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**National VA  
Quality Improvement Survey  
2000 Report**

Results of FY00 Survey  
and Summary of Trends

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HEALTH SERVICES RESEARCH AND DEVELOPMENT SERVICE

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OFFICE OF RESEARCH AND DEVELOPMENT  
DEPARTMENT OF VETERANS AFFAIRS

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**National VA Quality Improvement Survey (NQIS)  
2000 Report  
Results of FY00 Survey and Summary of Trends**

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## National VA Quality Improvement Survey 2000 Report: Highlights

The HSR&D Management Decision and Research Center (MDRC) administered the National VA Quality Improvement Survey (NQIS) to samples of VHA clinical, managerial and general staff in 1997, 1998 and again in 2000. All three data collections utilized paper-and-pencil questionnaires distributed by interoffice mail. National response rates ranged from 70 percent (n=12,406) in 1997 to 52 percent (n=8,454) in 2000. Organizational culture and five other dimensions related to the integration of quality improvement and a focus on customer service into daily work life were measured over time. Overall, the study results suggest that there were low to modest levels of risk taking and group culture within VHA, and that these levels declined while the level of hierarchical culture increased over the period of the study; see Table 1. Modest levels of general support for total quality improvement (TQI) were observed initially, but there were preliminary signs that this support is eroding. Emphasis on TQI among facility leaders declined, and general staff perceived a decline in the extent to which their efforts to improve service quality were recognized and rewarded; see Table 2. Because there is evidence in the literature suggesting that these organizational factors enhance performance, they are especially important to monitor.

Table 1. VA National Culture Profile Over Time


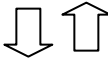

Measure	Interpretation	Current Level Total: 100	Trend 1997 to 2000*
Risk Taking Culture	Facility culture emphasizes innovation and risk taking	13	↓
Group Culture	Facility culture emphasizes teamwork and cooperation	19	↓
Rational Culture	Facility culture emphasizes efficiency, productivity, and the achievement of performance goals	24	↔
Hierarchical Culture	Facility culture emphasizes rules and conformity with established processes and procedures	44	↑

\*Over for key.

Table 2. Schematic Summary of Measures of TQI Implementation and Support






Measure	Interpretation	Current Level*	Trend 1997 to 2000*
QSS Scale	Facility is committed to total quality improvement	●	↓
Leadership	Facility top managers are committed to quality improvement	●	↓
Performance Goals	Job performance goals are related to service quality improvement	●	↔
Evaluation & Feedback	Staff receive sufficient feedback regarding their performance	●	↔
Reward & Recognition	Efforts to improve service quality are recognized and rewarded	●	↓

\*Over for key.

Key: Trend 1997 to 2000	
	Statistically significant decline (down arrow) or increase (up arrow)*
	Noteworthy decline (down arrow) or increase (up arrow), but not statistically significant *
	Statistically stable; no significant change*

\*To be declared statistically significant at the national level, a score change had to be sufficiently large as to be both (a) unlikely to have occurred by chance ( $p < .05$ ), and (b) at least moderately strong (effect size  $\geq .40$  as measured by Cohen's *d* statistic). Changes that met one but not both criteria were declared "noteworthy." Changes that met neither criterion were regarded as statistically stable.

General note. Statistical significance (defined as  $p < .05$ ) does not depend solely on the magnitude (2 points, 5 points, etc.) of the change in score. If, for example, there is greater variability on measure X than on measure Y, then a larger score change will be necessary on measure X before one can confidently distinguish true change from random fluctuation. Thus a two-point change on one measure may be significant whereas a two-point change on another measure would not be significant.

Key: Current Level			
Response Option		Color Code	Scale Score Range
1	Strongly disagree		1.00 to 1.50
2	Disagree		1.51 to 2.50
3	Neither agree nor disagree		2.51 to 3.50
4	Agree		3.51 to 4.50
5	Strongly agree		4.51 to 5.00

# National VA Quality Improvement Survey 2000 Report

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# National VA Quality Improvement Survey 2000 Report

## 1. National Summary

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# National VA Quality Improvement Survey 2000 Report: National Summary

## Background

Since 1995, the Veterans Health Administration (VHA) has undertaken an extensive reorganization in an effort to improve the quality and efficiency of the delivery of health care. During this period 54 facilities have been integrated into multi-site healthcare systems, and some variant of service line structure has been implemented in primary care, mental health, or other clinical areas at more than 110 facilities. Staff and financial resources have been shifted from inpatient to outpatient care, exemplified by the opening of over 300 new Community-Based Outpatient Clinics. Perhaps most fundamentally, what had been a highly centralized organization was restructured into 22 geographic networks of facilities with considerable flexibility in determining how to reach national quality and performance goals.

These changes in reporting relationships and budget authority were not ends unto themselves, but were seen as providing an environment more conducive to the values, attitudes, and behaviors necessary to achieve the vision of "the new VA." The expectation was that this transformed organization would have a less bureaucratic, more entrepreneurial and team-oriented culture that practiced total quality improvement. The importance of service quality would be consistently communicated by leaders at all levels of the organization and exemplified in their behavior. Service quality goals would also be explicitly incorporated into individual employee performance goals. Staff at all levels would receive timely and helpful feedback about their progress toward those goals, and efforts to improve service quality would be recognized and rewarded.

The National Quality Improvement Survey (NQIS) was designed to measure and monitor these less tangible but nonetheless crucial aspects of the organizational change process within VHA. This report presents the results of the third administration of the NQIS by the HSR&D Management Decision and Research Center (MDRC). The first round of data collection was completed during the first half of fiscal year 1997, the second during the last half of fiscal year 1998, and the third during the first half of fiscal year 2000.

## Methods and Procedures

**Procedure.** As was done in 1997 and 1998, data for 2000 were collected by means of a confidential paper-and-pencil questionnaire distributed to staff at each VHA facility through inter-office mail. A postage-paid business reply envelope was provided so that respondents could send completed questionnaires directly to the data entry vendor. A second copy of the questionnaire was sent to all staff who did not respond to the first mailing.

**Sample.** Three samples were drawn at each facility: middle managers (service chiefs), front-line supervisors, and general staff. All managers were included; supervisors and general staff were randomly sampled. Up to 150 employees were selected at each facility depending on the size of the workforce. The sample was also stratified by service (e.g., fiscal, medical administration) to ensure representation from all service groups.

## Measures

Aggregate facility-level scores representing six aspects of a facility's potential for and commitment to service quality and customer satisfaction were derived from the questionnaire responses.

### **(1) Organizational Culture**

One sub-set of survey questions focused on organizational culture. Employees were asked to characterize their facility by distributing 100 points across four cultural attributes: risk taking/innovation, group orientation/teamwork, hierarchical/bureaucratic, and rational/task orientation. The more points assigned to an attribute, the more employees believed that attribute characterized their facility. In contrast to the other culture dimensions, a *lower* score for hierarchical/bureaucratic orientation would generally be considered *more favorable*. Employees typically did not allocate all 100 points to any one attribute.

### **(2) Quality System Survey -- Overall Commitment to Quality Improvement**

The NQIS survey also included a modified version of the VHA Quality System Survey (QSS), an instrument that is based on the Baldrige criteria and has been used in VHA for several years to assess facility commitment to service quality. The modified version of the QSS incorporated into the NQIS instrument consisted of 42 questions representing five dimensions: management efforts to promote quality, the availability and use of quality-related data, planning for quality, human resources and quality improvement, and overall quality focus. All QSS questions utilized a five-point response scale ranging from “strongly disagree” to “strongly agree.” Five subscale scores were created by averaging respondents’ answers to the items associated with each of the five dimensions listed above. An overall QSS summary score was then created by averaging together the five subscale scores. The higher this QSS score, the stronger the perceived commitment to service quality.

### **(3) Leadership Commitment to Quality**

Mid-level managers were asked a series of 10 questions about whether they believe their facility's top management team was committed to and involved in efforts supporting total quality improvement.<sup>1</sup> These items also utilized a 5-point agree/disagree response scale and were averaged together to create a summary scale score for each staff member. The higher the scale score, the stronger the perceived commitment to quality among top leadership at that facility.

### **(4) Performance Goals, (5) Evaluation & Feedback, (6) Reward & Recognition**

Employees were also asked a series of 5-point agree/disagree questions about whether they believed:

- their own **performance goals** were related to service quality
- they received adequate **evaluation and feedback** about their performance
- efforts to improve service quality were **recognized and rewarded** at their facility.

Each of these groups of survey items was averaged to create a summary scale. Items were scored so that a higher scale score was indicative of a stronger perception of synergy between the job characteristic in question – performance goals, evaluation and feedback, rewards and recognition – and the goal of service quality.

These measures are summarized in Table 1 below.

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<sup>1</sup> In an effort to shorten the survey, an item that did not enhance the reliability of the Leadership scale was dropped in 2000. The 1997 and 1998 scores for this scale were then recomputed without that item. The Leadership scores that appear throughout this report are for this shortened, revised scale and therefore may differ slightly from Leadership scores that appear in previous NQIS reports.

Table 1  
Summary of Study Measures

Measure	Interpretation	Score Range
Risk Taking Culture	Facility culture emphasizes innovation and risk taking	0-100
Group Culture	Facility culture emphasizes teamwork and cooperation	0-100
Hierarchical Culture	Facility culture emphasizes rules and conformity with established processes and procedures	0-100
Rational Culture	Facility culture emphasizes efficiency, productivity, and the achievement of performance goals	0-100
QSS Scale	Facility is committed to total quality improvement	1-5
Leadership	Facility top managers are committed to quality improvement	1-5
Performance Goals	Job performance goals are related to service quality improvement	1-5
Evaluation & Feedback (1997 and 1998 only)	Staff receive sufficient feedback regarding their performance	1-5
Reward & Recognition (1997 and 1998 only)	Efforts to improve service quality are recognized and rewarded	1-5

## Main Findings

**Response Rate.** Questionnaires were mailed to staff at 141 VHA facilities in 2000 as compared to 147 facilities in 1998 and 161 facilities in 1997. This change in the number of facilities over the life of the project reflects facility integrations.

Nationally, completed questionnaires were received from 52 percent (n=8454) of staff contacted in 2000 (n=16,405). This compares to response rates of 62 percent in 1998 and 70 percent in 1997. This decline in response rate may reflect “survey fatigue” on the part of VHA staff. Also, due to administrative complications, the survey procedure followed in 2000 involved a longer delay between first and second questionnaire mailings than in previous years. This procedural variation may also account for the decline in participation.

As a consequence of this decline, the 2000 results should be interpreted with greater caution than past results. Response rates for individual facilities for 2000 may be found in Appendix A.

**Organization Culture (Figure 1).** Over the three years of the study, staff rated facility culture as increasingly bureaucratic (up from a baseline allocation of 41 out of 100 total points in 1997 to 44 points in 2000) and less risk taking and innovative (down to 13/100 from a baseline of 15/100). Ratings of group orientation/teamwork also declined from about 21 percent to 19 percent. Ratings of the level of rational/task orientation were stable at about 24 out of 100 possible points over this same period.

**Quality System Survey (QSS) Scale (Figure 2).** Staff perceptions of their facility’s overall commitment to total quality improvement (TQI) have hovered around 3.4 on the 5-point scale. Given that 4 equals “Agree” on this scale, this score suggests only modest commitment and orientation toward TQI, and the lower score in 2000 suggests that even this may be slipping.

**Leadership (Figure 2).** This scale was based on responses from mid-level managers (service chiefs) only and reflects their perceptions of the commitment of top management at their facilities to continuous quality improvement. Scores for all three years were about midway between 3 (neutral) and 4 (agree) and suggest only modest perceived commitment to TQI. The 2000 score of 3.3 was a statistically significant decrease from 1998. Factoring in the lower response rate in 2000, it is best to regard that decline as a potential early warning signal that requires further confirmation.

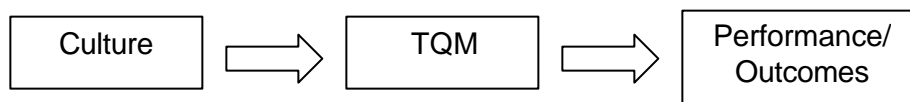
**Performance Goals (Figure 2).** This scale assessed staff perceptions of the extent to which their performance goals were related to and emphasized service quality. Scores on this scale were stable at about 3.7 out of 5 over all three years of the study. Given that 3 was the neutral mid-point of the scale and 4 indicated “Agree,” scores on this measure suggest that a majority of staff saw some reference to service excellence in their performance goals, but that this was not the dominant value represented in their performance expectations.

**Evaluation and Feedback (Figure 2).** The Evaluation and Feedback score has been stable at about 3.4 out of 5, suggesting that staff do not feel that they receive adequate constructive feedback regarding their performance nor have information available to assess their own progress.

**Reward and Recognition (Figure 2).** With scores of 3 or less on the 5-point disagree/agree scale, Reward and Recognition has been the least favorably rated of the five measures of quality focus. Respondents did not feel that their efforts to improve service quality were being noticed and reinforced.

## Significance of Findings

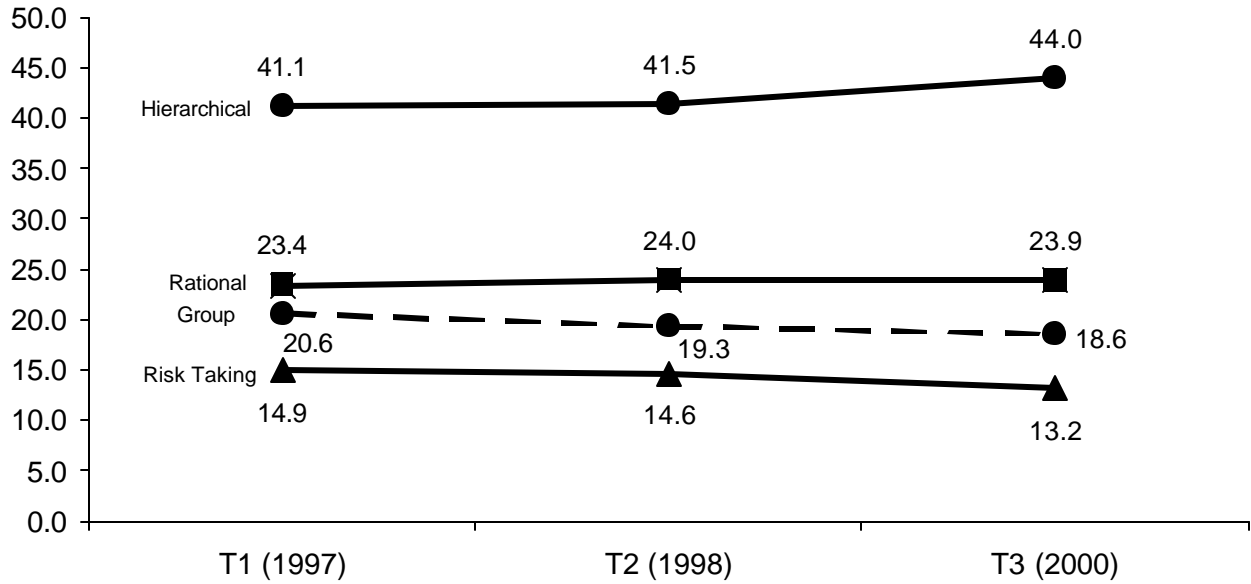
Why should we care about these findings? The measures included in the NQIS were selected because of the evidence in the research literature that an organizational culture that emphasizes empowerment, autonomy and risk-taking is related to the implementation of total quality management in healthcare, and that TQM in turn has a positive impact on performance and outcomes (see Appendix C). In summary:



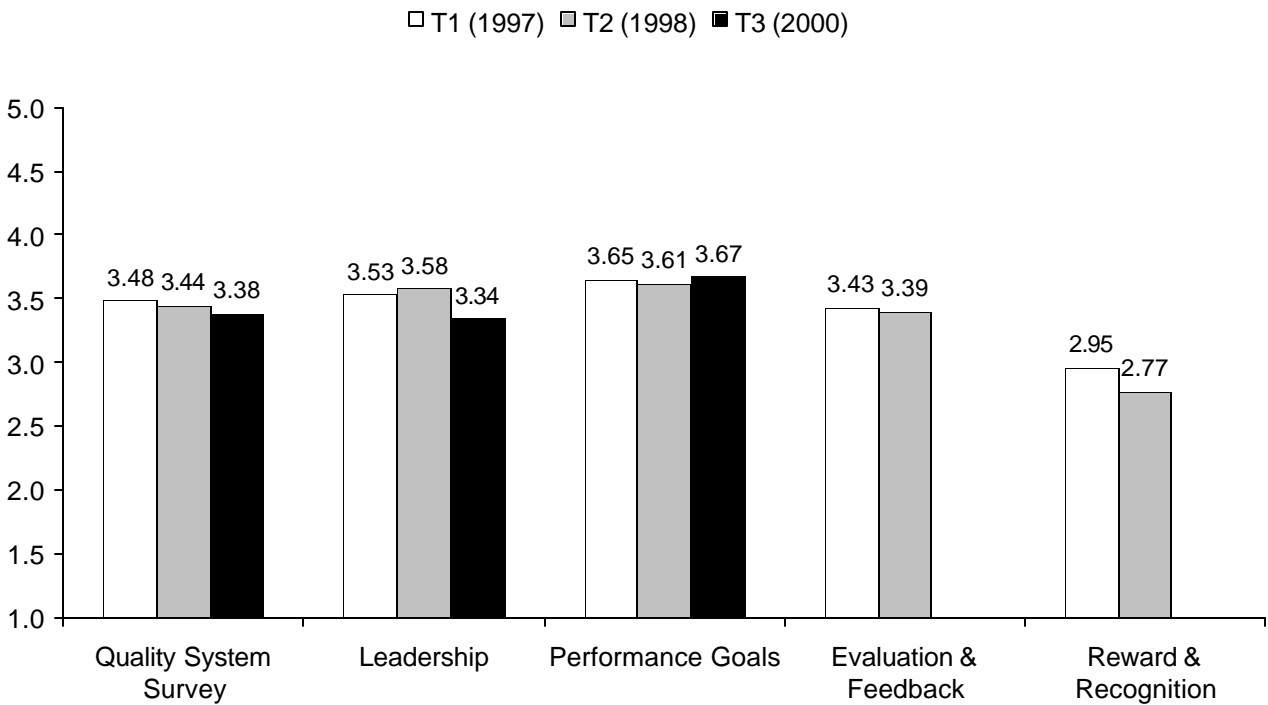
In addition, the QSS scale used to measure TQM implementation was based on the Baldrige Award dimensions of leadership, information and analysis, human resource utilization, quality management, and strategic quality planning.

Overall, then, the three-year trends from the NQIS survey suggest that VHA’s organizational culture is becoming less participative, flexible and entrepreneurial and more hierarchical and bureaucratic. This in turn could lead to less leadership support for TQM, a deterioration of the values and reward infrastructure necessary to sustain a focus on customer service, and less front-line initiative to make process improvements – in short, a more negative VHA profile on the Baldrige criteria. In the longer run, the cumulative effect of these changes could result in a decline in performance and quality outcomes.

**Figure 1**  
**Three Year Culture Trends: VA National Averages**  
 Scale: 0-100 / Higher score indicates greater similarity to respondent's facility



**Figure 2**  
**Measures of Quality Focus: VA National Averages**  
 Scale: 1=Strongly Disagree, 2=Disagree, 3=Neither, 4=Agree, 5=Strongly Agree



# National VA Quality Improvement Survey 2000 Report

## 2. Network Results

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## National VA Quality Improvement Survey 2000 Report: Network Results

### Introduction

This chapter consists of the following:

1. **VISN Summary.** A written overview of the results for your VISN, including a description of the low and high performing facilities.
2. **VISN Overview Table.** A one-page table that reports the VISN average and the VA national average for each measure for each of the three survey administrations (1997, 1998, 2000). This table also reports the number of facilities within your VISN that were significantly different from the national average and the number of facilities that changed significantly over time on each measure.
3. **Facility Breakout Tables.** This section consists of a series of seven tables, one for each of the NQIS measures for which comparable data was available for all three data collections: the four culture dimensions (risk taking, group, hierarchical and rational), plus the QSS, Leadership and Performance Goals scales. For each measure, individual facility scores are reported for the three NQIS administrations. Facility scores that were significantly different from the national average are flagged. The VISN and national averages are included for reference.

Each table also reports for each facility the change in score from 1998 to 2000, and from 1997 to 2000. Changes that were sufficiently large to be statistically significant are flagged.

In the case of facilities that were involved in mergers, separate scores are reported in pre-merger years. After the merger, scores for the combined system are listed under the division whose station number was retained. If the merger occurred between two NQIS survey administrations, change scores across that time period were not computed for the combined system because it would not be possible to distinguish between true change and change due to the aggregation of data across multiple facilities. Such cases are flagged as NA (not applicable) in the change score column.

A small number of facilities opted not to participate in the NQIS survey in one year or another. These facilities are flagged as NA (not available) for the year(s) in question.

Response rate information for your VISN overall and for each facility within the VISN may be found in Appendix A.



## VISN 8 Summary

- **Overview:** From 1997 to 2000, VISN 8 scores declined significantly on four of the five NQIS measures: Risk Taking Culture, Group Culture, QSS Score, and Leadership. From 1998 to 2000, VISN 8 scores declined significantly on Risk Taking Culture and Leadership. In 2000 most VISN 8 facility scores were similar statistically to VHA national averages.
- **Weaknesses:** From 1997 to 2000, West Palm Beach declined significantly on Risk Taking Culture and Group Culture. For both of these dimensions, the declines at West Palm were the largest observed at any facility nation-wide. Over the same period Miami and West Palm Beach declined on the Leadership scale, with the decreases at Miami being the largest observed at any facility for that time period. From 1998 to 2000, West Palm Beach declined significantly on both Risk Taking Culture and Group Culture -- the first and third largest declines at any facility for those dimensions, respectively -- and Miami and Tampa declined on the Leadership scale. Despite the large declines at some facilities, the scores at most VISN 8 facilities were statistically equivalent to VHA national averages in 2000. The exceptions were West Palm Beach, which scored significantly below the national average for Group Culture, and Miami, which scored significantly below the national average for Leadership.
- **Strengths:** None of the facilities in VISN 8 improved significantly from 1997 to 2000, and only one VISN 8 facility improved significantly from 1998 to 2000. Specifically, Tampa scored significantly better on Performance Goals in 2000 than in 1998. In addition, Tampa scored above the VHA national average on Leadership in 2000, while Miami scored above average on Performance Goals.

## VISN 8 Overview Table

Number of facilities surveyed: six in 1997, seven in 1998, six in 2000

Scale	Year	VA National Average	VISN Average	Number of Facilities					
				Significantly Different from VA National Average		Changed Significantly from 1998 to 2000		Changed Significantly from 1997 to 2000	
				Below	Above	Decreased	Increased	Decreased	Increased
<b>Risk Taking Culture</b>	<b>1997</b>	14.90	16.65	0	1				
	<b>1998</b>	14.64	14.52	1	1	1	0	1	0
	<b>2000</b>	13.20	12.23	0	0				
<b>Group Culture</b>	<b>1997</b>	20.61	22.49	0	0				
	<b>1998</b>	19.32	19.09	0	0	1	0	1	0
	<b>2000</b>	18.57	16.32	1	0				
<b>Hierarchical Culture<sup>1</sup></b>	<b>1997</b>	41.13	37.41	2	0				
	<b>1998</b>	41.45	42.23	0	0	0	1	0	1
	<b>2000</b>	44.00	44.44	0	0				
<b>Rational Culture</b>	<b>1997</b>	23.41	23.45	1	0				
	<b>1998</b>	23.96	24.11	0	1	0	1	0	1
	<b>2000</b>	23.89	26.09	0	3				
<b>QSS Score</b>	<b>1997</b>	3.48	3.61	0	2				
	<b>1998</b>	3.44	3.50	0	2	0	0	0	0
	<b>2000</b>	3.38	3.45	0	0				
<b>Leadership</b>	<b>1997</b>	3.53	3.88	0	3				
	<b>1998</b>	3.58	3.59	0	1	2	0	2	0
	<b>2000</b>	3.34	3.34	1	1				
<b>Performance Goals</b>	<b>1997</b>	3.65	3.80	0	1				
	<b>1998</b>	3.61	3.71	0	2	0	1	0	0
	<b>2000</b>	3.67	3.73	0	1				
<b>Evaluation and Feedback</b>	<b>1997</b>	3.43	3.53	0	2				
	<b>1998</b>	3.39	3.47	0	1	NA	NA	NA	NA
	<b>2000</b>	NA	NA	NA	NA				
<b>Reward and Recognition</b>	<b>1997</b>	2.95	3.20	0	3				
	<b>1998</b>	2.77	2.85	1	1	NA	NA	NA	NA
	<b>2000</b>	NA	NA	NA	NA				

<sup>1</sup>For hierarchical culture, lower scores/declining scores would generally be regarded as more favorable.

**VISN 8 Facility-Specific Breakdown Tables**

National VA Quality Improvement Survey (NQIS) Results

VISN=8  
Risk Taking Culture

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	16.93		16.41		14.06		- 2.35		- 2.87	
MIAMI FL	13.40		13.68		11.13		- 2.55		- 2.27	
W PALM BEACH FL	24.43	SD+	18.67	SD+	10.81		- 7.85	SC-	- 13.6	SC-
GAINESVILLE FL	15.55		13.73		11.12		.	NA	.	NA
LAKE CITY FL	15.81		12.76		.		.	NA	.	NA
SAN JUAN PR	.		11.88	SD-	11.39		- 0.49		.	NA
TAMPA FL	13.78		14.49		14.85		0.36		1.07	
VISN Average	16.65		14.52		12.23		- 2.29	SC-	- 4.42	SC-
VHA National Average	14.90		14.64		13.20		- 1.44	SC-	- 1.70	SC-

- (a) Joint values are reported for integrated facilities.
- (b) Significant difference (SD) compared to VHA national average (95% confidence interval)  
 SD+ = Significantly above national average  
 SD- = Significantly below national average
- (c) Significant change (SC) over time (95% confidence interval)  
 SC+ = Significant improvement  
 SC- = Significant decline  
 NA = Not appropriate: integration occurred between the two data collections involved, or  
 Not available: non-participating facility for one or both data collections

National VA Quality Improvement Survey (NQIS) Results

VISN=8  
Group Culture

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	21.58		23.92		20.60		- 3.32		- 0.98	
MIAMI FL	17.88		17.54		17.22		- 0.32		- 0.66	
W PALM BEACH FL	25.20		17.86		9.19	SD-	- 8.66	SC-	- 16.0	SC-
GAINESVILLE FL	23.55		17.10		18.02		.	NA	.	NA
LAKE CITY FL	26.22		23.72		.		.	NA	.	NA
SAN JUAN PR	.		17.19		17.74		0.55		.	NA
TAMPA FL	20.53		16.30		15.18		- 1.12		- 5.35	
VISN Average	22.49		19.09		16.32		- 2.77		- 6.17	SC-
VHA National Average	20.61		19.32		18.57		- 0.75		- 2.05	

- (a) Joint values are reported for integrated facilities.
- (b) Significant difference (SD) compared to VHA national average (95% confidence interval)  
 SD+ = Significantly above national average  
 SD- = Significantly below national average
- (c) Significant change (SC) over time (95% confidence interval)  
 SC+ = Significant improvement  
 SC- = Significant decline  
 NA = Not appropriate: integration occurred between the two data collections involved, or  
 Not available: non-participating facility for one or both data collections

**National VA Quality Improvement Survey (NQIS) Results**

VISN=8  
Hierarchical Culture

Note. For hierarchical culture, lower scores/declining scores would generally be regarded as more favorable.

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	37.27		37.82		42.84		5.01		5.56	
MIAMI FL	44.38		46.40		46.00		-0.41		1.62	
W PALM BEACH FL	27.57	SD-	38.82		47.84		9.02	SC+	20.27	SC+
GAINESVILLE FL	35.32	SD-	45.09		44.75		.	NA	.	NA
LAKE CITY FL	37.35		38.79		.		.	NA	.	NA
SAN JUAN PR	.		40.42		43.05		2.63		.	NA
TAMPA FL	42.57		48.24		42.17		-6.08		-0.40	
VISN Average	37.41		42.23		44.44		2.21		7.03	SC+
VHA National Average	41.13		41.45		44.00		2.55	SC+	2.87	SC+

(a) Joint values are reported for integrated facilities.

(b) Significant difference (SD) compared to VHA national average (95% confidence interval)

SD+ = Significantly above national average

SD- = Significantly below national average

(c) Significant change (SC) over time (95% confidence interval)

SC+ = Significant increase

SC- = Significant decrease

NA = Not appropriate: integration occurred between the two data collections involved, or  
Not available: non-participating facility for one or both data collections

National VA Quality Improvement Survey (NQIS) Results

VISN=8  
Rational Culture

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	24.21		22.12		24.10		1.97		-0.12	
MIAMI FL	24.34		21.80		23.03		1.23		-1.31	
W PALM BEACH FL	22.80		26.44		27.94	SD+	1.50		5.14	SC+
GAINESVILLE FL	25.58		24.71		26.57		.	NA	.	NA
LAKE CITY FL	20.62	SD-	22.95		.		.	NA	.	NA
SAN JUAN PR	.		28.87	SD+	27.28		-1.59		.	NA
TAMPA FL	23.13		21.91		27.64	SD+	5.73	SC+	4.51	
VISN Average	23.45		24.11		26.09	SD+	1.98		2.64	SC+
VHA National Average	23.41		23.96		23.89		-0.07		0.48	

(a) Joint values are reported for integrated facilities.

(b) Significant difference (SD) compared to VHA national average (95% confidence interval)

SD+ = Significantly above national average

SD- = Significantly below national average

(c) Significant change (SC) over time (95% confidence interval)

SC+ = Significant improvement

SC- = Significant decline

NA = Not appropriate: integration occurred between the two data collections involved, or  
Not available: non-participating facility for one or both data collections

National VA Quality Improvement Survey (NQIS) Results

VISN=8  
QSS Score

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	3.65		3.69	SD+	3.50		-0.18		-0.14	
MIAMI FL	3.55		3.42		3.47		0.05		-0.08	
W PALM BEACH FL	3.49		3.49		3.25		-0.24		-0.24	
GAINESVILLE FL	3.65	SD+	3.45		3.47		.	NA	.	NA
LAKE CITY FL	3.77	SD+	3.51		.		.	NA	.	NA
SAN JUAN PR	.		3.61	SD+	3.45		-0.16		.	NA
TAMPA FL	3.56		3.36		3.53		0.16		-0.03	
VISN Average	3.61	SD+	3.50		3.45		-0.06		-0.17	SC-
VHA National Average	3.48		3.44		3.38		-0.06		-0.10	

(a) Joint values are reported for integrated facilities.

(b) Significant difference (SD) compared to VHA national average (95% confidence interval)

SD+ = Significantly above national average

SD- = Significantly below national average

(c) Significant change (SC) over time (95% confidence interval)

SC+ = Significant improvement

SC- = Significant decline

NA = Not appropriate: integration occurred between the two data collections involved, or  
Not available: non-participating facility for one or both data collections

National VA Quality Improvement Survey (NQIS) Results

VISN=8  
Leadership

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	3.65		3.48		3.43		-0.06		-0.22	
MIAMI FL	4.12	SD+	3.68		3.02	SD-	-0.67	SC-	-1.10	SC-
W PALM BEACH FL	.	SD-	3.33		3.48		0.15		.	NA
GAINESVILLE FL	4.04	SD+	3.72		3.18		.	NA	.	NA
LAKE CITY FL	3.72		.	SD-	.		.	NA	.	NA
SAN JUAN PR	.		3.33		3.35		0.02		.	NA
TAMPA FL	3.89	SD+	4.00	SD+	3.59	SD+	-0.41	SC-	-0.31	
VISN Average	3.88	SD+	3.59		3.34		-0.25		-0.54	SC-
VHA National Average	3.53		3.58		3.34		-0.24	SC-	-0.20	SC-

(a) Joint values are reported for integrated facilities.

(b) Significant difference (SD) compared to VHA national average (95% confidence interval)

SD+ = Significantly above national average

SD- = Significantly below national average

(c) Significant change (SC) over time (95% confidence interval)

SC+ = Significant improvement

SC- = Significant decline

NA = Not appropriate: integration occurred between the two data collections involved, or  
Not available: non-participating facility for one or both data collections



National VA Quality Improvement Survey (NQIS) Results

VISN=8  
Performance Goals

Name of Facility	FY97 Score (a)	FY97 Sig Diff(b)	FY98 Score (a)	FY98 Sig Diff(b)	FY00 Score (a)	FY00 Sig Diff(b)	FY98- FY00 Change	FY98- FY00 Sig Change(c)	FY97- FY00 Change	FY97- FY00 Sig Change(c)
BAY PINES FL	3.79		3.84		3.73		-0.11		-0.07	
MIAMI FL	3.59		3.72		3.88	SD+	0.16		0.28	
W PALM BEACH FL	3.72		3.76		3.49		-0.27		-0.23	
GAINESVILLE FL	3.96	SD+	3.60		3.79		.	NA	.	NA
LAKE CITY FL	3.89		3.71		.		.	NA	.	NA
SAN JUAN PR	.		3.98	SD+	3.72		-0.26		.	NA
TAMPA FL	3.84		3.39		3.80		0.42	SC+	-0.03	
VISN Average	3.80	SD+	3.71		3.73		0.02		-0.06	
VHA National Average	3.65		3.61		3.67		0.06		0.02	

(a) Joint values are reported for integrated facilities.

(b) Significant difference (SD) compared to VHA national average (95% confidence interval)

SD+ = Significantly above national average

SD- = Significantly below national average

(c) Significant change (SC) over time (95% confidence interval)

SC+ = Significant improvement

SC- = Significant decline

NA = Not appropriate: integration occurred between the two data collections involved, or  
Not available: non-participating facility for one or both data collections

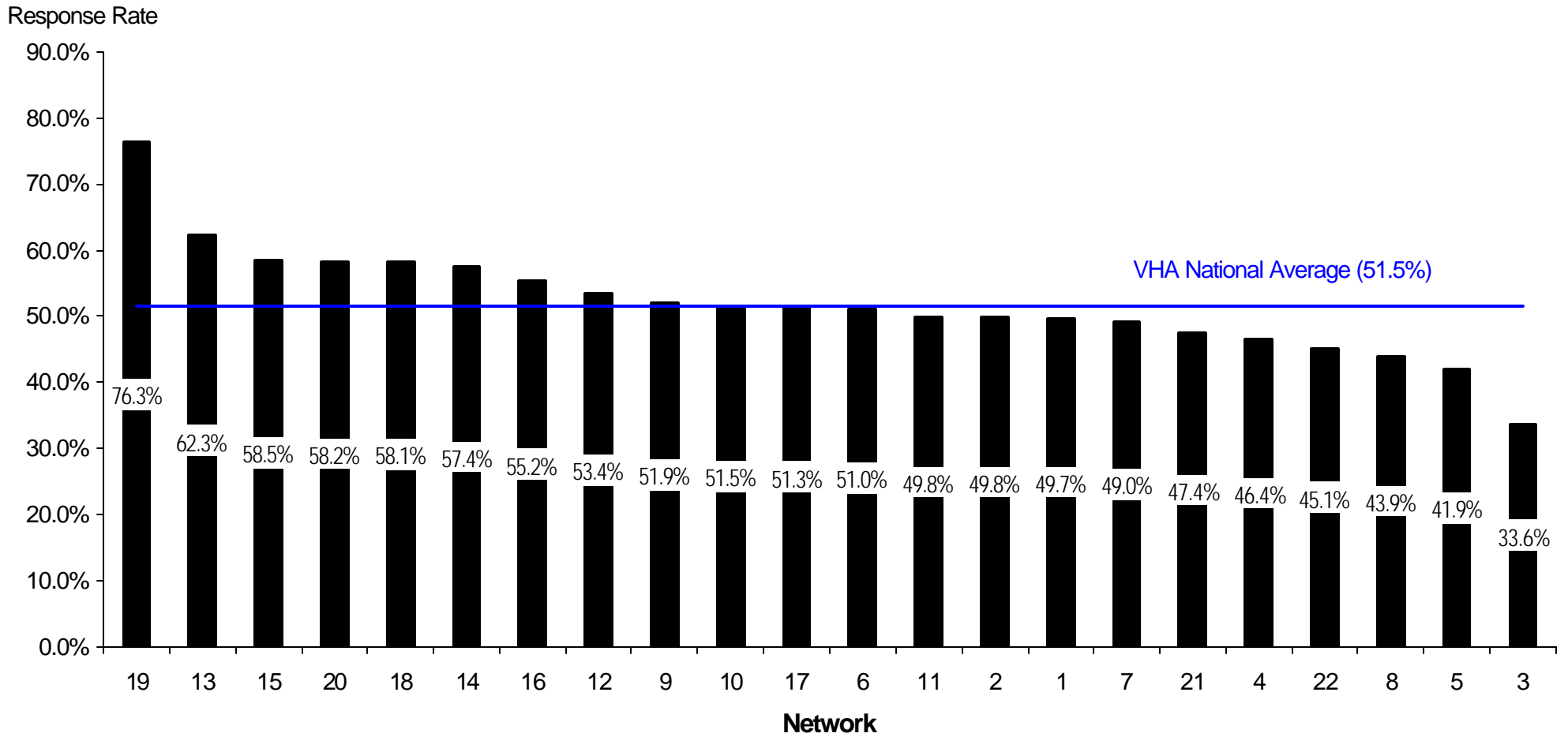


## National VA Quality Improvement Survey 2000 Report

### 3. Appendices

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**Appendix A, Figure 1**  
**Response Rates by VISN**  
**National Quality Improvement Survey (NQIS) 2000**  
 Response Rate = (N Respondents/N Contacted) x 100  
 Sample: All Respondents (Managers and General Staff Combined)



**Appendix A, Table 1**  
**VISN 8 Response Rates by Facility**  
**National VA Quality Improvement Survey 2000**

VISN	STA3N	Facility Name	General Staff				Managers				Total						
			Selected	Unable to Contact <sup>1</sup>	Contact-ed	Responded Count Pct <sup>2</sup>	Selected	Unable to Contact <sup>1</sup>	Contact-ed	Responded Count Pct <sup>2</sup>	Selected	Unable to Contact <sup>1</sup>	Contact-ed	Responded Count Pct <sup>2</sup>			
8	516	BAY PINES FL	125	6	119	60	50.4%	27	2	25	14	56.0%	152	8	144	74	51.4%
8	573	GAINESVILLE FL	127	15	112	56	50.0%	25	1	24	11	45.8%	152	16	136	67	49.3%
8	546	MIAMI FL	125	0	125	48	38.4%	26	0	26	13	50.0%	151	0	151	61	40.4%
8	672	SAN JUAN PR	125	5	120	37	30.8%	24	0	24	12	50.0%	149	5	144	49	34.0%
8	673	TAMPA FL	128	15	113	53	46.9%	27	2	25	8	32.0%	155	17	138	61	44.2%
8	548	W PALM BEACH FL	125	5	120	50	41.7%	21	0	21	13	61.9%	146	5	141	63	44.7%
8	ALL	VISN TOTAL	755	46	709	304	42.9%	150	5	145	71	49.0%	905	51	854	375	43.9%
ALL	ALL	VHA TOTAL	15086	1201	13885	7057	50.8%	2675	155	2520	1397	55.4%	17761	1356	16405	8454	51.5%

<sup>1</sup>Survey returned as undeliverable

<sup>2</sup>Respondents as a percent of the number contacted

**Appendix B**  
**National VA Quality Improvement Survey 2000**  
**Item-to-Scale Listing**

The following table lists the component items for each of the summary scales derived from the NQIS instrument and analyzed for this report.

With the exception of background information questions, all items utilized a 5-point Likert response scale as follows:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neither Agree nor Disagree
- 4 = Agree
- 5 = Strongly Agree

Scale: QSS Scale	
Subscale: Management Role	
Sample: General staff	
1.	The director of my facility works hard to promote an image of "quality first" to the facility community.
2.	My immediate supervisor makes quality a priority.
3.	Senior managers take an active part in promoting quality throughout my facility.
4.	My supervisor actively promotes quality throughout our service.
5.	People in this facility feel that quality is everyone's responsibility.
6.	Goals and objectives related to improving the quality of work in this facility are clearly spelled out.
7.	When employees attempt to improve quality, senior management is supportive and provides resources (such as time, money, etc.).
8.	In this facility, managers from all levels get involved in promoting quality.
9.	Senior managers have a thorough understanding of how to improve the quality of services.
10.	Senior management encourages all employees to think of the "customer" first, even if the "customer" happens to be another employee from a different part of the facility.
11.	The managers in my service take advantage of every opportunity to promote quality awareness among our external suppliers and vendors.

<b>Scale: QSS Scale</b> <b>Subscale: Information and Analysis</b> <b>Sample: General Staff</b>	
1.	In my service, we routinely collect quality data related to most of our important work.
2.	Whenever I need information on a quality issue, I can count on getting the data promptly.
3.	In my service, we try to use data about quality to prevent problems, not just fix them once they have occurred.
4.	In my service, when we discover a defect or problem in work, we set aside time to study the problem in order to find its cause.
5.	The right kinds of training on problem-solving techniques for improving quality have been made available to my service.
6.	In my service, we continually try to improve the use of data and information on quality.
7.	In my service, when we take action to improve quality we always follow up to see how successful our ideas are.

<b>Scale: QSS Scale</b> <b>Subscale: Planning for Quality</b> <b>Sample: General Staff</b>	
1.	I have a clear understanding of my service's goals and objectives for improving quality.
2.	My facility's long-range goal is to be the "quality leader" in health care.
3.	In my facility, non-managerial employees are playing a key role in setting priorities for quality improvement.
4.	In my service, the specific behaviors and actions required to meet service quality objectives are clear to employees.
5.	In my facility, we believe it is important to compare the quality of our work to that of similar facilities.
6.	In my service, we use the data we collect on the quality of our work for planning purposes.
7.	In my service, when we undertake an effort to improve the quality of our work we first look at successful strategies both inside and outside our facility.

<b>Scale: QSS Scale</b> <b>Subscale: Human Resources Utilization</b> <b>Sample: General Staff</b>	
1.	My supervisor is usually responsive to feedback from employees.
2.	In my facility, we are encouraged to take necessary risks to improve the quality of services.
3.	Senior management believes that people are the key to good quality.
4.	In my service, we are encouraged to participate as members of quality improvement teams.
5.	Senior management gives serious consideration to employee suggestions for improving quality.
6.	Employees in my service have control over their quality of work.
7.	Employees in my service serve or have served on quality improvement teams with employees from other services and/or other facilities.
8.	In my service, we are given sufficient training on how to evaluate and improve quality.
9.	In my service, the service chief makes an effort to recognize the employee for his/her contribution when the employee suggests a way to improve quality.
10.	Senior management provides employees with feedback related to how well the facility is doing in accomplishing its quality objectives.

<b>Scale: QSS Scale</b> <b>Subscale: Quality Assurance of Products &amp; Services</b> <b>Sample: General Staff</b>	
1.	The quality management staff effectively coordinate their efforts with other employees to improve the quality of services the facility provides.
2.	In my facility, we use information on patient preferences and desires as a basis for decisions about design of new programs and services.
3.	In my facility, we view quality as the joint responsibility of all services.
4.	In my facility, we have policies and guidelines designed to promote quality throughout the entire facility.
5.	In my facility, we view quality assurance as a continuing search for ways to improve.
6.	In my facility, we are always searching for better indicators of quality.
7.	In my service, we are encouraged to keep records of our quality measurements.

<b>Scale: Performance Goals</b> <b>Sample: General Staff and Managers</b>	
1.	My performance is evaluated against my progress toward accomplishing specific performance goals.
2.	My performance goals focus on my contribution to improving service quality.



<b>Scale: Evaluation and Feedback</b> <b>Sample: General Staff and Managers, 1997 &amp; 1998 Only</b>	
1.	My performance is evaluated against my progress toward accomplishing specific performance goals.
2.	I have access to the information I need to assess my own progress toward accomplishing my performance goals.
3.	My supervisor provides me with timely feedback about my progress toward accomplishing my performance goals.
4.	My supervisor provides me with constructive feedback about my progress toward accomplishing my performance goals.
5.	In developing my performance appraisal, my supervisor obtains feedback about my work from the employees with whom I work.
6.	My supervisor understands when errors or defects are outside my individual control.

<b>Scale: Reward and Recognition</b> <b>Sample: General Staff and Managers, 1997 &amp; 1998 Only</b>	
1.	Efforts to improve one's job skills are given recognition.
2.	Financial rewards are tied to individual and team contributions concerning improvements in service quality.
3.	Financial rewards for good work are distributed fairly among employees.
4.	Participation in teams is given recognition.

<b>Scales: Risk Taking Culture, Group Culture, Hierarchical Culture, Rational Culture</b> <b>Sample: General Staff</b>									
<p>This set of questions relates to your facility's culture. The following items contain four descriptions of health care facilities. Please distribute 100 points among the four descriptions depending on how similar each description is to your facility. None of the descriptions is any better than the others; they are just different.</p> <p><i>For example: In question 1, if Facility A seems very similar to mine, B seems somewhat similar, and C and D do not seem similar at all, I might give 70 points to A and the remaining 30 points to B.</i></p> <p><b>Facility Character (Please distribute 100 points)</b></p> <table> <tr> <td>4.</td> <td>70</td> </tr> <tr> <td>2.</td> <td>30</td> </tr> <tr> <td>3.</td> <td>0</td> </tr> <tr> <td>4.</td> <td>0</td> </tr> </table> <p>Each should total 100 points.</p>		4.	70	2.	30	3.	0	4.	0
4.	70								
2.	30								
3.	0								
4.	0								

1.	<p><b>Facility Character (Please distribute 100 points)</b></p> <p>A. _____ Facility A is a very personal place. It is a lot like an extended family. People seem to share a lot of themselves.</p> <p>B. _____ Facility B is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.</p> <p>C. _____ Facility C is a very formalized and structured place. Bureaucratic procedures generally govern what people do.</p> <p>D. _____ Facility D is very production oriented. A major concern is with getting the job done. People aren't very personally involved.</p> <p>Total = 100</p>
----	---

2.	<p><b>Facility Managers</b> (Please distribute 100 points)</p> <p>A. _____ Managers in Facility A are warm and caring. They seek to develop employees' full potential and act as their mentors or guides.</p> <p>B. _____ Managers in Facility B are risk-takers. They encourage employees to take risks and be innovative.</p> <p>C. _____ Managers in Facility C are rule-enforcers. They expect employees to follow established rules, policies, and procedures.</p> <p>D. _____ Managers in Facility D are coordinators and coaches. They help employees meet the facility's goals and objectives.</p> <p>Total = 100</p>
----	---

4.	<p><b>Facility Emphases</b> (Please distribute 100 points)</p> <p>A. _____ Facility A emphasizes human resources. High cohesion and morale in the organization are important.</p> <p>B. _____ Facility B emphasizes growth and acquiring new resources. Readiness to meet new challenges is important.</p> <p>C. _____ Facility C emphasizes permanence and stability. Efficient, smooth operations are important.</p> <p>D. _____ Facility D emphasizes competitive actions and achievement. Measurable goals are important.</p> <p>Total = 100</p>
----	--

3.	<p><b>Facility Cohesion</b> (Please distribute 100 points)</p> <p>A. _____ The glue that holds Facility A together is loyalty and tradition. Commitment to this facility runs high.</p> <p>B. _____ The glue that holds Facility B together is commitment to innovation and development. There is an emphasis on being first.</p> <p>C. _____ The glue that holds Facility C together is formal rules and policies. Maintaining a smooth running operation is important here.</p> <p>D. _____ The glue that holds Facility D together is the emphasis on tasks and goal accomplishment. A production orientation is commonly shared.</p> <p>Total = 100</p>
----	---

5.	<p><b>Facility Rewards</b> (Please distribute 100 points)</p> <p>A. _____ Facility A distributes its rewards fairly equally among its members. It's important that everyone from top to bottom be treated as equally as possible.</p> <p>B. _____ Facility B distributes its rewards based on individual initiative. Those with innovative ideas and actions are most rewarded.</p> <p>C. _____ Facility C distributes rewards based on rank. The higher you are, the more you get.</p> <p>D. _____ Facility D distributes rewards based on the achievement of objectives. Individuals who provide leadership and contribute to attaining the facility's goals are rewarded.</p> <p>Total = 100</p>
----	---

**Scale: Leadership**  
**Sample: Managers Only**

1.	The top management team is personally involved in setting quality assurance/improvement goals, objectives and plans.
2.	The top management team personally participates in quality assurance/improvement activities.
3.	The facility director is the biggest promoter of quality assurance/improvement values.
4.	The top management team is not as involved as it might be in teaching quality assurance/improvement to others.
5.	The top management team regularly reviews quality assurance/improvement principles and methods.
6.	The top management team is not as educated as it might be in quality assurance/improvement principles and methods.
7.	The top management team does not do as good a job as it might in establishing quality standards for suppliers of products and services needed by the facility.
8.	The top management team has a good understanding of physician needs.
9.	The top management team has a good understanding of external community needs.
10.	The facility at large looks to the top management team as a role model for implementing quality assurance/improvement values.

**Background Information**

The versions in which each background question appeared are indicated as follows:

- GS** = General staff
- MGR** = Managers
- ALL** = Both general staff and managers

1. GS	Which statement best describes your function at your facility? (Please select one.)  <input type="checkbox"/> Section Chief <input type="checkbox"/> Other Type of Manager/Supervisor <input type="checkbox"/> Non-Managerial Employee
2. GS	Do you work in a service line (also known as a product line, care line, patient care center, etc.)?  <input type="checkbox"/> Yes <input type="checkbox"/> No  If you answered "Yes" to Question #2, please proceed to Question #3. If you answered "No" to Question #2, please proceed to Question #6.
3. GS	In which service line (product line, care line, patient care center, etc.) do you work?  <input type="checkbox"/> Primary Care <input type="checkbox"/> Mental Health <input type="checkbox"/> Extended Care <input type="checkbox"/> Other _____ (Please specify.)

4. MGR	Which statement best describes your function at your facility? (Please select one.)  <input type="checkbox"/> Service Chief/ Department Head <input type="checkbox"/> Associate Chief of Staff (ACOS) <input type="checkbox"/> Service Line/ Care Line/ Product Line Manager <input type="checkbox"/> Other _____ (Please specify.)
5. MGR	If you checked the third box for question #4, is this full-time or collateral duty (i.e., do you serve dual functions)? (Please select one.)  <input type="checkbox"/> Full-Time <input type="checkbox"/> Collateral <input type="checkbox"/> Not Applicable
6. ALL	Is your service area clinical or administrative? (Please select one.)  <input type="checkbox"/> Clinical <input type="checkbox"/> Administrative
7. GS	If clinical, are you a: (Please select one.)  <input type="checkbox"/> Physician <input type="checkbox"/> Registered Nurse <input type="checkbox"/> Licensed Practical Nurse <input type="checkbox"/> Social Worker <input type="checkbox"/> Psychologist <input type="checkbox"/> Other _____ (Please specify.)
8. ALL	How long have you worked at this facility? (Please select one.)  <input type="checkbox"/> Less than one year <input type="checkbox"/> One to two years <input type="checkbox"/> Two to five years <input type="checkbox"/> Five to ten years <input type="checkbox"/> More than ten years

9. ALL	In what type of facility are you employed? (Please select one.)  <input type="checkbox"/> Medical Center <input type="checkbox"/> Freestanding Outpatient Clinic/CBOC <input type="checkbox"/> Satellite Outpatient Clinic <input type="checkbox"/> Freestanding Domiciliary <input type="checkbox"/> Other _____ (Please specify.)
10. ALL	If you selected "Medical Center" in Question #9, do you spend the <b>majority</b> of your time in any of the following components?  <input type="checkbox"/> Nursing Home <input type="checkbox"/> Domiciliary <input type="checkbox"/> Other _____ (Please specify.)  <input type="checkbox"/> Did not select "Medical Center" in Question #9.
<b>End of NQIS Question Listing</b>	

## Appendix C Significance of Findings: Background Information

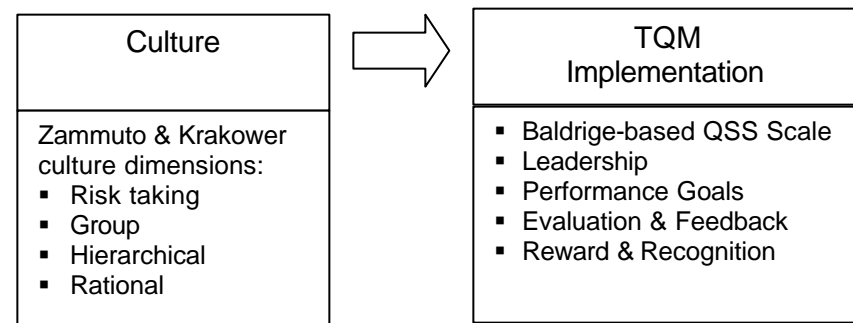
The importance of the VA National Quality Improvement Survey (NQIS) findings rests on the connections between culture, quality improvement, and performance. In a study of 61 hospitals involving data collected from over 7000 staff, Shortell, O'Brien and colleagues (1995) found a significant relationship between a participative, flexible, risk-taking culture and the implementation of continuous improvement/total quality management (CQI/TQM). CQI/TQM was, in turn, positively associated with better perceived patient outcomes and greater perceived human resource development.

In that same study, Shortell and colleagues also analyzed the relationship between quality improvement and clinical efficiency as objectively measured by length of stay and charge data for six high-cost/high-volume conditions: acute myocardial infarction, chronic obstructive pulmonary disease, congestive heart failure, pneumonia, stroke, and total hip replacement. They did not find a meaningful pattern of significant relationships between CQI/TQM implementation and these objective outcomes. However, Shortell did find that larger hospitals were less likely to have cultures that emphasized teamwork, empowerment, and risk-taking. Furthermore, when hospital size was *not* included in the prediction equation, CQI/TQM implementation was significantly associated with shorter LOS and lower charges in 11 of the 12 possible models (2 outcomes x 6 conditions). Taken together, Shortell interpreted this pattern of relationships between culture, CQI/TQM, bed size and outcomes to mean that larger hospitals experienced lower clinical efficiency (higher charges, longer LOS) in part because they tended toward more bureaucratic and hierarchical cultures that made the implementation of CQI/TQM more difficult.

An organizational culture that emphasized empowerment, autonomy and risk taking was also found to be associated with higher efficiency of utilization, lower nurse turnover, and better perceived outcomes within intensive care units (Shortell, Zimmerman et al., 1994), and with the staff satisfaction within VA long-term care facilities (Berlowitz, Young et al., under review).

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The NQIS incorporated the same measure of culture (Zammuto and Krakower, 1991) used by Shortell. Also following Shortell, the QSS component of the NQIS was based on the Baldrige Award dimensions of leadership, information and analysis, human resource utilization, quality management, and strategic quality planning. The leadership, performance goals, evaluation and feedback, and reward and recognition scales of the NQIS also measured the extent to which an ethic of customer service and a focus on process improvement have permeated the VHA value system. These relationships between key constructs and contents of the NQIS may be summarized as follows:



The studies discussed above suggest that TQM implementation, in turn, has an impact on delivery system performance and outcomes.

### References

- Berlowitz, D.R., Young, G.J., Hickey, E.C., Saliba, D., Mittman, B.S., Czarnowski, E., Simon, B., Anderson, J.J., Ash, A.S., Rubenstein, L.V., Moskowitz, M.A. (2002). Quality improvement implementation in the nursing home. Health Services Research (under review).
- Shortell, S.M., O'Brien, J.L., Carman, J.M., Foster, R.W., Hughes, E.F.X., Boerstler, H., & O'Connor, E.J. (1995). Assessing the impact of continuous quality improvement/total quality management: Concept versus implementation. Health Services Research, 30(2), 377-401.

Shortell, S.M., Zimmerman, J.E., Rousseau, D.M., Gillies, R.R., Wagner, D.P., Draper, E.A., Knaus, W.A., & Duffy, J. (1994). The performance of intensive care units: Does good management make a difference. Medical Care, 32(5), 508-525.

Zammuto, R.F. & Krakower, J.Y. (1991). Quantitative and qualitative studies of organizational culture. Research in Organizational Change and Development, 5, 83-114.