

Biomedical Document Delivery



DartDoc TN: 305694

Journal Title: The Joint Commission journal
on quality improvement

Volume: 21

Issue: 4

Month/Year: 1995

Pages: 155-166

Article Author: Nelson,

Article Title: Report cards or instrument
panels: who needs what?.

Call #: serial

Location: Dana

Item #:

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Report cards are useful when they help purchasers and regulators measure the "right things in the right way"; likewise, providers need instrument panels to help them "fly right."

PERFORMANCE MEASURES AND MEASUREMENT

Report Cards or Instrument Panels: Who Needs What?

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The authors wish to thank Diane Hall for her assistance in manuscript preparation and William Schults for providing excellent data analytic support.

This article discusses two related measurement tools: health care "report cards" and "instrument panels." First, the report card movement in health care is briefly reviewed—what it is, how it is perceived, and some of its strengths and weaknesses. Second, instrument panels, a newer concept in health care, are introduced along with some examples. The final section of the article attempts to synthesize these two developments and to demonstrate how these two potentially conflicting devices might be integrated into a single, larger framework.

Report Cards

The health care report card train has started rolling down the track. The rush to develop flashy report cards is on, and some examples are:

- *Many of the largest managed care organizations (MCOs) in California have issued their own report cards within the past year.¹*
- *The National Committee on Quality Assurance is running a pilot report card demonstration project involving 21 MCOs.²*
- *The Joint Commission on Accreditation of Healthcare Organizations (Joint Commission) is developing standardized clinical indicators for selected, high-volume clinical conditions/processes.³*
- *The Health Care Financing Administration (HCFA) is investigating the feasibility of developing a report card for Medicare MCOs.¹*

Article-at-a-Glance

Background: The report card movement in health care is a positive response to legitimate customer needs and requirements for comparative information on quality and costs. At the same time, providers have a legitimate concern about potential problems with gathering and using valid data in a prudent manner. Report cards have problems that often detract from their potentially constructive uses. In response to this concern, the authors propose that instrument panels—a newer concept in health care—compared to the static, judgmental image of report cards project an action-oriented, decision-making image.

Examples: Descriptions are given of three types of instrument panels based on work in progress in the

Dartmouth-Hitchcock health care system, a regional, integrated delivery system that serves the population of New Hampshire and parts of Vermont and Massachusetts: a 450-physician group practice (The Hitchcock Clinic), which provides more than one million visits per year in more than 25 locations; a tertiary health care facility (Mary Hitchcock Memorial Hospital) with more than 300,000 patient days; and a prepaid health plan (Matthew Thornton Health Plan) with approximately 120,000 members.

Summary: It would be wise and efficient for providers to design instrument panel data collection systems that can feed directly into report cards, leading to the triple benefit of enhancing accuracy, reducing total costs, and increasing overall utility to both providers and their customers.

■ *Pennsylvania and New York have published hospital- and surgeon-specific mortality rates.*⁴

■ *The Agency for Health Care Policy and Research (AHCPR) is exploring the potential for developing a report card for the nation's health care delivery system.*⁵

This is only a partial list of report card efforts underway. Doubtless the number of report card projects will continue to grow.

Who's driving the report card train? There are many "engineers," but chief among them are the purchasers of care who want measures of quality and cost. Health services researchers and health data vendors are also promoting report card developments; these groups are continuing to make progress on measuring what was considered unmeasurable only a few years ago. They are now finding an eager market for their measures and are eager to sell their products and services. Finally, perhaps surprisingly, some of the most progressive providers of care are issuing report cards on themselves to show their customers that they are concerned about service, quality, and cost, and these providers are "scoring" well in most measured dimensions.

Some Potential Abuses

The report card train is on track and gaining momentum. This development is a positive response to legitimate customer needs and requirements for comparative information on quality and costs. Many providers recognize their responsibility to meet this need.

At the same time, however, some providers have reservations about the wisdom of using report cards in

health care. Conversations that the authors have had with health care professionals have uncovered several concerns. Some fear that report cards will cause consumers to be misled. For example, a woman might think that, because other women have been satisfied with the maternity care delivered by Plan X, she also will be satisfied with her care from Plan X. Some question whether report cards will be used as an approach for finding "bad apple" providers. Is it more important to find out who is to blame or to learn what causes bad results? Some believe that the data used in today's report cards are included more because they are available rather than because they provide quantifiable answers to the critical questions. Some agree that report cards may show providers that improvements are needed, but point out that such reports will not show *how* to make improvements. It is one thing to know that something is good or bad, but it is a far different thing to know *why* something is good or bad. Some believe that, unless report card data are gathered and analyzed by independent, impartial third parties, the results could be manipulated to achieve competitive advantage. Some are concerned that report cards could add unnecessary costs to the health care delivery enterprise. Might providers focus improvement work on the areas measured by report cards, regardless of whether these should be the top priority areas for investing scarce improvement resources?

In short, just as consumers and purchasers have a legitimate need for valid data on the value of health care, providers have a legitimate concern about potential problems with gathering and using valid data in a prudent manner.

An Image Problem?

It is not hard to understand providers' skepticism, if one steps back and considers the image of a report card. Here are some concepts that come to mind when one thinks about the report card metaphor:

Report Card Image

JUDGMENTAL...STATIC...ANGER/FEAR/JOY

Who gets them?	Students
Who gives them?	Teachers
Focus?	Past
Who wins?	The A's
Who loses?	Everyone else
What's learned?	I'm above average, average, or below average

Although report cards are widely used in our educational systems, few would argue that report cards lead to breakthrough benefits. They may be a way to take stock and to summarize how much has been learned over the past grading period—compared to other students or to a gold performance standard. But, have report cards ever motivated anyone to win a Nobel Prize? It's unlikely. Have poor report cards demotivated many a student and caused long-term problems with self-esteem? Quite likely.

Some Potential Uses

Detractors of report cards can cite many possible problems and abuses. Despite the image problems that plague report cards, however, it must be recognized that they can be potentially constructive.

If report cards are able to measure the right things in the right way, then they might be used to

- *Help purchasers and providers decide where to "shop" for high-value care. Provide guidance as to which providers of care achieve the best clinical, functional, and satisfactory outcomes at the lowest cost.*
- *Hold providers accountable for health care outcomes and costs. Provide measures on the "goodness" of care that has been delivered in the recent past.*
- *Show trends in outcomes and costs. If data are gathered consistently over time, then improvements or decrements in quality and costs could be observed.*
- *Identify areas of provider strength and opportunities for improvement. For example, a provider may have excellent access to physician and emergency services, but have poor immunization rates and an extraordinary number of adverse health events.*
- *Identify benchmarking sources. Identify providers that consistently produce the best results over extended periods of time.*

If report cards are going to be used constructively—and the pitfalls discussed above avoided, then they need to meet the following requirements:

- *Reliability—the information is reliable. Would the answers be the same if the measuring stick were applied again?*
- *Relevance—the information is relevant. Does a given measure have a direct relationship to the outcomes of interest to specific individuals in specific settings?*
- *Prediction—the particular measure provides a rational basis for predicting what will happen in the future. Would you buy stock only on the basis of a specific price?*
- *Definitions—there are clear operational definitions of what is being measured. Do we know how to interpret a measure?*
- *Improvement utility—the particular measure helps those who are already trying to do their best. How do grades help people improve?*

The Health Employer Data and Information System (HEDIS) is a measurement system that is gaining widespread support among employers and MCOs. Corrigan and Nielsen, two developers of HEDIS, recognize both the potential value and limitations of report cards.² They have issued a warning to providers about the utility of report cards:

The best use of this information by health plans lies in their capitalizing on opportunities for improvement. To do so, however, plans will need to extend their measurement activity inward to understand their processes of care delivery.^{2, p 574.}

In other words, report cards may be able to identify areas of subpar performance or improvement opportunities, but they will not help providers know how to make improvements. This requires knowledge—both knowledge of subject matter and knowledge for improvement.⁶⁷ The next section shows how instrument panels can foster improvement know-how.

Instrument Panels

Just as the cockpit crew of a jet airplane need instrument panels to fly safely, health care delivery system leaders need instrument panels to manage wisely. They will need to develop measurement systems to support their capacity to manage and improve the complicated, integrated delivery systems they lead. They will need high-level instrument panels on total system performance as well as special-purpose instrument panels for key processes, such as patient access, and clinical processes (for example, adverse event monitoring).

The instrument panel concept is relatively new in general management theory and is only now starting to be applied to health care delivery. Kaplan and Norton have written in the *Harvard Business Review* about the "balanced scorecard" concept; the scorecard is a hybrid of report cards and instrument panel thinking.^{8,9} Recently Meyer described the "dashboard" for executives; this is closely related to the instrument panel concept presented below.¹⁰

Image

It is worthwhile to contrast the static, judgmental image of report cards with the action-oriented, decision-making image of instrument panels.

Instrument Panel Image

DECISION MAKING...DYNAMIC...EMPOWERED

- Who uses? Cockpit crew (pilot, copilot, navigator)
- Who interprets? Cockpit crew
- Focus? Present and future
- Utility? Real-time monitoring, predicting future, taking action

The instrument panel metaphor has an entirely different aura from that of the report card. It has a vitality, timeliness, and clear-cut utility that is absent from report card thinking. A key feature is providing critical, real-time information to the user to prompt wise decisions and—if need be—make rapid mid-course corrections. Most learners can imagine completing a course of study without feeling an overwhelming need to have a report card (although qualitative and quantitative feedback on performance might be appreciated, particularly if it is timely). However, it is impossible to imagine flying a jet-propelled aircraft that isn't fitted with a well-designed, properly functioning instrument panel.

Examples of Instrument Panels

In this section, three types of instrument panels are presented to illustrate the concept. All are based on work in progress in the Dartmouth-Hitchcock health care system. This is a regional, integrated delivery system that serves the population of New Hampshire and parts of Vermont and Massachusetts. Some of the main parts of the Dartmouth delivery system are: (1) a 450-physician group practice (The Hitchcock Clinic), which provides more than one million visits per year in more than 25 locations; (2) a tertiary health care facility (Mary Hitchcock Memorial

Hospital) with more than 300,000 patient days; and (3) a prepaid health plan (Matthew Thornton Health Plan) with approximately 120,000 members.

Total health care system performance: A high-level instrument panel. A good place to start instrument panel thinking is at the "30,000 foot" view of overall health care system performance. Figure 1 (p 160) shows a "high level" instrument panel designed by and for senior delivery system leaders to monitor overall performance. This figure includes statistical process control charts for key measures of system performance, such as patient access to care, patient satisfaction, general health outcomes, community image, employee/clinician satisfaction, referring physician satisfaction, employees' ratings of management process and information system performance, total volume of encounters, and net operating income.

Four instrument panels (similar to Figure 1) are produced monthly for the senior leaders who manage the clinic (northern and southern regions), the tertiary hospital, and the health plan. These instrument panels are based on the evolving "Measures of System Performance." The leadership team began planning the Measures of System Performance in January 1993 (based on Deming's concept of organizing as a "system of production"), and the measures were started in July 1993.¹¹ Based on an analysis of their delivery system, the leadership team decided that they needed monthly indicators to measure customer satisfaction, strategic initiatives, core business processes, and other facets of organizational performance such as these:

CUSTOMER SATISFACTION

- Patient Satisfaction
- Access to Care
- Community Image
- Physician Satisfaction
- Employer Satisfaction
- Employee Satisfaction

UTILIZATION AND FINANCIAL

- Volume
- Utilization
- Operating Margins
- Cost per Service
- Cost per Member per Month

HEALTH OUTCOMES

- Functional Health Status
- Clinical Care Indicators

STRATEGIC INITIATIVES

- Management Process
- Research
- Information Systems

The instrument panel in Figure 1 is produced each month to give senior leaders a 30,000-foot view of key performance measures for the northern region

of The Hitchcock Clinic. As an overview, this instrument panel is located at the beginning of the Measures of System Performance report and is followed by approximately ten pages showing more detailed analyses of each overall measure shown in Figure 1. For example, subsequent pages show the specific scores on individual submeasures of access to care, patient satisfaction, community image, and so on.

The "gauges" on the instrument panel shown in Figure 1 are X-bar control charts. Each control chart shows the average level of performance for each measure and the upper and lower control limits, which are calculated based on a conventional statistical process control formula, multiplying the average moving range by the constant of 2.66.¹² Clinic leaders can quickly scan the control chart instrument panel to check for special-cause variation, to identify desirable or undesirable trends (such as the occurrence of seven consecutive points above or below the mean), and to observe the level of variation and average performance.

The customer-based measures in Figure 1 are based on small random samples ($n=8$ per week or 32 per month) of several constituencies: patients with recent clinic visits, community residents, referring physicians, and employees. Confidential telephone interviews are conducted by independent research firms. The questionnaires include both fixed-response and open-ended items. Over the first 12 months of operation, response rates have averaged 83% for patients, 83% for employees, 67% for referring physicians, 58% for employers holding contracts with the health plan, and 44% for community residents. The phone interview protocol requires that up to eight call attempts be made at different times of the day and different days of the week.

A quick scan of Figure 1 shows that "special cause variation" is rare (for example, the occurrence of a single point outside the upper or lower control limit, seven or more consecutive points increasing or decreasing, or seven or more points above or below the mean line). There are no confirmed favorable trends even in an area such as Access, which has been targeted for special improvement. Variation in the customer satisfaction measures tends to be small whereas it is relatively great for the utilization and financial measures.

Focusing on the customer-based satisfaction measures, where average performance is shown in terms of the percentage of the maximum achievable score pos-

sible, the averages for the first 12 months by customer groups are as follows: 75% for patients, 65% for employees, 71% for referring physicians, 87% for access, 70% for functional health, 61% for community image, and 58% for management process. The main action senior management should take based on the July 1994 results is to investigate reasons for lack of improvement in areas that had been targeted for change and to ask whether any of the key measures have too much variation or are performing at unacceptable levels.

The highlights of Figure 1 are printed on the back of the instrument panel, which senior leaders receive; see Figure 2 (p 161).

Access to medical care: A core process instrument panel. Different instrument panels are needed by different groups with different needs. Whereas the control chart-type instrument panel in Figure 1 was designed by senior leaders for monitoring strategic areas and managing performance variation in critical processes, the process-based access instrument panel shown in Figure 3 (p 162) is used by the middle-level management team in the southern region. Senior leaders have charged the team with the responsibility of improving patients' access to physician services and to information via telephone.

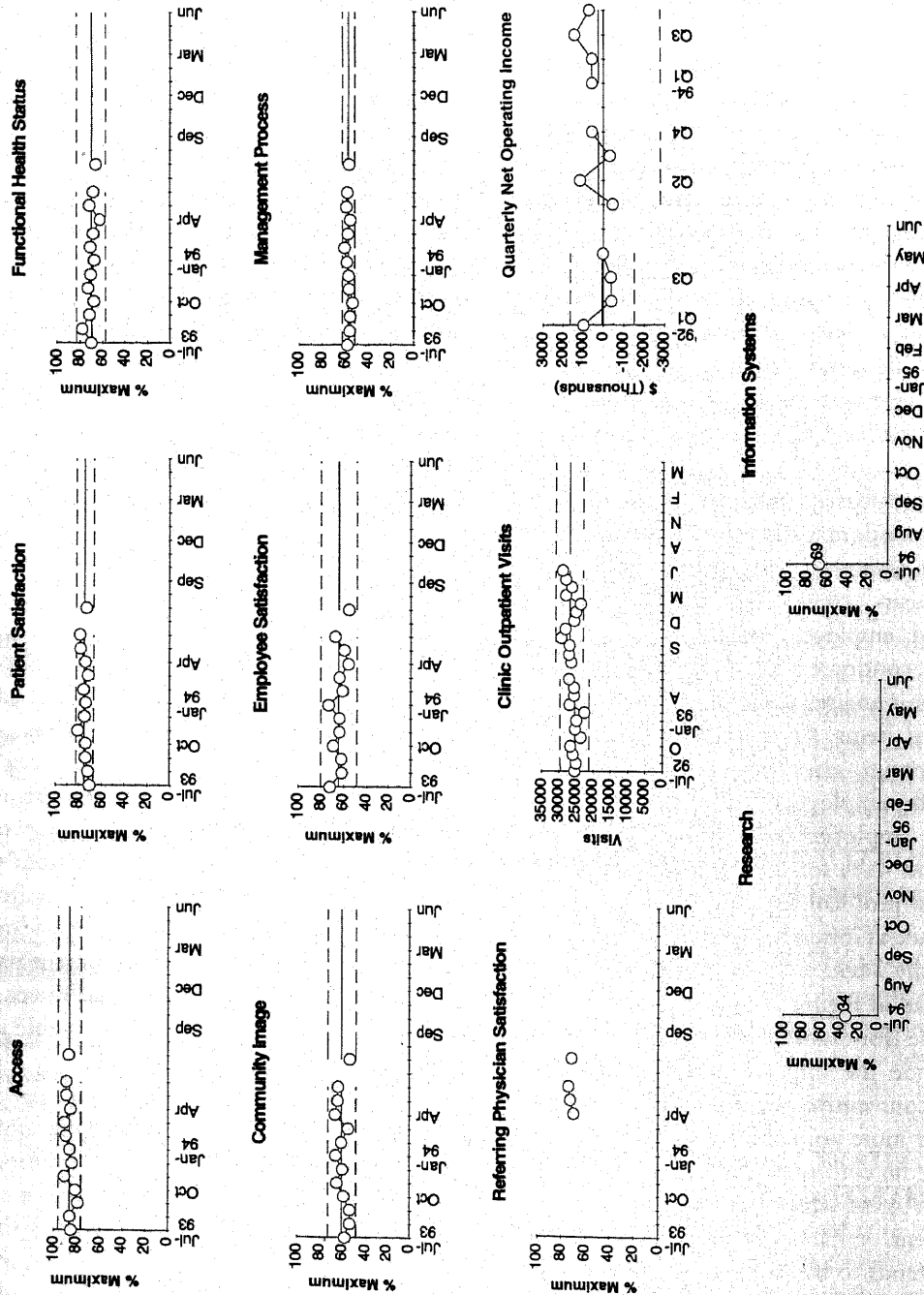
Access measures in Figure 3 are displayed in relation to key steps in the process. In effect, each step in the process is measured by a set of related gauges. The data used to make these gauges come from interviews with randomly selected patients who are asked questions about each specific step in the visit access process or telephone access process. Randomly selected patients ($n=8$ per week) are asked specific questions about each process step, thereby providing the raw data to construct the "access instrument panel" using the patients' satisfaction ratings and direct reports on how long things took or if they were able to see their preferred clinician.

A payoff of the access instrument panel is that it provides the users with highly specific, process-based gauges to pinpoint high-leverage subprocesses that must be redesigned to make substantial gains in access. This is an example of measures that can show people *how* to make improvements in high-level indicators.

This instrument panel, which is used by the southern region access improvement team, shows that

- *All three divisions need to decrease waiting times in both the waiting and exam rooms—in all three cases,*

**INSTRUMENT PANEL:
The Hitchcock Clinic—Northern Region Monthly Measures of System Performance**



The Instrument Panel summarizes the Monthly Measures of System Performance. A complete report is available from the Office of the President.

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Figure 1. A control chart-type instrument panel: Monthly Measures of System Performance for The Hitchcock Clinic's Northern Region.

HIGHLIGHTS Measures of Performance (MSP) Northern Region - July 1994

- **Instrument Panel:** All customer-based measures remain in statistical control. For the 12 months of FY 1994 the means for these measures range from 61% maximum achievable for Community Image, 65% for Employee Satisfaction, 75% for Patient Satisfaction, and 87% for Access.
 - **Access:** All respondents scheduling their appointments by telephone rate the ease of this as very good or excellent. More than 7 in 10 respondents were very satisfied with the wait associated with scheduling their appointment and the wait in the exam room.
 - **Patient Satisfaction:** About 4 in 10 patients rated overall clinician quality a perfect 10. Bragging edged out complaining by a margin of about 3 to 1.
 - **Functional Health Status:** About 3 in 10 respondents rated their overall health as excellent. Between 30% and 50% of patients reported either some limitations due to physical or emotional problems or some interference with daily work or social activities.
 - **Community Image:** Respondents heard more complaints than brags over the past 3 months. This 2 to 1 margin helped to push the composite score below the average percent maximum achievable for the previous 12 months.
 - **Employee Satisfaction:** Complaints exceeded brags for nonphysician employees, while the opposite was true for physician responders. This, coupled with slightly lower rating of overall work place quality by physicians, helped in moving the composite score for this month below the average of the prior 12.
 - **Management Process:** For both physicians and nonphysician groups their immediate supervisors's willingness to let them try new methods was a strength. About 10% of nonphysicians rated leadership communication of a clear mission as excellent; none of the physician respondents rated it as excellent.
 - **Referring Physician Satisfaction:** The operational definition of this measure has been expanded. Brags outstripped complaints and the rating of the overall referral process ranged from 4 to 10. Six in 10 referring physicians rated access for their patients as excellent. About 4 in 10 rated communication as excellent.
 - **Research:** This measure is being reported for the first time this month. Between 15% to 20% of physician respondents rated administrations' support and value of research and their time to do research as very good. Individual physician rating of their own research productivity ranged from 1 to 8, with 10 being the best. The average number of publications identified in print was about 13.
 - **Information Systems:** This measure is being reported for the first time this month. Employee ratings of the information systems ranged from 1 to 9 with over 60% being 7 or higher.
- Operational Definitions including the newly identified measures will be available on the DHMC [Dartmouth-Hitchcock Medical Center] file server in the Measures of System Performance Folder during the month of September.
- A copy of the current MSP report will also be available on the DHMC file server in the Measures of System Performance Folder during the month of September.

DESCRIPTION OF MEASURES

- **Access:** Patient satisfaction with access to care from the clinic.
- **Patient Satisfaction:** Patient ratings of quality of care recently received from the clinic.
- **Functional Health Status:** Patient-based data on health status postcare.
- **Community Image:** Community resident view of the goodness of the clinic as a place to receive care.
- **Employee Satisfaction:** Employee ratings of the quality of the clinic as a place to work.
- **Management Process:** Employee ratings of leaders and cooperation.
- **Referring Physician Satisfaction:** Physician ratings of the goodness of DHMC as a place to refer their patients.
- **Volume of Services:** Clinic Outpatient Visits (the sum of Medical and Surgical visits in all Lebanon outpatient locations), Outreach Visits (the sum of visits to all outreach locations), and Admissions (the sum of hospital inpatient, inpatient psychiatric, and newborn admissions).
- **Profitability:** Quarterly and year-to-date net operating income.
- **Research:** Physician rating of support, value, and research productivity.
- **Information systems:** Employee rating of the information systems.

Figure 2. Reverse side of Figure 1: "Highlights" for Measures of System Performance—The Hitchcock Clinic's Northern Region Instrument Panel.

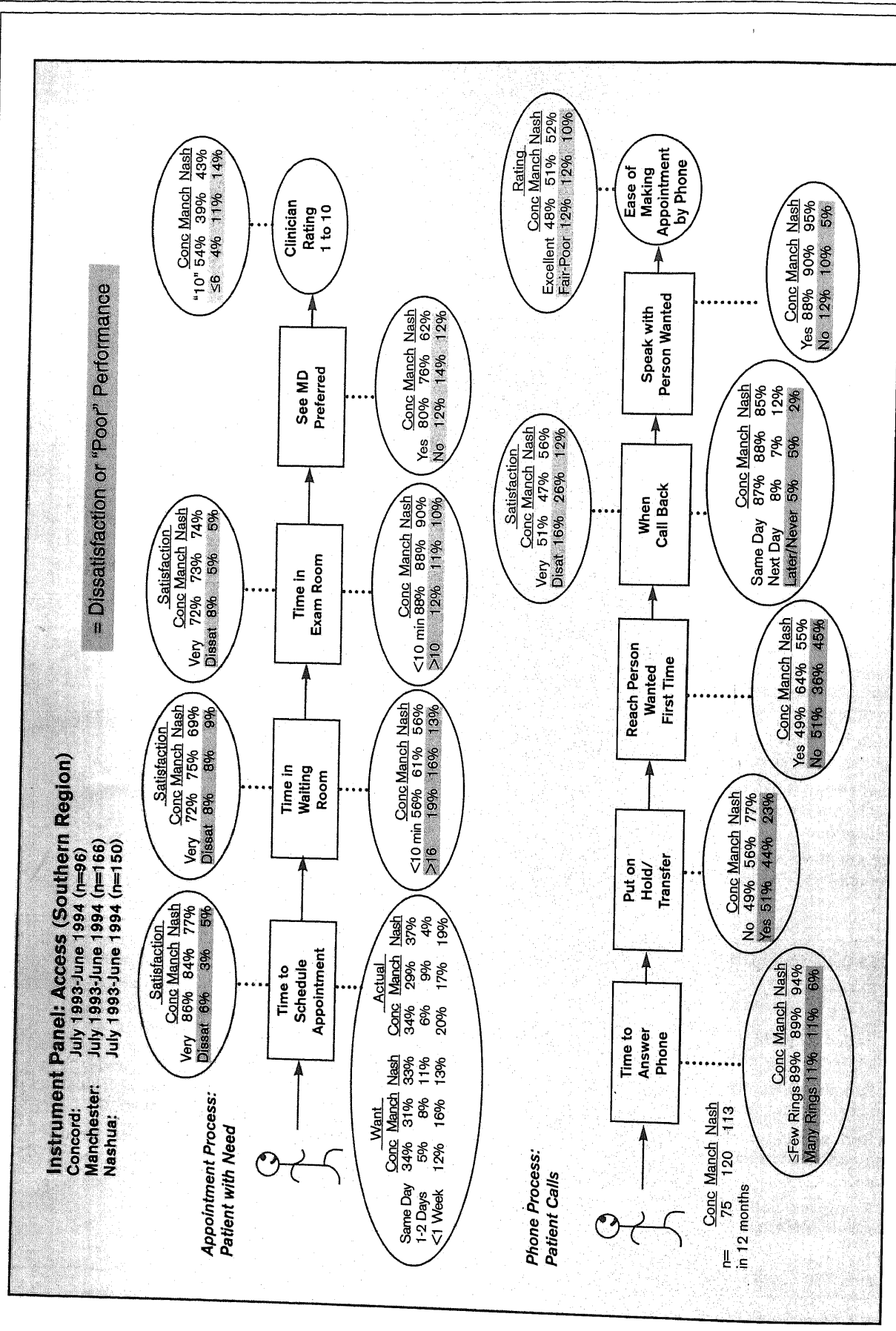


Figure 3. A process-based instrument panel: patient access to care for The Hitchcock Clinic's Southern Region.

more than 10% of respondents report waiting more than the acceptable time.

■ While Nashua appears to answer the phone quickly enough, both Concord and Manchester are too slow for more than 10% of their patients' calls.

■ All divisions could examine their telephone processes to better understand why a quarter to half of their patients say that they are transferred or put on hold too many times.

■ Manchester could carefully examine and improve its phone call return process, since one quarter of its patients report being dissatisfied with how long it takes to have a call returned.

Sternal wound infection: A gauge from a clinical instrument panel. Just as instrument panels can be used to manage and improve a core aspect of system performance such as access to services, they can also be used to manage the clinical quality of medical and surgical care. The cardiovascular surgery team in the northern region of the Dartmouth system uses an instrument panel (updated weekly) to manage and improve the care of revascularization patients. The revascularization instrument panel is displayed on the bulletin board outside the section chief's office. It includes more than ten gauges for coronary artery bypass graft and percutaneous transluminal coronary angioplasty patients. These gauges provide time-trended data on mortality, morbidity, complications, and use of resources.

Figure 4 (p 164) shows one of the gauges on the open heart surgery instrument panel; it is the gauge for monitoring postoperative sternal wound infection, which is a serious complication. Figure 4 indicates trends in chest wound infection rates following heart surgery over the time period extending from July 1, 1987 to July 10, 1994. The height of the vertical bar shows the number of consecutive patients who did not experience a sternal wound infection. Therefore, the higher each vertical bar, the lower the rate of infection. These data are gathered continuously, with each operation coded as positive or negative for sternal wound infection.

The vertical bars in Figure 4 reveal an important clinical story. The incidence of sternal wound infections was stable at an overall rate of 2.4%, represented by a median run length (number of successive cases without infection) of 28. At about halfway through run number 61 (noted on horizontal axis), a well-intentioned, seemingly minor change in the process was instituted in preparing the surgical incision site.

The change was expected to have no adverse impact on the rate of infection. However, the infection-free case runs dipped dramatically and six consecutive vertical bars were substantially shorter than earlier bars. This signaled special cause variation, which the clinical team hypothesized might be due to the change in the surgical preparation process. The team reinstated the old surgical preparation process on run number 67 (since the new surgical preparation process had been associated with the rise in infection rates). The impact of this change was not immediate (that is, runs 68-70 were still short). However, at run number 71, the infection rate improved to better levels. In this case, continuous instrument panel-type monitoring of a clinical measure with a graphic and statistical technique prompted early detection of a problem and generated a plausible, testable hypothesis about a major assignable cause of infections that could be corrected.

Using Instrument Panel Data to Feed Into Report Cards

It would be wise and efficient for providers to design instrument panel data collection systems that can feed directly into report cards. This would have the triple benefit of enhancing accuracy, reducing total costs, and increasing overall utility to both providers and their customers.

To illustrate how this might work, one could use the access data, shown in Figure 3, twice—once for instrument panels and again for report cards. The instrument panel data disaggregates the information to display results for each of three delivery sites (Concord, Manchester, and Nashua), and it shows several access indicators. This is critical information for the providers but is more information than the area's purchasers need. The purchaser's access report card measure would show the aggregate results for managed care patients seen over the prior calendar year and would focus on just one or two key access indicators (for example, satisfaction with time to schedule appointment and satisfaction with ease of making appointments by phone). In fact, this is precisely what happened when one of the health maintenance organization's major corporate purchasers agreed to use the instrument panel measures to meet its access report card measurement need. In this instance, the purchaser believes that these new instrument panel access measures will provide it with more accurate and useful information than in the past.

Providers could design their instrument panels

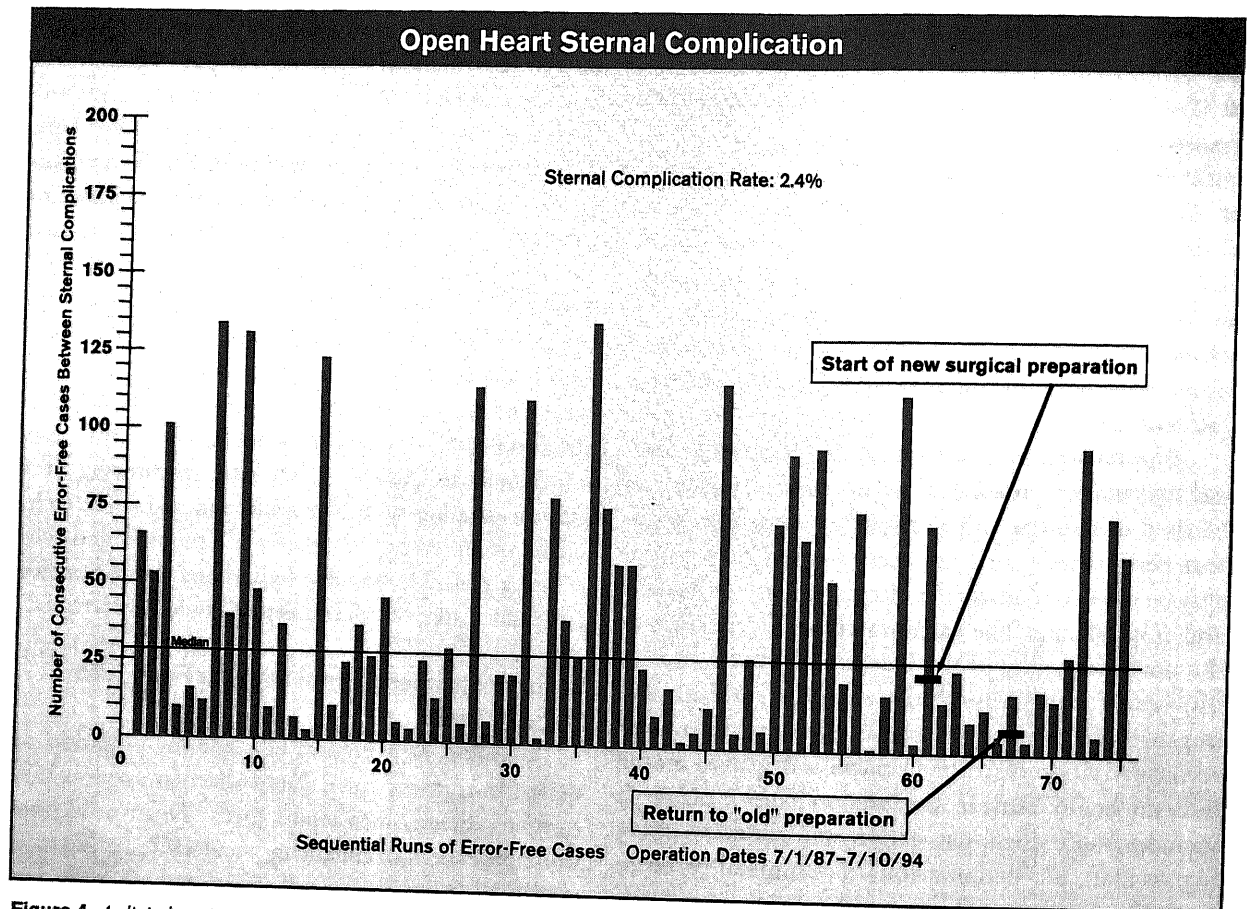


Figure 4. A clinical monitoring instrument panel: number of heart surgery patients with sternal wound infection-free cases for Northern Region.

with the dual aims of meeting internal provider requirements (to learn about variation in performance within the system) and simultaneously meeting external purchaser requirements (to provide a basis for making judgments about the goodness of access to care).

Instrument Panels and Improvement Knowledge

Designing and using instrument panels might help to increase providers' knowledge for improvement. As Batalden and Stoltz suggest,⁶ Deming's system of "profound knowledge" covers four interrelated dimensions—systems thinking, variation, psychology, and prediction/theory of knowledge.¹¹ The instrument panels discussed above hold promise in furthering knowledge for improvement:

- *Systems thinking—graphic displays of key processes and interdependencies;*
- *Variation—control charts showing ranges and averages;*
- *Psychology—studying employees' viewpoint; and*
- *Prediction and theory of knowledge—control charts and formal improvement trials.*

Conclusion: Report Cards and Instrument Panels

This article discusses both the problems and possibilities associated with report cards, as well as presenting the potential value of instrument panels with some examples. Perhaps report cards and instrument panels can best be considered as different tools for different stakeholders with different needs. For example:

ISSUE	REPORT CARD	INSTRUMENT PANEL
Main User	Purchasers	Providers
Main Use	Judgment, Accountability	Control, Improvement
Time Frame	Past	Present, Future
Focus	Outcomes, Charges	Process, Outcomes, Costs

Purchasers and regulators could benefit from report cards—if they measured the right things in the right way—to make judgments about who to select as a

provider, to evaluate the provider's past performance, and to promote accountability. At the same time, providers need instrument panels to "fly right"—to monitor and control critical processes, to correctly identify positive and negative trends, and to take wise and swift action to safeguard health and promote bet-

ter quality and value. Perhaps in the not too distant future, purchasers will recognize that they also need instrument panels to improve their ability to predict future levels of quality and cost, and thereby better manage their health care costs proactively. ■

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**Technical Appendix A
Measurement Operational Definitions
The Hitchcock Clinic-Northern Region**

ACCESS: Patient-based data on the goodness of access to recently received care from the clinic.

- **Scheduling Ease:** "How would you rate the ease of making this appointment by phone?" (Q17)
- **Requested Provider:** "Was your appointment scheduled with the person you wanted to see?" (Q21)
- **Schedule Wait Satisfaction:** "How satisfied were you with waiting (the amount of time you waited between when the appointment was made and the date you were scheduled to be seen)?" (Q20)
- **Waiting Room Satisfaction:** "How satisfied were you with how long you waited in the waiting room?" (Q23)
- **Exam Room Satisfaction:** "How satisfied were you with how long you waited in the exam room?" (Q25)

PATIENT SATISFACTION: Patient-based data on goodness of care recently received from the clinic.

- **Complained:** "During the past three months have you complained about The Hitchcock Clinic to anyone?" (Q44)
- **Bragged:** "During the past three months have you bragged about The Hitchcock Clinic to anyone? [By

'bragged,' we mean had such a good experience with some aspect of the clinic that you told other people in very positive or even glowing terms.]" (Q42)

- **Condition:** "How would you rate your physical health and emotional condition now, compared to how you felt before you saw (provider)?" (Q12)
- **Amount Helped:** "How much do you think you were helped by that visit to (provider seen)?" (Q11)
- **Overall MD Quality:** "Now, think of the best possible medical care provider. If that person scores 10 on a scale of 1 to 10, how would you rate (...provider... during your appointment on date)?" (Q15)

COMMUNITY IMAGE: Community resident-based data on the goodness of the clinic as a place to receive care.

- **Complain:** "During the past three months have you heard anyone complain about The Hitchcock Clinic?" (Q38)
- **Brag:** "During the past three months, have you heard anyone brag about The Hitchcock Clinic? [By 'brag,' we mean had such a good experience with some aspect of the clinic that they told you about it in very positive or even glowing terms.]" (Q36)

- **Overall MD Quality:** "Think about the best possible place to get care from doctors in this region—that is, New Hampshire, Vermont, Massachusetts, and Maine. If that place scores 10 on a scale of 1 to 10, how would you rate The Hitchcock Clinic?" (Q35)

EMPLOYEE SATISFACTION: Employee-based data on the goodness of The Clinic as a place to work.

- **Complained:** "During the past three months have you complained about (THC as a place to work)?" (Q19)
- **Bragged:** "During the past three months have you bragged about (THC as a place to work)?" (Q18)
- **Overall Workplace Quality:** "Think about the best possible place to work. If that place scores 10 on a scale of 1 to 10, how would you rate (THC as a place to work)?" (Q14)

FUNCTIONAL HEALTH STATUS: Patient-based data on health status postcare.

- **Emotional:** "During the past four weeks, how much have you been bothered by emotional problems such as feeling anxious, depressed, irritable, or downhearted and blue?" (Q36)
- **Pain:** "How much bodily pain have you generally had during the past four weeks?" (Q35)
- **Physical:** "In the past four weeks, to what extent did health problems limit you in your everyday physical activities, such as walking and climbing stairs?" (Q34)
- **Social:** "During the past four weeks, to what extent has your physical and emotional health interfered with your social activities with family, friends, neighbors, or groups?" (Q38)
- **Daily Work:** "During the past four weeks, how much difficulty did you have doing your daily work, both

inside and outside the house, because of physical health or emotional problems?" (Q37)

- **Overall Health:** "In general, would you say your health is: (excellent to poor)?" (Q33)

UTILIZATION MEASURES: Volume of services.

- **Clinic Visits:** The sum of medical and surgical visit units in all Lebanon outpatient locations.
- **Outreach Visits:** The sum of visits to outreach locations.
- **Admissions:** The sum of hospital inpatient, inpatient psychiatric, and newborn admissions.

PROFITABILITY: Year-to-date and quarterly net operating income.

MANAGEMENT PROCESS: Employee-based data on the goodness of leadership activities.

- **Recognition:** "How well do leaders treat, appreciate, and support employees?" (Q11)
- **Mission:** "How well do leaders communicate company goals to all employees?" (Q10)
- **Cooperation:** "How well do other departments cooperate with your department, communicate with you, and help you out?" (Q9)
- **Communication:** "Your immediate supervisor's willingness to let you know when and how your work could be improved?" (Q8)
- **Methods:** "Your immediate supervisor's willingness to allow you to try out new ways to do your work?" (Q7)

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