

not necessarily sufficient to constitute a platform for collaboration between GPs and other primary care professionals. In conclusion, the present study shows that GP collaborative organizational arrangements, such as group practices, do not favor the good management of primary care. These findings are consistent with other authors who studied participation of GPs in associations, networks, or group practices in Italy (Fattore & Salvatore, 2010; Fattore et al., 2009). Moreover, our findings suggest that organizational solutions need to be tailored to the specific needs and characteristics of patients.

Therefore, nonstatistically significant correlations between collaborative organizational arrangements and this finding might depend, in part, on the sample size of physicians. The findings of the study should be interpreted in light of the study design. Firstly, the study included a selected sample of 22 participants in the city of Parma and, while the medical facilities ranged in geographical region, size, and performance, additional themes might have been apparent in other samples of ambulatory setting. In light of this limitation, conducting a larger study including data from the whole region would allow testing further the conclusions of this investigation. A suggestion of our research is devising future collaborative organizational arrangements in primary care that pay particular attention to training in communication skills and promote solutions that foster the alliance between patients and health care professionals. Creating useful subscales to assess discriminably different dimensions of service perception of quality, though population and setting factors may limit the 'portability' of such indices. More research on the variations in population, culture and organizational setting is clearly indicated before the limits to generalizability of such subscales can be better understood.

## Acknowledgements

We are grateful to Dr. Annalisa Oppo for her collaboration in data analysis as well as the participating medical sites and staff.

## References

- Butzlaff, M., Kempkens, D., Schnee, M., Dieterle, W.E., Bücken, J. & Rieger, M. (2006). German ambulatory care physicians' perspectives on clinical guidelines – a national survey. *BMC Family Practice* 2006, 7-47. Doi:10.1186/1471-2296-7-47.
- Chou, A. F., Vaughn, T. E., McCoy, K. D., & Doebbeling, B. N. (2011). Implementation of evidence-based practices: Applying a goal commitment framework. *Health Care Management Review*, 36, 4-17.
- Coluccia, A., Cioffi, R., Ferretti, F., Lorini, F., & Vidotto, G. (2006). Questionario di Qualità Percepita (QQP): uno studio sulle differenze di genere. *Giornale Italiano di Medicina del Lavoro ed Ergonomia*, 28, 53-60.
- Colombo, M.M., et al. (2009). Customer satisfaction as a quality factor in geriatric rehabilitation *The Open Geriatric Medicine Journal*, 2, 1-4.
- de Jong, J. D., Groenewegen, P. P., & Westert, G. P. (2003). Mutual influences of general practitioners in partnerships. *Social Science & Medicine*, 57, 1515-1524.
- Deom, M., Agoritsas, T., Bovier, P.A., & Perneger, T.V. (2010). What doctors think about the impact of managed care tools on quality of care, costs,

- autonomy, and relations with patients. *BMC Health Services Research*, 10:331 <http://www.biomedcentral.com/1472-6963/10/331>.
- Eiriz, V. & Figueiredo, J.A. (2005). Quality evaluation in health care services based on customer-provider relationships *International Journal of Health Care Quality Assurance*, 18, 404-412. doi: 10.1108/09526860510619408
- Fattore, G., & Salvatore, D. (2010). Network organizations of general practitioners: Antecedents of formation and consequences of participation. *BMC Health Services Research*, 10, 118.
- Fattore, G., Frosini, F., Salvatore, D., & Tozzi, V. (2009). Social network analysis in primary care: The impact of interactions on prescribing behavior. *Health Policy*, 92, 141-148.
- Graugaard, P.K., Eide, H. & Arnstein, F. (2003). Interaction analysis of physician-patient communication: The influence of trait anxiety on communication and outcome, *Patient Education and Counseling*, 49, 149-56.
- Haggerty, J. L., Reid, R. J., Freeman, G. K., Starfield, B. H., Adair, C. E., & McKendry, R. (2003). Continuity of care: A multidisciplinary review. *British Medical Journal*, 327, 1219-1221.
- Hippisley-Cox, J., Pringle, M., Coupland, C., Hammersley, V., & Wilson, A. (2001). Do single handed practices offer poorer care? Cross sectional survey of processes and outcomes. *British Medical Journal*, 323, 320-323.
- Jommi, C., Cantu, E., & Anessi-Pessina, E. (2001). New funding arrangements in the Italian National Health Service. *International Journal of Health Planning and Management*, 16, 347-368.
- Landon, B.E., Gill, J. M., Antonelli, R.C., & Rich, E. C. (2010). Prospects for rebuilding primary care using the patient centered medical home. *Health Affairs*, 29, 827-834.
- Lo Scalzo, A., Donatini, A., Orzella, L., Chicchetti, A., Profili, S., & Maresso, A. (2009). Italy: Health system review. *Health Systems in Transition*, 11, 1-216.
- Landis, J.R. & Koch, G.G. (1977). The measurement of observer agreement for categorical data *Biometrics*, 33, 159-174.
- Maxwell, R. (1984). Quality assessment in health. *British Medical Journal*, 288, 1470-1472.
- Mehrotra, A., Epstein, A. M., & Rosenthal, M. B. (2006). Do integrated medical groups provide higher-quality medical care than individual practice associations? *Annals of Internal Medicine*, 145, 826-833.
- Milano, M. et. al. (2007). Validation of the Italian version of the patient evaluation of general practice EUROPEP instrument for care. *The European Journal of General Practice*, 13, 92-94.
- Mowatt, G., Grimshaw, J.M., Davis, D., et al. (2001). Getting evidence into practice: The work of the Cochrane Effective Practice and Organisation of Care Group (EPOC). *Journal of Continuous Education in Health Professions*, 21, 55-60.
- Parasuraman, A., Zeithaml, V. & Berry, L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perception of service quality. *Journal of Retailing*, 64, 12-40.
- Pino, O., & Rossini, G. (2012). Perceived organizational stressors and interpersonal relationships as predictors of job satisfaction and well-being among hospital nurses. *International Journal of Psychology and Behavioral Sciences*, 2, 196-207. doi: 10.5923/j.ijpbs.20120206.02
- Rico, A., Saltman, R.B., & Boerma, W.G.W. (2004). Organizational restructuring in European health system: The role of primary care. *Social Policy and Administration*, 37, 592-608.
- Roland, M. (2001). Choosing effective strategies for quality improvement. *Quality in Health Care*, 10, 66-8.
- Sage, G.C. (1991). Customers and the NHS. *International Journal of Health Quality Assurance*, 4, 3, 23-34.
- Singh, J. (1990). A multifaceted typology of patient satisfaction with a hospital. *Journal of Health Care Marketing*, 10, 8-21.
- Vendramini, E., & Lega, F. (2008). Budgeting and performance management in the Italian National Health System: Assessment and constructive criticism. *Journal of Health Organization and Management*, 22, 11-22.
- Ware, J., Davies-Avery, A. & Stewart, A. (1978). The measurement and meaning of patient satisfaction. *Health and Medical Care Services Review*, 1, 2-15.
- Wensing, M., Baker, R., Szecsenyi, J., Grol, R., EUROPEP Group (2004). Impact of national health care systems on patient evaluations of general practice in Europe. *Health Policy*, 68, 353-357.