

Postprint Version	1.0
Journal website	http://www.journals.elsevierhealth.com/periodicals/heap/article/S0168-8510%2897%2900071-7/abstract
Pubmed link	http://www.ncbi.nlm.nih.gov/pubmed/10176304
DOI	10.1016/S0168-8510(97)00071-7

This is a NIVEL certified Post Print, more info at <http://www.nivel.eu>

Quality systems in Dutch health care institutions

ANTON F. CASPARIE ^A, EMMY M. SLUIJS ^B, CORDULA WAGNER ^B, DINNY H. DE BAKKER ^B

^A Department of Health Policy and Management, Erasmus University, Rotterdam, The Netherlands

^B NIVEL, Netherlands Institute of Primary Health Care, P.O. Box 1568, 3500 BN Utrecht, The Netherlands

ABSTRACT

The implementation of quality systems in Dutch health care was supervised by a national committee during 1990-1995. To monitor the progress of implementation a large survey was conducted in the beginning of 1995. The survey enclosed all subsectors in health care. A postal questionnaire-derived from the European Quality Award-was sent to 1594 health care institutions; the response was 74%). The results showed that in 13%) of the institutions a coherent quality system had been implemented. These institutions reported, among other effects, an increase in staff effort and job satisfaction despite the increased workload; 59%) of the institutions had implemented parts of a quality system. It appeared that management pay more attention to human resource management compared to documentation of the quality system. The medical staff pay relatively more attention to protocol development than to quality-assurance procedures. Patients were hardly involved in these quality activities. The research has shown that it is possible to monitor the progress of implementation of quality systems on a national level in all subsectors of health care. The results play an important role in the discussions and policy on quality assurance in health care.

INTRODUCTION

In 1990 the Dutch organisations for health care providers, patients and insurance companies reached agreement about a coherent, joint policy on the quality of care [1]. This policy was deemed necessary because of government plans to make the Dutch health care system more market-oriented and self-regulated, which in turn meant that the quality of care had to be assured in a system with less government regulation. One aspect agreed upon by the health care partners was the need for quality systems in health care institutions. These systems were to be introduced and implemented in all health care institutions within 5 years and were to be accessible to external audit. A national committee made up of representatives of all parties involved supervised implementation of these systems and counselled the government about health care policy.

Under the auspices of this committee three surveys were held by the Netherlands Institute

of Primary Health Care (NIVEL). The first survey showed that in 1992 nearly all national associations of health care providers were formulating criteria for the quality of care in their sector [2]. The second survey was held in 1994 among 36 health care institutions. This survey profoundly focused on factors that promoted or obstructed the implementation of quality systems by in-depth interviews with the management [3]. Positive factors were the perceived effects of the quality system, involvement of all employees in quality activities, and management-guided monitoring of progress. Negative factors were the longer than expected time taken to implement the system, a heavy workload, the autonomy of health care staff, and the lack of cooperation between (hospital) departments [3]. The third survey was held among all Dutch health care institutions in the beginning of 1995. Its aim was to assess the stage of development of quality systems on a national basis. Preliminary data have been published in a research report [4].

To our knowledge, this is the first time such a survey has been conducted among all health care sectors. A small-scale study with a broader scope was reported by Shortell et al. in 1995 [5]. They assessed whether a total quality management approach had an impact on quality improvement activities in 61 hospitals in the USA. Implementation of quality improvement activities was assessed by using a questionnaire based on the Malcolm Baldrige National Quality Award Criteria, which is comparable to the European Quality Award [6,7]. Shortell et al. found a relationship between the implementation of quality improvement activities and the perceived impact on patient outcomes (patient satisfaction) and staff satisfaction. Klazinga [8] evaluated a Concerted Action Programme on Quality Assurance, also in hospitals, in 15 European countries. Large differences between the countries were found. Although many effects were reported, he concluded that the time span of the project (3 years) was too short to reach its full potential. Implementation of quality assurance requires much more time.

Monitoring the development of quality systems at a national level requires the development of a questionnaire that is applicable to all subsectors of health care. We developed such a questionnaire that was designed to provide answers to the following questions: Which activities have been undertaken by health care institutions to manage and improve the quality of care? How many institutions have completed a quality system and at what stage of development are the remaining systems? And, finally, what are the perceived effects of the quality systems? The progress of implementation should indicate the feasibility of self-regulation in health care.

2. METHODS

2.1. Study area

The data used in the analyses were derived from a large nationwide study of 15 different subsectors of the Dutch health care system. For 13 of these subsectors, all health care institutions that were registered as a member of the relevant national associations were sent a postal questionnaire. For two remaining subsectors, we drew a random sample of 157 homes for the elderly (= 10%) and a random sample of 159 nursing homes (= 50%). A total of 1594 institutions was approached: 315 institutions for primary health care, 372 institutions for disabled people, 248 institutions for mental health care, 316 institutions for the elderly, 143 hospitals, and 200 welfare institutions. The questionnaire was sent to the management of the institutions with a letter of recommendation from the national associations.

2.2. Questionnaire

The final questionnaire contained 62 items that assessed the development of quality systems. The questionnaire was based on the Dutch translation of the European Quality

Award [7,9]. This model, which was developed for industrial companies, distinguishes nine focal areas, divided into five 'enabler' and four 'result' areas, and different stages of development of a quality system. The areas of this model were operationalised for the questionnaire. This was in itself difficult because the concept 'quality system' is diffuse and encompasses a variety of quality-related activities. Additional questions about specific health care activities were also included: for example, peer review by health care staff, and items about patient participation because this is a highly valued aspect of the Dutch health care system. The questions were formulated so as to avoid socially desirable answers. For this reason the items focused as much as possible on clearly defined documents (a written quality policy, quality action plans, protocols and guidelines, a quality manual, a complaints registration, etc.) and procedures (peer review, audits, job assessment and exit interviews, needs surveys, satisfaction surveys, etc.). There were also questions about the perceived effects of the quality system on patient and employee satisfaction and on costs.

The questionnaire had a closed, Likert-type format with three or four ordinal scaled options per item and some nominal scaled questions. The draft version of the questionnaire was modified according to the comments of the national associations of providers. The pilot version was completed by the management of 14 institutions and further minor changes were made. This was the final version.

2.3. Non-response und validation study

A non-response analysis was conducted by telephone interview. For this analysis we selected 106 institutions from three health care subsectors with a relatively low response (institutions for the elderly, for the disabled and for the mentally ill) (see Table 1). Comparison between respondents and non-respondents revealed that the respondents were more likely to have a quality coordinator (40% vs. 2%) and a quality policy (21% vs. 16%) than the non-respondents. The results indicated that the non-respondents had probably developed fewer quality initiatives than the respondents. In a separate validation study [10] a small sample of respondents was asked (in-depth telephone interviews) whether the real situation differed from the answers given in the questionnaire. It appeared that the respondents sometimes had a different interpretation of questions regarding management information systems and audits. As a consequence there was over- and under-reporting of activities in these areas.

2.4. Analysis

A factor analysis was performed (oblique rotation) to structure the answers to the 62 items. This factor analysis revealed five factors which represent five focal areas of a quality system, namely: (1) quality policy documents; (2) human resource management; (3) protocols and guidelines; (4) quality improvement procedures; and (5) patient involvement. The items within each of these focal areas are described (in keywords) in Table 2. Cronbach coefficient alpha was used to test the reliability of the scales. For four scales the coefficient alpha was 2 0.75; quality improvement procedures had an alpha of 0.71.

We defined four stages of development in order to assess the progress made with quality systems [9,11,12]. These stages were:

- Stage 0 orientation: actual quality activities have not yet been undertaken.
- Stage 1 preparation: creating conditions by developing a quality policy, setting up steering groups and training.
- Stage 2 implementation: implementation of various quality improvement projects.
- Stage 3 establishment: quality procedures have been developed and integrated into all areas of activity within the institution.

These stages were constructed on theoretical grounds by using a weighted sum score of the items (for details see [4]). This classification of the stages of development was reviewed and approved by six experts from the supervisory committee.

Pearson's correlation coefficients were used to determine the correlations between the stages of development of the five focal areas.

RESULTS

The overall response was 74% (1182 of the 1594 institutions returned the questionnaire in good order; Table 1). The percentage response differed per subsector, ranging from 55% for homes for the elderly to 91% for the sheltered housing institutions. Seventy-six percent of the hospitals completed the questionnaire.

Table 2 gives an overview of the items of each focal area and the percentage of institutions that applied the procedures listed. The data show that, as regards quality systems, nearly 50% of the institutions applied procedures for human resource management and quality improvement whereas only 11% applied procedures for patient involvement (patients were seldom involved in the development of criteria or protocols). Seventy-four percent of the institutions had formulated a mission statement, the starting point of a quality policy, but fewer than 25% of the institutions had completed their quality policy and quality action plans. Very few institutions (5%) had incorporated their quality procedures into a quality manual.

Human resource management encompasses many activities. More than 50% of the institutions trained staff and management in quality management, encouraged staff to improve their professional expertise by continuing medical education, and allocated time for these activities. Less often, in about one-third of the institutions, management controlled the implementation of quality plans (39%) or staff compliance with procedures (38%). Thus the strategies used to bring about quality control were characterised by encouragement and stimulation of staff, rather than by steering and controlling activities on the part of management.

Quality policy documents and human resource management are essentially management functions, whereas the development of protocols and guidelines are more the function of health care staff. Sixty-six percent of the health care institutions had protocols or guidelines for distinct aspects of medical treatment, and about 40% had guidelines for the routing of patients from admission to discharge. In addition, 36% of the institutions had developed protocols for special circumstances.

In about 50% of the institutions staff participated in different types of peer review and in committees that assure and improve the quality of care. Nearly 30% of the institutions had implemented audits, internal as well as external. Care plan management was the rule rather than the exception.

In very few institutions patients actively participated in quality management activities, and in only 29% of the institutions were they involved in procedures for the registration of patients' complaints.

These differences in attention paid to the five focal areas imply that the quality systems are in a different stage of development in the different areas. Table 3 shows the stage of development for each focal area.

Nearly two-thirds of the institutions (62%) had established procedures for human resource management, whereas fewer than 20% of the institutions had reached this stage with regard to quality policy documents or patient involvement. These differences suggest that in the early stages of quality system development effort is focused on one or two areas instead of on the organisation as a whole. This assumption is confirmed by the low correlations between the stages of development in the five focal areas (Table 4).

The correlations between the stages of development of quality management in the five focal areas were statistically significant, but rather weak. In particular, the stage of development of human resource management (management responsibility) was hardly

correlated ($r = 0.15$) with the stage of development of protocols and guidelines (staff responsibility). We determined the stage of development of the total quality system by summing the scores for the five focal areas. In only 13% of the institutions were the procedures established: i.e. the quality activities for the five focal areas were integrated into daily managerial, medical, and other routines (Stage 3). The majority (59%) of the institutions were still in the process of implementing their quality projects and procedures (Stage 2). A quarter (26%) of the institutions were still in the preparatory phase: i.e. they were creating conditions for quality management (training, steering groups, developing a quality policy, etc.) (Stage 1). A minority (2%) of the institutions were still in the orientation phase: i.e. no activities related to quality control had yet been taken (Stage 0).

Although there were inter-sector differences in the implementation of the different types of quality management, only 5% of the total variation in stage of development could be explained by differences between subsectors (data not shown). The differences within subsectors appear to be greater than the differences between subsectors. Within subsectors, some of the differences in procedure development could be explained by the institutional culture: more progress was found in institutions that traditionally worked with guidelines and in institutions with an innovative culture (open to change).

The perceived effects of quality systems are shown for institutions with an established quality system (Stage 3) and for institutions in the process of developing such a system (Stages 0-2) in Table 5. Forty percent of the institutions with a quality system reported that quality systems improved the image of the institution and 38% reported that such systems increased patient-centredness. In the other institutions, these percentages were 14 and 18, respectively. Despite the increased workload, 42% of the institutions reported that quality systems increased employee satisfaction and effort. Four percent of the institutions reported that quality management had reduced costs, whereas 50% did not think that quality management would save money, and 19% even thought that such systems would increase costs.

[TABLE 1]

[TABLE 2]

[TABLE 3]

[TABLE 4]

[TABLE 5]

4. DISCUSSION AND CONCLUSIONS

This research has shown that it is possible to assess the stage of development of quality systems in all subsectors of health care. The impact of the results on health care policy will be discussed. But first, we consider the main findings of the survey and some limitations of the research methods.

The main conclusion of this study is that, although health care institutions are working on the introduction of quality systems and quality management, only 13% have a coherent, complete system in place. Some managers estimated that it will take between 5 and 10 years to implement a quality system [3]. We conclude that managers are willing to implement quality systems, but more time is needed.

There appear to be different ways to implement quality systems in health care institutions,

which are partly determined by local, historical factors. Some institutions put emphasis on the development of protocols and guidelines, while others emphasise quality improvement procedures, such as measuring patient satisfaction.

In this respect, it was remarkable that there were no statistically significant differences between the various health care subsectors whereas there were large differences within the same sector. This can be partly explained by the difference in culture between institutions, which is consistent with the findings of Shortell et al. [51].

It was striking that there was hardly any relation between management activities to improve quality and those of other health care staff. Yet the development of a coherent quality system requires a close cooperation between both parties involved [13]. Results showed that management pays more attention to human resources than to documentation of a quality system. For example, most institutions trained medical and managerial staff in quality management. In this respect it should be noted that human resource management is not a new phenomenon, which may explain why this aspect had been developed the most. Staff pay relatively more attention to the development of protocols and guidelines than to quality improvement procedures. Further development of both areas is needed, especially the development of protocols for risk management and peer review and audit.

There is little evidence that patients actively participate in quality management activities, even though this is, in theory, a highly valued aspect of the Dutch health care system. While most of the institutions registered patients' complaints, as required by law, patients were hardly involved in the development of norms and criteria, and their participation in committees or quality projects was exceptional.

The institutions with a well-developed quality system reported an increase in staff effort and job satisfaction despite the increased workload such a system entails. Apparently, quality management requires a greater diversity of activities but these activities provide greater satisfaction. In general terms, the better established a quality system was, the more positive effects were reported. Until now, quality management has not saved money, and in fact 19% of all institutions reported that extra funds would be needed to start quality management procedures. However, it should be remembered that the first objective of quality systems is to improve the quality of care and not to save money.

Some comments should be made about the psychometric characteristics of the questionnaire used. A quantitative method was needed for the large amount of data we anticipated gathering, and because there was no appropriate validated instrument, we developed our own questionnaire. We used the same conceptual model as starting point as Shortell et al. [5]. We paid much attention to the validity of the questionnaire, and questions were formulated with the help of researchers and experts from the supervising committee. If respondents interpreted a question incorrectly, the criterion validity of the questionnaire would have been jeopardised.

We included specific health care activities to increase the content validity of the questionnaire. However, despite these efforts there was both over- and under-reporting in some areas, but this did not seem to have influenced the aggregated data.

The results of the telephone interviews showed that there was not a large systematic problem. In the next survey, more attention should be paid to the formulation of the questions.

The questionnaire was completed by the management of the health care institutions because management is responsible for quality control and should have a general overview of activities. Although the questionnaire was anonymous, some managers might have given a rather optimistic view of the situation; however, this was not borne out by the results of the telephone interview. The response rate (74%) was high for this type of postal questionnaire. The institutions that did not respond seemed to have developed fewer quality initiatives than the other institutions, especially with regard to the formulation of a quality policy and the presence of quality coordination. Thus although the results were skewed in favour of their being such initiatives, the high response means that the data can be considered representative

for the whole health care sector.

The implications for health care policy can be summarised as follows. The implementation of quality systems was stimulated by the development of a Quality of Health Care Institutions Act, by which all institutions are obliged to develop quality systems. The Act was passed on 1 April 1996, after the results of this survey were discussed at the national level. Because the results were in line with the Act's intentions towards self-regulation, the Act passed without modifications.

As yet it is unclear whether or not the quality systems will actually contribute to self-regulation in health care, as was intended in the agreements of 1990 and 1995 and as promulgated by government policy, because the majority of these systems are in an early stage of development. Presumably the situation will be clearer in 2000, when the agreements and progress will be evaluated.

As yet it is unclear whether or not the quality systems will actually contribute to self-regulation in health care, as was intended in the agreements of 1990 and 1995 and as promulgated by government policy, because the majority of these systems are in an early stage of development. Presumably the situation will be clearer in 2000, when the agreements and progress will be evaluated.

The results of this survey have played an important role in the 1995 national conference on 'Policy on Quality of Care'. On the basis of the results, the organisations for health care providers, patients and insurance companies evaluated their 1990 agreements about their joint health care policy. The agreements were reconfirmed and could be refined. The findings revealed which aspects of quality system procedures need more attention and further initiatives. Accordingly, new agreements were made concerning integration of the quality systems of institutions and professional societies, integration of the quality systems between subsectors and, harmonising the external review by patients with the quality systems of the institution. Additionally, it was agreed that more time and additional financial support was necessary to develop and implement quality systems. The progress will be evaluated again in the year 2000.

At the institutional level, it may be assumed that the results have contributed to the further implementation of the quality systems. We sent an individual feedback report to each of the 1182 respondents. Each institution received a description of their position compared to the state of affairs in their subsector. This feedback was highly valued by the respondents. We know that the feedback has guided further activities in at least some institutions, as was written in their annual quality report.

This survey has provided data for the further evaluation of the development of quality systems in health care institutions. The data can be used to evaluate the implementation of the recent law on quality in health care institutions and, finally, to evaluate the progress of self-regulation in health care.

REFERENCES

- [1] Casparie AF. View from the Netherlands. *Quality in Health Care* 1993;2:138-41.
- [2] Sluijs EM, de Bakker DH. *Kwaliteitssystemen in ontwikkeling (The development of quality systems in health care)*. Utrecht/Zoetermeer: NIVELINRV, 1992.
- [3] Sluijs EM, de Bakker DH, Dronkers J. *Kwaliteitssystemen in uitvoering (The implementation of quality systems in Dutch health care)*. Utrecht/Zoetermeer: NIVELINRV, 1994.
- [4] Wagner C, de Bakker DH, Sluijs EM. *Kwaliteitssystemen in instellingen: de stand van zaken in 1995 (Quality systems in Dutch Health Care institutions: the state of the art in 1995)*. Utrecht/ Zoetermeer: NIVEL/NRV, 1995.
- [5] Shortell SM, O'Brien JL, Carman JM, Foster RW, Hughes EFX, Boerstler H, O'Connor EJ. Assessing the impact of continuous quality improvement/total quality management:

- concept versus implementation. *Health Services Research* 1995;30:377-401.
- [6] Hertz HS, Reinmann CW, Bostwick MC. The Malcolm Baldrige National Quality Award concept: could it help stimulate or accelerate health care quality improvement. *Quality Management in Health Care* 1994;4:63-72.
- [7] EFQM. The European Quality Award 1992. Brussels: European Foundation for Quality Management, 1992.
- [8] Klazinga N. Concerted Action Programme on Quality Assurance in Hospitals 1990-1993 (COMAC/ HSR/QA). Global results of the evaluation. *International Journal for Quality in Health Care* 1994;6:219-30.
- [9] Hardjono TW, Hess FW. De Nederlands Kwaliteitsprijs en Onderscheiding (The National Dutch Quality Award). Deventer: Kluwer, Kwaliteitskunde, 1993.
- [10] Miltenburg I. Onderzoek naar de betrouwbaarheid en validiteit van een vraag over activiteiten van kwaliteitsbewaking en -bevordering (Reliability and validity of items about quality-assurance and quality-improvement in a questionnaire). Utrecht: Universiteit van Utrecht, 1995.
- [11] Crosby PB. *Quality Is Free: The Art of Making Quality Certain*. New York: McGraw-Hill, 1997.
- [12] Hage J, Aiken M. *Social Change in Complex Organizations*. Alphen aan den Rijn: Samson, 1980.
- [13] Wagner C, Sluijs EM, de Bakker DH. Betrokkenheid van management en professionals bij de ontwikkeling van kwaliteitssystemen in zorginstellingen (Management and medical professionals' involvement in the implementation of quality systems). *Kwaliteit en Zorg* 1996;4:102-13.

TABLES

Table 1
Overview of the number and percentage of respondents for each subsector (*N* = 1182)

Health sector	Institutions	No.	%
Primary care	Health centres (mainly curative care)	88	76
	Home care institutions	114	81
	Municipal health services (collective prevention)	45	75
Care for handicapped	Institutions for handicapped	87	68
	Care for mentally handicapped	102	75
	Care for physically handicapped	97	89
Mental health care	Psychiatric hospitals	72	73
	Sheltered housing	41	91
	Ambulant mental health care	48	84
	Addict care	30	62
Care for the elderly	Nursing homes	120	75
	Homes for the elderly	86	55
Hospital care	Hospitals	109	76
Welfare	Social work	106	67
	Sociopedagogical services	37	90
Total		1182	74

Table 2
Percentage of institutions applying quality procedures and activities listed ($N = 1182$)

Focal area	Topics	%
Quality policy documents	Mission statement	74
	Product description	36
	Quality policy	21
	Quality profile	15
	Annual quality report	12
	Quality action plan	
	for the institution	18
	for some departments	21
	for all departments	6
Quality manual	5	
Human resource management	Staff encouraged to increase expertise	70
	Staff trained in quality management	66
	Management trained in quality management	63
	Time allocated for quality activities	60
	Management explains quality requirements	59
	Training based on quality policy	44
	New staff selected on positive attitude	44
	Management monitors quality procedures	39
	Management controls compliance with quality procedures	38
	Feedback to staff about results	35
	New staff trained in quality management	16
Protocols and guidelines	For parts of medical treatment	66
	For the routing of the patient	41
	For patient information	40
	For protected or reserved procedures	40
	For potentially dangerous procedures	36
	For diagnostic related groups	36
	For medical aids	30
Quality improvement procedures	Care plan management	78
	Job assessment interviews	76
	Complaints registrations	71
	Monodisciplinary peer review	62
	Client/family council	52
	Patient satisfaction surveys	51
	Controlling committees (infections)	48
	Staff satisfaction surveys	44
	Multidisciplinary peer review	42
	Management information systems	41
	Patients' needs surveys	31
	External audits	29
	Internal audits	28
	Referrer's need surveys	28
Referrer's satisfaction surveys	20	
Patient involvement	In complaint registration	29
	In achievement of quality targets	12
	In development of criteria	7
	In quality committees	7
	In quality improvement projects	6
	In development of protocols	5

Table 3
Percentage of institutions in each developmental stage of the quality system ($N = 1182$)

Focal area	Orientation	Preparatory	Implementation	Establishment	Total
Human resource management	5	14	19	62	100
Protocols and guidelines	20	12	26	42	100
Quality improvement procedures	5	47	21	28	100
Quality policy documents	16	17	48	19	100
Patient involvement	21	41	24	14	100

Table 4
Pearson's correlation coefficients between the developmental stage of quality management in each area

	Quality policy documents	Human resource management	Protocols and guidelines	Quality improvement procedures	Patient involvement
Quality policy documents	-				
Human resource management	0.25	-			
Protocols and guidelines	0.22	0.15	-		
Quality improvement procedures	0.30	0.29	0.21	-	
Patient involvement	0.14	0.23	0.12	0.22	-

All correlations significant ($P < 0.01$).

Table 5
Percentage of institutions reporting positive effects per group

	With quality systems (Stage 3)	Without quality systems (Stages 0-2)
Patient satisfaction		
Increased client centredness	38%	18%
Increased client satisfaction	33%	15%
Employee satisfaction		
Increased employee satisfaction	31%	13%
Increased employee dedication	25%	15%
Institution		
Improved image of the institution	40%	14%
Improved manageability	26%	14%
Financing		
Cost containment	4%	4%