



## Quality Assurance in Swiss University Hospitals: a Survey Among Clinical Department Heads

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**Key words:** Quality of health care, quality control, quality assurance, health care, attitude of health personnel, Switzerland, hospitals, teaching.

**Objective:** To obtain information to help design and implement quality improvement programmes.

**Design:** Questionnaire survey.

**Setting:** Swiss University Hospitals.

**Study participants:** Clinical Department heads.

**Main outcome measures:** Attitudes towards quality assurance and percentage of departments with procedures for measurement and improvement of structure, process and outcome of medical care.

**Results:** Among 138 departments responding, 69 indicated a designated person or group in charge of quality and 57 were involved in collaborative quality improvement programmes. Mortality data at the level of the department was unavailable to 33% of respondents, and data on adverse treatment effects to 67% of them. Most respondents (69%) favoured the use of outcome indicators for quality control; only 13% favoured indicators pertaining to process or structure of care. Among indicators of outcome, patient satisfaction was the preferred indicator (25% of respondents), followed by morbidity (16%) and mortality (12%) data.

**Conclusion:** Although the quality of medical care in Switzerland enjoys an excellent reputation, this study highlights important gaps in the information system and the processes necessary to evaluate quality. Copyright © 1996 Elsevier Science Ltd.

### INTRODUCTION

Quality in health care has been the subject of little formal research in Switzerland. As part of an inter-university project aimed at quality improvement in health care, a survey was conducted on current activities in university hospitals and on the attitudes of department heads towards quality assurance. The rationale for this survey was the need to obtain information on the situations in which programmes are to be implemented in the university hospitals. In addition, a new health insurance law, scheduled for gradual application beginning in 1996, will require health care providers to implement “scientific and systematic measures to guarantee the quality and appropriateness of care...”. It is expected that university medical schools will play a leading role in the development and implementation of such measures.

A bibliographic search of the 1976 to 1995 Medline database, using quality assurance and attitude of health personnel as key words (as well as “attitude” or “opinion” as text words) revealed that surveys of opinions of clinical leaders toward quality assurance have been relatively scarce, the closest ones being a study on hospital leaders’ opinions in the United States [1] and another one among surgical consultants in Great Britain [2]. Because little is known (or published) in this area, we report here the results of the Swiss survey.

## METHOD

Because involvement of clinical opinion leaders is a major predictive factor of success of quality improvement programmes [3], a series of meetings with leaders in clinical medicine in the five university hospitals was organized in order to discuss the project and obtain input on the content of the proposed survey. A questionnaire was constructed taking into account the opinions expressed at these preliminary meetings. It included 49 questions divided into four sections, three of them labelled according to Donabedian's classification of constituents of quality of care (structure, process and outcome), with short definitions of each term, and a further section on characteristics of the respondents and their departments. Some of the questions pertained to actual activities of quality measurement and improvement, and others to opinions or attitudes towards quality assurance. The questionnaire was formulated in French and German, so that respondents could answer in their working language. It was sent to 246 department heads, whose names were obtained from lists of departments provided by key informants in each university hospital, and included all clinical services in each institution. The mailing lists were used as received, although it later became evident that a number of recipients were not directly involved in patient care.

The questionnaire was anonymous and anonymity was further guaranteed through avoidance of publishing breakdown or sub-group analysis that, in the Swiss context, could easily

lead to identification of specific individuals, departments or hospitals.

The initial mailing was in June 1994, with a reminder being sent after 10 weeks. Quantitative results were analysed using the Epi Info software [4]. Responses to open-ended questions were manually coded.

## RESULTS

Of 246 questionnaires sent, 147 were returned, giving a global response rate of 60%. The proportion of non-clinical departments was significantly higher among non-responders (31.3% non-clinical departments, versus 6.1% among responders,  $p < 0.01$ ). Among responders, departments considered non-clinical (9 respondents) were excluded (i.e., laboratories of clinical chemistry and haematology, plus institutes of pathology and biochemistry), giving results from 138 clinical departments. The response rate for clinical departments was 67% and did not differ significantly by hospital, ranging from 61% to 75% (Chi-square 2.43,  $P = 0.67$ ). Respondents included at least one representative of every clinical specialty. Question-specific response rates ranged from 38% to 99% of the 138 analysed questionnaires.

Table 1 shows data on respondents and their departments. There was considerable heterogeneity among departments in terms of number of beds, physicians and patients. Three percent of department heads were female.

A detailed analysis of non-responders was not

**TABLE 1. Characteristics of respondents and their department. Median values; figures in parentheses are 10th and 90th percentiles**

Hospital	<i>n</i>	Age	Residents	Beds	Patients	Stay (days)
1	30	53 (42–60)	12 (5–36)	32 (12–90)	1600 (373–3334)	8.5 (4–21)
2	26	55 (45–64)	10 (4–35)	21 (5–74)	860 (119–2564)	8 (3.6–21)
3	27	55 (40–64)	10 (3–60)	43 (15–300)	1473 (150–4402)	12 (3–99)
4	31	50 (43–64)	11 (4–20)	41 (6–90)	1144 (229–3885)	6.7 (3–36)
5	24	56 (38–65)	16 (5–50)	57 (24–160)	1818 (530–6059)	8.1 (6–21)
Total	138	54 (43–64)	11 (4–36)	40 (13–124)	1196 (286–3885)	8.8 (4–25)

### Legend

*n*: Number of of clinical department heads who answered the questionnaire

Age: Age of the respondent

Residents: Number of physicians (internes, residents and chief-residents) training in the department

Beds: Number of beds in the department

Patients: Number of patients treated in the department during 1993

Stay: Median of average length of stay per department.

possible: a comprehensive data-base on department heads in university hospitals does not exist. In addition, the authors' commitment to confidentiality and anonymity precluded a search of additional information on non-responders.

A number of activities for measurement and improvement of structure, process and outcome of medical care were already in use, as shown in Table 2. These procedures tended to be concentrated in some departments: for example, 62% had disease-specific guidelines, guidelines on appropriateness of some investigations and a mechanism to check the use of guidelines. At the other extreme, 5% of (clinical) department heads indicated that information on none of the four investigated elements concerning structure of medical care listed in Table 2 was available. And only 13% of heads said that they knew all three rates (mortality, adverse treatment effects and nosocomial infection) in their department. Regarding organization and initiatives of quality assurance, 50% of the 138 responding clinical departments had an institutionalized responsibility for quality. The collaborative programmes referred to in Table 2 were: interdepartmental, inter-university, international, or with specialty

societies. It was up to the department heads to decide whether their programmes should be considered related to quality improvement.

Concerning the "person in charge of quality assurance", this was either a senior staff physician (49%), a group (35%), a chief-resident (10%) or other (6%). In Swiss university hospitals, a senior staff physician is a fully qualified member of the permanent staff of the department; a chief-resident is not part of the permanent staff but is directly responsible for supervising residents who are doing their five years of practical specialty training after completion of the six-year medical school.

Thirty eight percent of departments had a programme for improving drug prescription practices and 25% had a list of diagnostic tests that should not be ordered on a routine basis.

Information readily available to respondents on quality of care in their department was as follows: department mortality rate was known to 67% of respondents; the incidence of hospital infections in their own department was known to 34% and 31% had information on the proportion of patients having suffered important side-effects in their department. Fifty-eight heads of

**TABLE 2. Proportion of departments having institutionalized quality assurance activities, according to department heads**

Quality assurance activity	%*
<b>Outcome:</b>	
Patient diagnostic statistics	83%
Knowledge of department mortality rate	67%
Patient satisfaction known through a questionnaire	40%
Knowledge of department rate of nosocomial infection	34%
Knowledge of department rate of adverse treatment effects	33%
<b>Process:</b>	
Department clinical meetings	98%
Disease-specific guidelines	84%
Guidelines on appropriateness of some investigations	80%
Mechanism to check the use of guidelines	65%
Anatomo-patho-clinic confrontation	63%
Collaborative programme related to quality improvement	41%
Programme for appropriate use of drugs	38%
<b>Structure:</b>	
Written document on tasks and responsibilities of staff members	71%
Person in charge of quality assurance	50%
Rules against excess work load of staff in direct contact with patients	<47% †
Written document on quality assurance	17%

\*% of departments having the activity.

† 54% said that they do not have such rules.

department responded to the open question on how they would define an "important side effect". The array of responses could be divided into two groups: direct criteria (e.g., morbidity, complications, mortality, permanent impairment, decreased quality of life) and indirect criteria (i.e., modification of treatment, length of prolonged stay).

One hundred and sixteen respondents (79%) expressed their opinion on the best indicators for monitoring quality of care in their department (open-ended question). Answers were categorized as presented in Table 3. The vast majority (114 respondents, with 151 citations) proposed at least one indicator measuring an outcome of health care, according to Donabedian's classification of quality constituents [5]. A measure of patient satisfaction was mentioned at least once by 25% of respondents, while 16% favoured one or two measures of complications or morbidity and 12%, data on mortality.

Indicators pertaining to process or structure of care were mentioned by 13% of respondents.

The information that department heads would like to have in order to reasonably interpret mortality rates from their wards is presented in Table 4. Only 53 heads of department (38% of respondents) answered this question. Among those indicating that such information is not necessary for them, four explained that the mortality rate in their department was very low.

Barriers to implementation of quality assurance programmes were mainly attributed to lack of resources (Table 5). Obstacles classified as "psychological" were related to "self-satisfaction" of the medical personnel, or "lack of awareness of the problem of medical errors", etc. In spite of obstacles, 81% of respondents would be interested in comparing their department with others for quality of care and 69% felt some form of co-ordination among the five

**TABLE 3. Preferred indicators of quality in health care, according to 116 heads of clinical departments (summary). Two answers per respondent were possible**

Preferred indicators	Number of citations (%)	% of respondents
<b>Outcome:</b>		
Patient satisfaction/ dissatisfaction	29(13.3)	25
Complications/morbidity	19(8.7)	16
Mortality	14(6.4)	12
Length of stay	13(6.0)	11
Number of patients referred	12(5.5)	10
Successful outcomes	11(5.0)	9
Professional esteem *	8(3.7)	7
Physician and personnel satisfaction	5(2.3)	4
Other	40(18.3)	34
<b>Process:</b>		
Ward rounds	4(1.8)	3
Patient questionnaires	4(1.8)	3
Discussions with patient	3(1.4)	3
Time-lag between admission and diagnosis	3(1.4)	3
Other	14(6.4)	12
<b>Structure:</b>		
Personnel knowing the ward well	1(0.5)	
Control of equipment and material	1(0.5)	
Other:	37(17.0) †	
Total:	218(100.0)	

\* Professional esteem includes peer recognition and number of patients referred by colleagues to the department.

† 37 Other: – 16 answers did not fit into any of Donabedian's categories – 12 answers were unintelligible or illegible – 9 answers were comments without any proposed indicator.

**TABLE 4. Desired additional information for interpretation of department mortality rate, according to 53 department heads**

Desired information	Number of citations
Cause of death, autopsy report, diagnoses	15
Severity of illness	14
No information desired or necessary	10
Comparison with other departments	5
Patient age structure	4
Procedures	3
Simple, useful statistics	2
Total:	53

**TABLE 5. Main obstacles to implementing a more ambitious departmental programme of quality assurance, according to 119 department heads**

Main obstacle	Number of quotations
Lack of personnel	80 (64%)
Lack of computer facilities	14 (11%)
Lack of financial means	11 (9%)
Lack of agreement on methods	10 (8%)
Psychological obstacles	7 (5%)
Lack of knowledge or information	4 (3%)
Total:	126* (100%)

\* Seven double answers.

university hospitals for the promotion of quality in their field was necessary.

## DISCUSSION

Deserved or not, Switzerland has a long-standing reputation for high quality in many fields, from watches to machines, with a special mention for chocolate and cheese. Health care is no exception and it might be surprising to discover that health care is just beginning to become a subject of formal assessment and improvement initiatives. One reason for this relatively late start of formal quality assurance initiatives could be that Swiss health professionals, as well as patients and citizens, are all persuaded that they provide, or enjoy, the best possible health care, so there is no reason to

worry about quality. This study did not assess quality *per se* but focused on attitudes and practices related to its promotion.

In response to the question on preferred indicators of quality, patient satisfaction (or dissatisfaction) came first. This was somewhat surprising, as this indicator is influenced by many factors other than medical care, especially in hospital settings. It must be noted that the question was open-ended, making it possible for respondents to give answers that did not necessarily follow Donabedian's structuring of quality measures. Be that as it may, comparing Table 2 and Table 3 reveals a striking mismatch. For example, despite the fact that clinical guidelines are in common use, their use is not thought of as a good indicator of quality of health care in the department. In addition, only a small minority (12% of respondents) chose to mention mortality among the two indicators they would most favour, (whereas 67% of respondents were aware of the figures for their own department). The related question on desired additional information for the interpretation of departmental mortality rates (Table 4) raised little interest, with one of the lowest question-specific response rates. The fact that mortality rate attracts so little interest may point to an almost virgin context: Swiss hospitals have not had their death rates published, as has been the case in the United States and, more recently, in the United Kingdom [6-8]. In these countries, public release of hospital-specific mortality data has initiated wide debate and criticism in international journals, and elsewhere, on the use and misuse of hospital "league tables". These debates could well have produced the cautious attitudes we observed towards mortality data in Switzerland. In a random sample of US hospitals, compared and ranked according to their death rates by the Health Care Financing Administration, 70% considered data on mortality rates as being of "poor" usefulness for improving quality [1], whereas 30% thought of them as of "fair" usefulness or better. In order for physicians to use mortality data in a reasonable way, key information needs to be available to them, making interpretation and constructive criticism possible. Our results point to an apparent unawareness of this fact. In view of the ease of obtaining crude mortality data, this indicator of quality will probably be quickly taken up in

Switzerland and the knowledge of its limitations is vital.

A lack of practice and knowledge in quality assurance was also apparent from other results presented here: a minority of departments were involved in a quality assurance programme stretching beyond their own confines. The incidence rates of important side-effects and/or nosocomial infections were unknown or unavailable in two-thirds of departments. Indicators pertaining to process or structure of care were considered important by only 13% of respondents, revealing a possible lack of awareness of the importance of elements other than mere outcome in quality of health care. An additional clue to gaps in the system is the fact that "appropriateness of care" was mentioned only twice as a preferred indicator of quality, although this concept has been used in several clinical studies in Switzerland itself [9–12], and is explicitly mentioned in the new health insurance law.

University hospital department heads frequently mentioned both their interest in collaborating in quality assurance programmes and their lack of means to carry out such programmes: personnel, resources, information and consensus on methods for measuring quality of health care (Table 5). These elements are similar from those found by Karran et al. [2] among 57 surgical consultants, 75% of whom felt that "there were significant inadequacies in support staff, needed not only for assistance in collection and verification of data but also for subsequent analysis".

Among the limitations of the study is its relatively low response rate of 67% of clinical departments. For comparison, Karran et al. [2] obtained 72% from surgical consultants after two mailings and Berwick et al. [1] 78% from hospital leaders after four mailings plus a telephone call. We must consider that a possible selection bias might have occurred, with differential participation of those heads of department most interested or active in promotion of health care quality. In that case, however, our findings of relatively low prevalence of quality improvement programmes may actually be overestimated. Although by general standards a response rate of two thirds is at the lower limit of acceptability, it was at the upper limit of our expectations. We had opted for a limited volume

of the questionnaire in an attempt to reach an optimum between precision of gathered information and response rate when surveying very busy individuals. Question-specific rates were uneven, raising questions about the possible appropriateness of some parts of the questionnaire to some departments (e.g., not all departments had in-patient beds).

Swiss physicians have not been subject to much inspection of their performance. This could make the Swiss health care system a suitable place for experimenting with implementation of quality improvement programmes designed from scratch with the help of national leaders in clinical medicine. In such a context, it should be possible to avoid the reported impression of "loss of control" occurring when "someone else knows more about the impact of physicians' work than they do" [13].

New quality improvement programmes are planned in Switzerland for the near future, in the frame of both the current inter-university project and as a mandatory activity as a result of a new law coming into effect in 1996. This study was a first step towards the goal of collaborative quality of care programmes that would be welcome by those who provide care. It provided insight on what resources are needed by department heads: fair motivation, information and training on quality measurement and improvement techniques, and increased resources. For the latter, solutions will most likely have to be found in the framework of existing budgets. Concerning the lack of training, courses for clinical leaders will be offered in 1996 in the documentation, development and implementation of quality assurance. It is hoped that Swiss health care professionals will then be better able to approach and document a general five-star status (resembling neighbouring palace hotels), and fill in some odd holes — not all of them in cheese.

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