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Longitudinal analysis on the development of hospital quality management systems in the Netherlands

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ABSTRACT

Objective. Many changes have been initiated in the Dutch hospital sector to optimize health-care delivery: national agenda-setting, increased competition and transparency, a new system of hospital reimbursement based on diagnosis-treatment combinations, intensified monitoring of quality and a multi-layered organizational development programme based on quality improvement collaboratives. The objective is to answer the question as to whether these changes were accompanied by a further development of hospital quality management systems and to what extent did the development within the multi-layered programme hospitals differ from that in other hospitals.

Design. Longitudinal data were collected in 1995, 2000, 2005 and 2007 using a validated questionnaire. Descriptive analyses and multi-level modelling were applied to test whether: (1) quality management system development stages in hospitals differ over time, (2) development stages and trends differ between hospitals participating or not participating in the multi-layered programme and (3) hospital size has an effect on development stage.

Setting. Dutch hospital sector between 1995 and 2007.

Participants. Hospital organizations.

Intervention. Changes through time.

Main Outcome Measure. Quality management system development stage.

Results. Since 1995, hospital quality management systems have reached higher development levels. Programme participants have developed their quality management system more rapidly than have non-participants. However, this effect is confounded by hospital size.

Conclusions. Study results suggest that the combination of policy measures at macro level was accompanied by an increase in hospital size and the further development of quality management systems. Hospitals are entering the stage of systematic quality improvement.

INTRODUCTION

As in many other Western countries, the quality and safety of hospital-care delivery are high on the agenda in the Netherlands. Quality requirements for Dutch hospitals are laid down in the 1996 Care Institutions Quality Act [1]. This Act is a framework, obliging all care organizations to set up a management system that reflects a cyclic process for monitoring, evaluating and improving the quality of care. At national level, a series of policy changes was initiated, after it was concluded that the sector was lagging behind in the development of quality management systems and in the dissemination of best practices [2, 3].

Recent policy changes in the Dutch hospital sector

The recent implementation of different financial and non-financial policy measures has confronted hospitals with growing external pressure (Fig. 1). In summary, there has been an increase in managed competition and transparency. Furthermore, public actors (like the Health Care Inspectorate), patient representatives and insurance companies have been provided with instruments to monitor actively the quality and safety of care [4–8]. A particularly important financial change was the introduction of a reimbursement system based on ‘diagnosis-treatment combinations’ in 2005. The purpose of the new system was to align the incentives of medical specialists and hospitals, to reduce income differences between similar specialties and to create transparency in the relationship between output and costs [4]. A diagnosis-treatment combination consists of all diagnosis- and treatment-related costs incurred by the hospital and physicians. Physicians' fees are integrated with the reimbursement of the hospital, and fixed prices are established in advance for hospital services, based on patient diagnosis and treatment. These are paid regardless of the actual costs hospitals incur in providing these services [4]. Hospitals must negotiate with health-care insurers about the quality and price for diagnostic-treatment combinations [8].

[FIGURE 1]

One non-financial policy intervention worth mentioning was the obligation of all hospitals to have a safety management system operational by 2008 [9]. An even more comprehensive intervention was Better Faster, a national action programme based on three pillars and initiated in 2003.

The purpose of the first pillar was to create awareness and to introduce approaches from business and industry into health care. Issues of safety, logistics, accountability and innovation were prioritized.

Transparency was introduced to guide purchasing decisions and improvement efforts. The second pillar was considered an important step in generating comparative data on the quality of health care. A national set of standardized quality indicators for hospital care has been developed and maintained by the Health Care Inspectorate [5], and since 2003 annual public reports based on the collected data have been published. In addition, a national website has been launched to provide information on quality aspects of health-care delivery [10].

Between 2004 and 2008, the third pillar was put into place, and 24 hospitals joined a multi-layered programme [11] based on different quality improvement collaboratives [12–14], an internal programme structure and a leadership programme for hospital executives. This ‘multi-level quality collaborative’ (Box 1) aimed to enhance the quality of hospital care and to stimulate performance management. Continuous quality improvement at department and

organization level should lead to an accelerated development of quality management systems [2, 11].

[BOX 1]

Research objective

The objective of this study is to determine whether the mix of recent policy changes has been accompanied by a further development in quality management systems and to ascertain whether the development within multi-level quality collaborative hospitals differs from that in other hospitals.

METHODS

Measurement instrument

In previous studies, an instrument was developed and validated that enables determination of the development stage of a health-care organization's quality management system [15–20]. The instrument was designed in three steps to measure development stages across health-care settings in a nationwide enquiry. First, the validity of the instrument was tested in a separate study [21]. Second, the number of variables was reduced by exploratory factor analysis and a multi-group confirmatory factor analysis that summarized the variables for the different health-care sectors. Third, the reliability of the different scales, subscales and subgroups was assessed by calculating Cronbach's α . In co-operation with experts on quality improvement, the development stages were determined by dividing activities (see the appendix) into four stages: (0) orientation and awareness; (1) preparation; (2) experimentation and implementation and (3) integration into normal business operations [15, 16].

In stage 0, there are no systematic activities for quality assurance and improvement of health-care processes. Some disciplines monitor their own quality through peer review and the use of standards for specific treatments. Management has started describing the mission, vision and services/products of the hospital. In this stage, the professionals are mainly responsible for quality assurance. In stage 1, hospitals create the conditions necessary for systematic quality assurance and improvement. In stage 2, hospitals develop different kinds of quality management activities and improvement projects. The purpose is to cross the boundaries of separate disciplines using the quality-improvement cycle. The hospital reaches the level of integration and establishment in stage 3. Quality management is no longer an experimental activity but is integrated into normal business operations. Results of activities in one focal area will be used for changes and improvements in others. Therefore, it is necessary that hospitals develop activities simultaneously in more than one category. Each stadium of quality management is based on the extent to which particular activities, divided over five categories, are conducted within the organization (Table 1). The five categories are quality policy documents, human resource management, protocols and guidelines, systematic quality improvement and patient participation in quality management activities [15, 16].

[TABLE 1]

For the analysis of the development stages, category scores were computed based on the presence or absence of activities. The questionnaire used a closed, Likert-type format with three or four ordinally scaled options per question and some nominally scaled questions. In the category 'systematic quality improvement', the items had three response options: the quality improvement procedure (1) is not present, (2) is present, but not entirely operational or (3) is present and operational. Operational was defined as meaning that, for instance, the information obtained from peer review, audits or satisfaction surveys is applied systematically to make improvements. Options 2 (present) and 3 (present and operational) are combined in the calculation of the category score. For the items in the other four

categories, affirmative answers were used (yes, this activity is present in the organization). All categories were proved to be reliable (with Cronbach's α ranging from 0.71 to 0.86). Missing values were recorded as zero, assuming that missing implied that the activity was 'not present' in the organization. Hospitals with more than five missing activities were excluded.

The development stage was calculated using the category scores. An organization had reached a development stage if it had developed at least one of the quality improvement activities for that stage and most of the activities in the earlier stages.

Multiple measurements

Longitudinal data were used to describe the changes undergone by quality management systems between 1995 and 2007. Data for this study were collected in 1995, 2000, 2005 and 2008. The questionnaire was sent to all Dutch hospitals, followed by a reminder after approximately 3 weeks. Addressees were the chief executive officers of the hospitals, who in most cases completed the questionnaire together with the quality manager.

Multi-level analyses

To test the influence of time and programme participation, additional analyses were needed. Multi-level analyses were conducted with the quality management system development stage as the dependent variable. Hypothetically, if the number of hospitals had remained the same since 1995 and if all hospitals had returned their questionnaires, analyses could be based on at least four measurements for each hospital. However, in reality, hospitals have merged and non-responses have accumulated.

A multi-level model is needed because measurements are not independent from each other: they are clustered by hospital. Part of the variance in development stage is due to differences between years, whereas another is due to differences between hospitals. Changes through time were studied using a two-level model wherein measurements are nested hierarchically in hospitals. One factor needing to be dealt with involves hospital mergers. If hospitals merged, for instance in 2003, this may mean that the 2000 sample contains two or more hospitals with the same code (if both hospitals completed the questionnaire). In those instances and if, for example, the quality management system score of two hospitals differed, the smaller hospital was given a new unique code.

After having tested an empty model in which only the average development stage was estimated, independent variables were added in three steps. The first step was to test whether development stages differ between measurements (time effect). In the second step, a dummy variable was added to study possible stage differences between the multi-level quality collaborative hospitals and the other group for each measurement. A variable was also included to compare the slopes of both groups (interaction: time x subgroup). In the third step, to determine whether hospital size is related to quality management—as is suggested by several authors [22, 23]—the number of full-time equivalents was added to study its significance. In the result section, the estimated fixed and random effects are presented per step. A deviance test is used to compare each model with its predecessor, and the deviance can be regarded as a measure of lack of fit between model and data. The larger the deviance (-2 loglikelihood; IGLS), the poorer the fit to the data. The deviance test is a tool to assess whether each next model leads to a substantial reduction in deviance. All analyses were conducted in MLwiN 2.01.

RESULTS

Response rates

A total of 453 questionnaires were sent to the whole population of Dutch hospitals in 1995 ($n = 143$), 2000 ($n = 117$), 2005 ($n = 96$) and 2007 ($n = 97$). The total response was 73% (325 questionnaires). The 2007 response rate was 65% (62 questionnaires), for 2005 it was 68%

(71 questionnaires), that of 2000 was 68% (80 questionnaires) and the response rate of 1995 was 78% (112 questionnaires).

Changes in category score

When comparing the scores per category between 1995 and 2007, one can see that each dimension scored higher in 2007 than it did in 1995 (Table 2). An independent sample *t*-test showed that this was the case for each category ($P < 0.001$) except for patient participation ($P < 0.10$). In 2000, the development seemed to have experienced a partial fallback within human resource management and patient participation. Compared with 2000, however, in 2005 an improvement was realized in every category. The changes between 2007 and 2005, again, were primarily positive. Furthermore, the data suggest that there had been a gradual increase in development stages since 1995. The total sample contained one instance with more than five missing values on the activities.

[TABLE 2]

An evolving quality infrastructure

In Fig. 2, the historic quality management system development is visualized in a bar chart. The increase from stage 1 to stage 2 between 1995 and 2000 is followed by a rapidly evolving average development stage in later years. Figure 2 shows how stage 0 'orientation and awareness' completely disappeared after 1995. Stage 1 'preparation' is still highly present in 1995 and 2000, but has almost completely vanished in 2005 and 2007. Hospitals unmistakably have reached higher development stages. In 2005, 72% of the institutions were in the stage of experimentation and implementation, and hospitals in 2007 had gotten beyond this stage. One-third of them entered stage 3, the phase of systematic learning and integration.

[FIGURE 2]

Multi-level analyses

A next step is to test the significance of the effect of time, participation in the multi-level quality collaborative and hospital size on quality management system development in four steps. Ideally, one would use data from 1995, 2000, 2005 and 2007 in the analyses. The fact is that the identity of only 54 of the 112 1995 hospitals is known today [18]. This disturbs the comparison between the multi-level quality collaborative group and the others hospitals. Among the 54 institutions, there are only 13 programme hospitals. In the 2000, 2005 and 2007 data, the number of programme hospitals is at least 19 of 24 per measurement (79%). Half of the programme hospitals are missing in the 1995 data, making a stage comparison between them and the other hospitals less robust, and test results are more likely to be affected by differences between individual hospitals. For that reason, the further analysis is based on hospital data from 2000, 2005 and 2007 without missing values ($n = 199$). The 2000 sample contained four pre-merger redundancies. Only one of the 'double' hospitals had a quality management system score that was different from that of its future merger partner. This hospital was assigned a new code.

Table 3 contains the results of the multi-level analyses. Each model is presented in a separate column. In the upper half of the table, the fixed effects are shown; in the lower half are the random effects and the results of the deviance test. In model 0, the average development stage has an estimated value of 1.99. The random effects show that there are significant differences between the measurements (level 1) and not between the hospitals (level 2). In model 1, the time effect is confirmed. Development stages increase through time ($P < 0.001$), the level 1 variance (random effect) is reduced and the level 2 variance (differences between hospitals) reaches significance. According to the deviance test, model 1 fits the data better than model 0 ($P < 0.001$).

[TABLE 3]

In model 2, the influence of the multi-level quality collaborative is estimated. There are no significant differences in the average development stage between these and other hospitals ($P > 0.05$). Model 2, however, reveals that the development slope within the programme group is steeper ($P < 0.05$). According to the deviance test, model 2 is not an improvement compared with model 1 ($P > 0.05$).

Model 3 also contains the estimated effect of hospital size. The development trend of programme hospitals is no longer significantly different from that of the other hospitals ($P > 0.05$; Fig. 3). It is confounded by a simultaneous increase in hospital size. The average size of programme hospitals has grown faster than that of non-participants (2000: 1315 versus 1453 FTE; 2005: 1993 versus 1741 FTE; and 2007: 2241 versus 1607 FTE). Model 3 is a substantial improvement compared with model 2 ($P < 0.001$).

[FIGURE 3]

DISCUSSION

In the previous section, a general increase in the quality management system development stage at sector level was described. Although one should be careful with claims of causality, the data suggest that quality management systems evolved in the same period that policy changes were implemented in the Dutch hospital sector to enhance external pressure. Before discussing future implications of the findings, it is important to pay extra attention to the relations between time, participation in the multi-level quality collaborative and hospital size. To start with the latter, hospital size has increased in the last century due to mergers [24]. The current mergers follow from corporate strategies to gain bargaining strength in relation to insurers making hospital size a result of sector changes as well. The multi-level quality collaborative was a deliberate attempt to enhance quality management systems. An evaluation showed that, during the programme, hospitals shaped their quality management system according to a model for spread and sustainability, consisting of strategic quality norms (based on the results of previous projects), organizational support for the implementation of new projects at unit level, internal performance agreements between the strategic management and unit heads as well as monitoring and quarterly accountability moments [25]. After having applied a correction for hospital size (confounding), the situation and changes within the programme group are not significantly different from other hospitals. A likely possibility is that extra time is needed for programme hospitals to complete their new infrastructure. Even then, before definite conclusions can be drawn, it needs to be emphasized that the programme was an integrated element of the contemporary national policy mix. By dividing hospitals into two groups—participants versus the others—the multi-level quality collaborative was treated as a distinctive intervention. That is correct, insofar as participants followed an organizational change plan set out and supported by external change agents to stimulate performance management and systematic quality management. The risk of contamination, however, is large, not only because knowledge about the multi-level quality collaborative was never intended to be restricted to programme hospitals; there were enough channels enabling knowledge and insights from the programme to reach individuals at all organizational levels of other hospitals (public communication of good examples from programme hospitals was actively stimulated). In particular, the policy mix confronted other hospitals with increased competition, transparency, national agenda-setting and so on. All hospitals had to find a way to deal with challenges inherent to the changing environment.

Future

Although difficult to imagine a decade ago, quality management systems have matured. A question is where will this course lead in the future. On the basis of extrapolation, it is likely that the growth of quality management systems within hospitals will come to an end between

2010 and 2015. From there on, measurement instruments will not be sensitive enough to assess further development, making it necessary to develop new ones. Future challenges for hospitals probably have to do with fine-tuning and system maintenance: namely, keeping processes efficient and adapting them to tomorrow's unknown but inevitable changes in the policy agenda and macro environment. Fluctuations in development scores of the system categories in Table 2 may mean that hospitals, after reaching a certain level, will have to invest in order to stay there. In addition to new health-care topics and obligations, the issue of sustainability is expected to continue.

Once quality management systems have fully matured, new challenges arise. A high development stage means that an organization is gaining insight into—and achieving a better understanding of—the quality of processes and outcomes. Hence, professionals working in this area have to comply with demands from their organization. These demands are derived partly from a national agenda and imply—despite the fact that physicians acquire more power to ask for facilities to improve quality—a gradual loss of the professional autonomy of physicians as quality control instruments are refined. The policy agenda challenges medical-managerial relations, introducing expertise that provides managers with the knowledge and legitimacy to survey and scrutinize medical performance, made real through procedures for incident reporting and root-cause analysis [26, 27].

It is clear that a number of investments have been made to institute high-functioning quality management systems to optimize the quality of hospital care. A definitive answer to the question of whether the multi-level quality collaborative and the policy changes within the sector contributed to better outcomes of hospital care is currently unavailable. It is necessary to link reliable up-to-date information on quality outcomes to system features. This is a fundamental and urgent issue, because until this step is taken, all efforts are being made only under the assumption—not the certainty—that they contribute to quality.

Strengths and weaknesses

The main strength of this study is that repeated measurements were conducted with an instrument that had been thoroughly tested in previous research. The instrument provides detailed information about quality management activities, independent of specific characteristics of health-care subsectors and of the quality model used by an organization (ISO, EFQM or other models). The most important weakness of this study is the problem of social desirability—a limitation typical of research with self-assessment questionnaires. The increase in the development stage through time is accompanied by a slight decrease in survey response rate. Self-selection may have occurred when hospitals with less-developed quality management systems failed to return the survey. It was measured to what extent an activity was present in the organizations based on the perception of the respondents. Social desirability in the responses could not be excluded. To diminish this risk, hospitals were invited to report activities anonymously to the researchers. To increase survey participation, each organization was promised a feedback report with benchmark figures. Furthermore, social desirability seems unlikely because no sanctions were imposed on non-compliance with the Care Institutions Quality Act in the Netherlands. Another weakness is that no comparison or control group was available to test the effectiveness of the entire policy mix over time. In addition, the effectiveness of quality activities or the development stage on the actual quality of hospital care was not assessed. This issue definitely needs further research.

CONCLUSION

Over the past decade, many financial and non-financial policy measures have been launched in the Dutch hospital sector with the purpose of overcoming the lagging development of quality management systems. In this study, data from different measurements were described and modelled. The effects of time, participation in a multi-level quality collaborative and hospital size on quality management system development were tested in various models. The main conclusion is that quality management systems have

evolved significantly since 1995. Financial and non-financial policy measures at macro level indeed might have provided a form of external pressure that forced hospitals to extend their scale by mergers and stimulated the further development of quality management systems. Hospitals today are entering the stage of systematic quality improvement as feedback loops are established at organization level.

FUNDING

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[APPENDIX]

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FIGURES, BOX, APPENDIX, TABLES

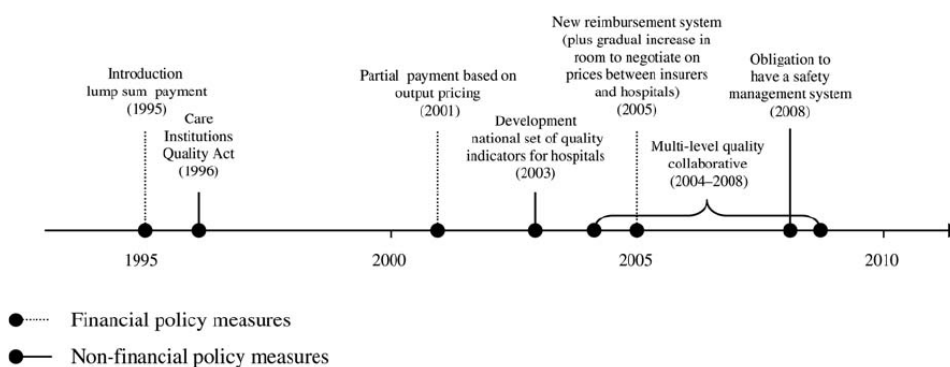


Figure 1 Policy changes in the Dutch hospital sector between 1995 and 2008.

BOX 1 THE MULTI-LEVEL QUALITY COLLABORATIVE

A national programme to stimulate transparency, efficiency and quality of care was implemented in three groups of eight hospitals between 2004 and 2008 (covering approximately a quarter of all hospitals in the Netherlands). This multi-level quality collaborative combined a 2-year top-down and bottom-up approach. At 'bottom' level, physicians, nursing staff and managers were encouraged to participate in quality improvement collaboratives to continuously improve the quality of their work by trying out interventions using a breakthrough model (plan-do-study-act cycles to test whether changes led to improvement) while being supported by their institution and external change agents. Performance indicators representing quality and efficiency aspects of the work of medical staff were measured repeatedly: for instance, operation theatre productivity, waiting lists for out-patient appointments, length of in-hospital stay, prevalence of wound infections and pressure ulcers and post-operative pain as well as the nature and severity of safety incidents.

At 'top' level, hospital executives participated in a special collaborative leadership programme (Leadership and Organisation Development). A project organization was established to monitor the progress of the various programmes. The strategic management was expected to encourage active staff participation and to support the implementation and spread of the new working methods and results. Feedback loops were established at department and process level, part of the learning cycles during the implementation of the breakthrough model. In addition, the leadership programme strove explicitly for the realization of feedback loops at institutional level to promote the congruence between strategic hospital goals and the performance at department level.

Source: Dücker et al. [14].

Table 1 Quality management activities divided into five categories and four developmental stages

	Policy and strategy	Human resource management	Practice guidelines for:	Systematic quality improvement	Patient participation
Stage 0	Mission statement; annual quality report	Encouraging professional development	Medical treatment	Peer review; care plans	Patient is not involved
Stage 1	Written quality policy exists; quality action plan under development	Training staff; training managers; quality improvement activities within regular working hours; management explains quality requirements	Patient information; medical aids; diagnostic-related groups	Complaints registration; committees; job assessment interview	Evaluating quality goals and results of satisfaction research
Stage 2	Quality action plan	New staff selected on quality attitude; new staff trained; management controls	Critical incidents; cooperation with other providers	Satisfaction research; needs analysis; management information system; accreditation	Development of quality criteria or guidelines
Stage 3	Quality action plan and quality manual	Training based on quality policy and systematic feedback	Routing of the patient and critical incidents	Internal audit and satisfaction research	Committees and improvement projects

Adapted from Wagner *et al.* [19].

Table 2 Mean quality management system category and quality management system (QMS) development stage scores between 1995 and 2007: means, standard deviations and ranges

Category	1995 (<i>n</i> = 112)			2000 (<i>n</i> = 80)			2005 (<i>n</i> = 71)			2007 (<i>n</i> = 62)		
	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range	Mean	SD	Range
Quality policy documents	1.53	0.64	0.00–2.00	1.73	0.64	0.00–3.00	2.15	0.47	0.00–3.00	2.40	0.49	2.00–3.00
Human resource management	1.72	0.84	0.00–3.00	1.30	0.58	1.00–3.00	2.56	0.58	1.00–3.00	2.53	0.53	1.00–3.00
Systematic quality improvement	1.00 ^a	0.00	1.00–1.00	2.05	0.35	0.00–3.00	1.72	0.86	1.00–3.00	1.98	0.97	0.00–3.00
Protocols and guidelines	1.81	0.84	0.00–3.00	2.10	0.67	1.00–3.00	2.30	0.68	1.00–3.00	2.53	0.65	1.00–3.00
Patient participation	1.53	1.06	0.00–3.00	1.28	1.23	0.00–3.00	1.62	1.10	0.00–3.00	1.94	1.05	2.00–3.00
QMS stage ^b	1.39	0.62	0.00–3.00	1.60	0.56	1.00–3.00	2.08	0.53	1.00–3.00	2.29	0.58	1.00–3.00

^aOne missing; ^b0, orientation and awareness; 1, preparation; 2, experimentation and implementation; 3, integration into normal business operations.

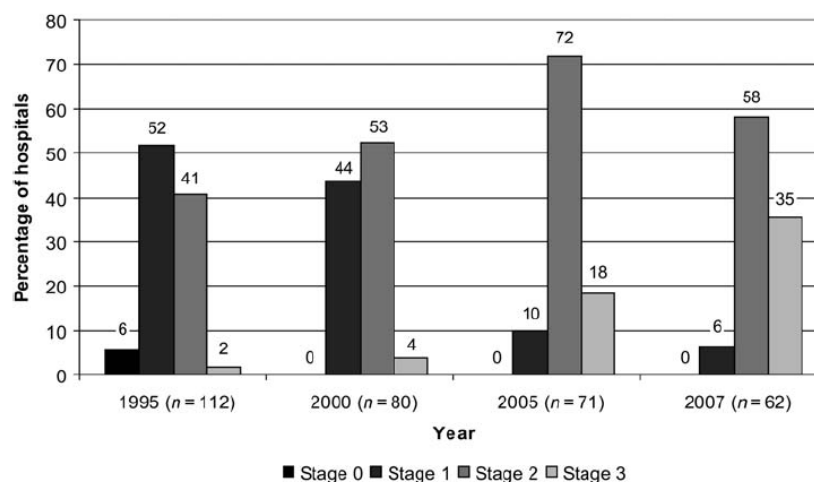


Figure 2 Development stages of hospital quality management systems in the Netherlands between 1995 and 2007.

Table 3 Results of the multi-level analyses: effect of time, multi-level quality collaborative (MQC) participation and hospital size between 2000 and 2007 on quality management system (QMS) development stage ($n = 199$)

	Model 0 (empty model) [B coefficient (SE)]	Model 1 (model 0 + time) [B coefficient (SE)]	Model 2 (model 1 + subgroup comparison) [B coefficient (SE)]	Model 3 (model 2 + hospital size) [B coefficient (SE)]
Fixed effects				
QMS development stage intercept (constant)	1.992 (0.038) ^b	1.600 (0.057) ^b	1.640 (0.064) ^b	1.531 (0.069) ^b
Time (2000–2007)		0.084 (0.010) ^b	0.072 (0.011) ^b	0.069 (0.011) ^b
QMS development stage MQC compared with non-MQC			−0.164 (0.132)	−0.141 (0.128)
Trend MQC compared with non-MQC			0.044 (0.022) ^a	0.036 (0.022)
Hospital size (FTE × 1.000)				0.076 (0.020) ^b
Random effects				
Variance component				
Hospital (level 2)	0.015 (0.023)	0.038 (0.019) ^a	0.040 (0.019) ^a	0.025 (0.017)
Measurement (level 1)	0.244 (0.033) ^b	0.157 (0.021) ^b	0.151 (0.020) ^b	0.151 (0.020) ^b
2 loglikelihood (IGLS)	295.680	233.910	229.319	216.449
Deviance test	Reference	$P < 0.001$	$P > 0.05$	$P < 0.001$

^a $P < 0.05$; ^b $P < 0.001$.

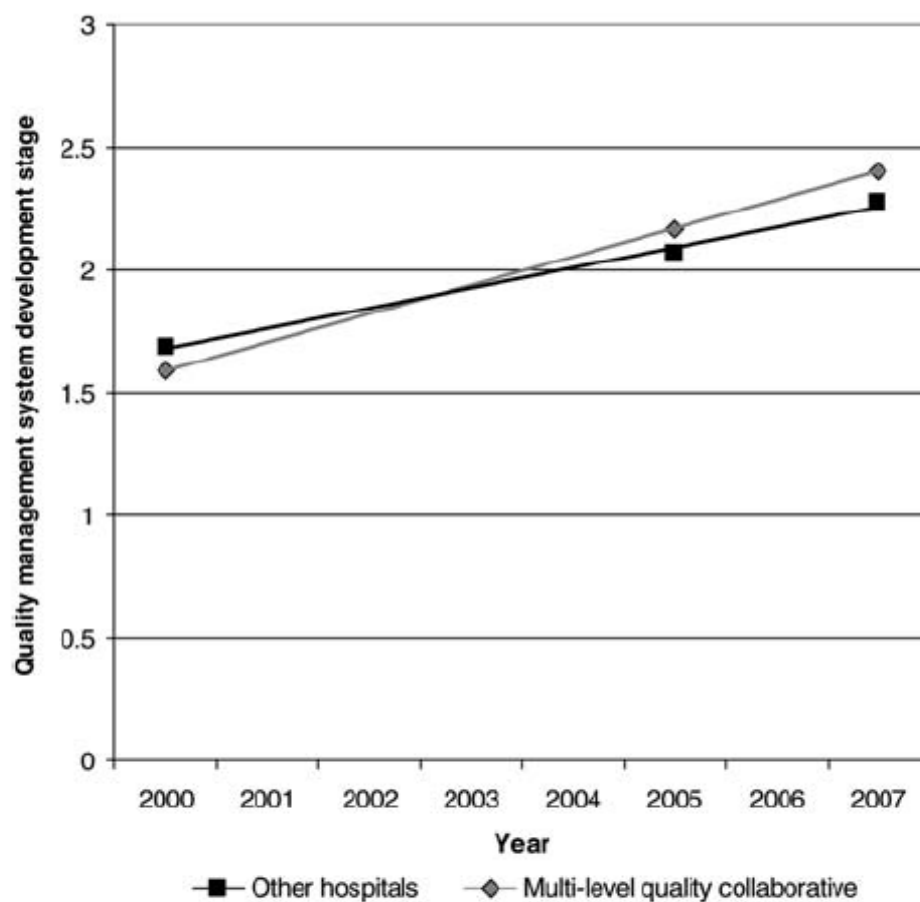


Figure 3 Quality management system development between 2000 and 2007: multi-level quality collaborative hospitals compared with other hospitals.

APPENDIX

This appendix contains the questionnaire items on which the quality management system development rate (Table 1) is based. Activities are divided into five categories.

Policy and strategy

1. To what extent do the following documents exist in your hospital?

	1*	2*	3*
- Written description of the mission: the basic principles and vision of the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Annual quality report (or quality section in the annual general report): a justification and the results of all activities that have been carried out within the framework of quality policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quality action plan for the entire organisation: written document with measures for implementation and planning of action to realise quality goals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quality action plan for some departments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quality action plan for every department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Quality manual: a description of all procedures that pertain to quality management and of those people responsible for maintaining them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* 1 = no, not applicable; 2 = yes, this document is present in our hospital, but not used as part of the policy and control cycle; 3 = yes, this document is used as part of the annual policy and control cycle

Human resources management

2. Which activities are undertaken to attune the personnel policy of your hospital to the quality policy? (More than one answer is possible.)

- No special activities
- Training/education of management
- Training/education of staff
- Staff can participate in quality improvement activities during working hours
- Top management indicates what is expected from staff with regard to quality policy of the hospital
- Selection of new staff with a positive attitude to quality improvement
- New staff are trained in quality improvement methods
- Top management assesses whether staff adhere to agreements made with regard to the quality policy of the hospital
- Top management monitors the execution of unit working plans
- Advancement of expertise is based on priorities in the quality policy
- Staff receive systematic feedback on the results of the treatment of patients

Practice guidelines

3. What type of protocols or guidelines are used in your organisation? (More than one answer is possible.)

- Aimed at specific clinical procedures
- For patient information
- For the use of medical aids (such as crutches, bandages, etc.)
- For specific target groups or diagnoses
- For critical moments in the care process
- For collaboration with/transfer of patients to other care providers
- For the routing of patients from admission to the conclusion of care

Systematic quality improvement

4. Do the following activities, which potentially contribute to quality improvement, take place within your organisation?

	1*	2*	3*
- Peer review: professionals within their own group assess and improve their activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Care/treatment plans: care provision is recorded in individual plans, evaluated periodically with pre-determined objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Analysis of complaints: complaints are evaluated periodically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Job assessment interviews	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- User satisfaction survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- User needs survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Management information system: periodic overviews of care provision and outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Accreditation and certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Internal audit: the functioning of all quality management system components is assessed periodically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* 1 = no, not applicable in our hospital; 2 = yes, the activity does take place but is not yet integrated in daily routines (inadequate use of the results for improvements); 3 = yes, the activity does take place and is integrated in daily routines and the quality management system (results are systematically used for improvements)

Patient involvement

5. In what way are patient(s) (organisations) involved in quality assurance or improvement activities within your organisation?

	No/ does not apply	Patient(s) (organisations) are involved
- Evaluating whether quality goals are achieved	<input type="checkbox"/>	<input type="checkbox"/>
- Discussing results of satisfaction surveys, handling of complaints, etc.	<input type="checkbox"/>	<input type="checkbox"/>
- Developing quality criteria	<input type="checkbox"/>	<input type="checkbox"/>
- Developing protocols/guidelines	<input type="checkbox"/>	<input type="checkbox"/>
- Participation in quality committees	<input type="checkbox"/>	<input type="checkbox"/>
- Participation in quality improvement projects	<input type="checkbox"/>	<input type="checkbox"/>