September 30, 1996

Mr. Michael Decter
APM
1235 Bay Street - Suite 602
Toronto, Ontario
CANADA

via Federal Express (tel 416-966-9848)

Dear Mr. Decter:

Art Spiegel and I met last Friday. We discussed issues facing APM and the rest of CSC in developing a health care growth strategy. We agreed that fundamental market changes represent both short and long term opportunities for CSC's portfolio of capabilities. Initiatives in new areas like applications software may also be opportunities (or necessities).

We discussed INPUT assisting APM and CSC in planning these initiatives. INPUT (and myself) have considerable background in IT services and software markets, including health care. We have assisted numerous companies in strategy development, competitive analysis, and entry into new markets.

Art asked me to send you and Michelle Fatibene material about INPUT. Also enclosed are

- Excerpts from a recent study INPUT performed on hospital applications directions.
- A focused analysis on PACE/BAsys which I prepared for Jim Kagen.

If you have any questions, do not hesitate to call me.

Sincerely,

Thomas O'Flaherty
Vice President

Attachments

cc. Art Spiegel (letter only)

September 30, 1996

Ms. Michelle Fatibene
12 Farms Road
Bedford, NY 10506

via Federal Express (tel 914-234-0183)

Dear Ms. Fatibene:

Art Spiegel and I met last Friday. We discussed issues facing APM and the rest of CSC in developing a health care growth strategy. We agreed that fundamental market changes represent both short and long term opportunities for CSC's portfolio of capabilities. Initiatives in new areas like applications software may also be opportunities (or necessities).

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Thomas O'Flaherty
Vice President

Attachments

cc. Art Spiegel (letter only)

August 16, 1996

Mr. James Kagen
Director
APM
1675 Broadway
New York NY 10019

via fax 212-903-9301 Page 1 of 10

Dear Jim:

Thank you very much for the morning I spent with Lisa and Frank last week. I came away with a better idea of where APM is positioned from a software standpoint. I hope my comments were useful.

At the meeting I said I would provide more information on how INPUT could assist you with these software issues:

- Who (and what) is the market for PACE/BASys?
- What should be the direction and contents of the next generation of APM software?
- What are the distribution options for APM software? [In the analysis provided below, this appears to be a subset of the preceding bullet.]

As I got into the analysis, I began to realize what you already know: These are complex, tricky issues, which can have an important bearing on APM's mainstream business, as well as on your relationship with the rest of CSC.

The remainder of this letter contains my preliminary analysis. Passages **in bold** are suggestions on how INPUT can assist you. After further discussion to see if we're on the right track, I can submit a more formal proposal.

The Market for PACE/BASys

To understand the market for your specific products, I think you have to understand the market for clinical performance databases generally. There are at least three sets of issues:

- Functional requirements
- Intensity of needs
- Timing of need

Functional Requirements

APM should have a detailed, non-anecdotal understanding of the evolving requirements of clients and prospects. The following questions are illustrative of those which need to be addressed:

- Should a clinical performance database be a single integrated database? In the APM context, this would mean, potentially, an integrated BASys/PACE product.
- What changes to current BASys/PACE capabilities are necessary to keep up with market needs? Examples:
    - Extensions to current functionality
    - Additions to functionality (e.g., ambulatory, outcomes)
    - Dealing with the charge/cost issue
- What about new customer sets, notably Managed Care Organizations?

An important issue for APM is the extent to which customers want the value delivered by means of a software product, by consulting services or a combination of the two.

Intensity

The "intensity" of customer needs is a key factor. One of the pitfalls we have seen in product planning is using quantitative or qualitative information about customer needs without scaling the relative importance.

- As you noted in our meeting, it is not clear how many of those involved in hospital IT management actually understand the uses of clinical performance database information.

- For those in hospital management that do understand the issues, what level of value do they place on clinical performance databases? How much will this change over time?

- How will they be using clinical database information to improve performance, now and in the future?

- The bottom line, of course, is how much they intend to spend. I believe that it will be difficult to obtain precise, reliable information right now on expected spending (as opposed, say, to asking similar question on software plans in the manufacturing sector). This will have to estimated and inferred.

Exhibit 1 shows my concept on how the market analysis might play out, from the standpoint of functionality and intensity:

- A high level of need may be narrowly or broadly focused (upper half of diagram).

- If the intensity of intentions is not well understood, an broad opportunity could turn out to be unattractive (lower right).

Timing

From APM's standpoint there may be a lot of difference if the take-off point is 1997 as opposed to 1999. Different markets may have different needs over time, as shown in Exhibit 2. (Let me stress that Exhibit 2 is to illustrate principles; without more data and analysis I doubt if anyone can say what the actual circles and lines will be in Exhibit 2 -- contrast lines "a" and "b".)

INPUT can perform structured interviews with current and past APM clients as well as non-clients to understand their current and future requirements. If their current needs -- or likely future needs -- are not being met now we can help to determine the extent to which APM can meet a particular need of customers, that is,

- **Can APM meet a need easily and quickly?**
- **Can APM meet a need with some difficulty?**
- **Would APM find it very difficult (or impossible) to meet a need?**

We can use the data and understanding from the hospital research INPUT performed earlier this year as one of the foundations of our analysis.

The Next Generation of APM Software

From APM's standpoint, I think the most important strategic questions are

- Does the market, on balance, want a standalone clinical performance database product? OR,
- Does the market want a clinical performance database that is part of an integrated hospital system?

Either alternative could present APM with a valuable, perhaps unique, opportunity. The "standalone" opportunity is fairly obvious -- that is the direction you're going in now. APM's opportunity in connection with the integrated clinical performance database may not be quite as obvious. My reasoning is contained in the next few paragraphs.

Integrated Hospital Software

The current direction of integrated hospital IT software is to link packages of functions or modules to a common operational database. This approach assumes there will be ultimately be enough operational data present to supply whatever is needed for a clinical performance database.

I don't think that this approach will gather the necessary information or manage it effectively.

My assumption is that in the next five years the clinical performance database will be the keystone and justification for integrated hospital IT systems in general. If this is true, then

- Integrated hospital systems should not hammered together out of traditional packages. (And many applications software companies may be in trouble.)

- Instead, integrated systems should be built up from the database level, driven in the first instance by clinical performance analysis needs.

- This is illustrated in Exhibit 3.

This assumption needs to be tested.

Integration Issues

These are key issues for APM because APM is of the few organizations with the critical mass of knowledge to help define and construct an integrated system driven by clinical performance improvement.

You shouldn't start building an integrated database just yet.

- First, you have to be convinced the market will be "ripe" for this sort of product two or three years from now (the time necessary to build a product).

- Next, and at least as important, what should APM do from a strategic standpoint? I have identified at least five major decision points affecting APM's future role in the software business (Exhibit 4).

The "CSC Dimension"

The analysis in Exhibit 4 does not touch what I will call the "CSC dimension", e.g.,

- Maybe CSC should, for these or other reasons, build or buy a software products to support hospital operations..

- There is an obvious tie-in with the HMO and health insurance outsourcing software and processing business.

- If clinical performance databases will be driving much of the hospital business, then this could very well help develop a broader outsourcing business.

We can help you address the issues shown in Exhibit 4. (The right sort of internal APM staff could do this if they had the luxury of enough time and there weren't too many organizational walls to climb over.)

I believe we can also help analyze and structure the "CSC dimension", since INPUT understands

- **A considerable amount about CSC and its overall objectives**
- **Health-related IT markets**
- **APM's own part of the business**

(I would have to know more about the overall CSC-APM relationship to be able to be more specific right now in describing our assistance.).

Summary

I think that we can add a lot of value to the decision process you will be going through concerning your software planning. INPUT can conduct the primary research, perform the analysis and draw up conclusions and recommendations that you can use.

I suggest that the next step be a meeting in early September where the issues raised in this letter will be discussed (plus any others that are appropriate). After that we can develop a concrete plan.

Sincerely,

Tom O'Flaherty
Vice President

Attachments

INPUT

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CONTACT REPORT

☐ MAIL LIST - SEE BACK

Non Client/Prospect File: ☐ Media ☐ Financial ☐ Other _____

Contact Date: 8/1/91

INPUT
Staff: Init._____ Init._____ ☐ INPUT office ☐ Client Office ☐ Other _____ Date Written: / /

Company	DISTRIBUTION: Action	Info.	By When	Prog./Proj. ID _____ Describe Action-F/U
Name Jim Kaya				
Title				
Address				
Phone: ( ) -				
Fax: ( ) -				

Broader question (CSC - dimensia)

↳ SI/OS issues - add

Some tactical

- Rapid Sol Dev Lab - not fleshed can it be moved out?
- Intranet - putting together

NO Serious work on

Talk after Sept 9 (Jim back)

Try to meet that week

☐ Continued over

Mail List Change Order ☐ Update ☐ Correction ☐ Deletion ☐ Addition* Serial Number_____

U.S. COMMERCIAL

1. TYPE ☐ Vendor ☐ User ☐ Investor / Financial ☐ Media / Press ☐ Other ☐ EDI Newsletter

2. LEVEL ☐ Executive ☐ Manager ☐ Analyst ☐ Acquisition ☐ International ☐ Other

3. INTERESTS ☐ C/S ☐ Computer Systems ☐ Networks ☐ EC ☐ Information Services —
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- ☐ Professional Services, SI
- ☐ Outsourcing, Processing, Network Services

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* No names will be added without a completed change order and program manager approval.

Program Manager Authorization _____

CONTACT REPORT Continuation

Company _____

Name _____

M&S 310 R 6/94

Ken Fallin

John Zissimos and Mickey Paxton

Paxton. Artists used special computer software to get the gulp just right.

Mr. Paxton also played with the puppet's age, first starting with an 80-year-old Sinatra. Then he gave the puppet a face-lift and more hair to make him more like 50. "That's the age we want him—that '60s thing, that Rat-Pack thing," he says.

Now the two men are daydreaming that the commercial will be just the first in a long-running series and are thinking about a new candidate for a celebrity puppet. "Someone . . . who sweats a lot," says Mr. Paxton.

Ad Notes. . . .

ACCOUNT WIN: Holiday Inn Worldwide handed its estimated $25 million ad account to **Fallon McElligott** of Minneapolis. Fallon beat out D'Arcy Masius Benton & Bowles, a unit of**McManus Group**; **BBDO Worldwide**'s BBDO South; and Cliff Freeman & Partners, part of **Cordiant's** Saatchi & Saatchi Advertising Worldwide agency. The incumbent, Young & Rubicam, didn't participate in the account review. Holiday Inn is a unit of Britain's Bass PLC.

WHO'S NEWS: Wunderman Cato Johnson, a unit of **Young & Rubicam**, said Joanne Zalac has been named director of client services for the New York office, a new position, and account managing director for American Express, coordinating American Express duties across all Y&R companies, including sister company Young & Rubicam Advertising. Previously, responsibility for coordinating American Express duties between sister companies had fallen to Mitch Kurz, who remains world-wide chief executive of Wunderman. Ms. Zalac, 35 years old, was an executive vice president at Wunderman in charge of consumer card services for American Express in the U.S.

WHO'S NEWS

Champy, Management-Book Author, Quits CSC Index to Join Perot Systems

By Alex Markels
Staff Reporter of The Wall Street Journal

James Champy, co-author of the best-selling book, "Reengineering the Corporation," and chief executive of consulting firm CSC Index, has resigned to join Perot Systems Inc.

Mr. Champy, 54 years old, will lead management-consulting efforts at the privately held Dallas computer-services concern, which had $350 million in revenue last year. The move is part of an effort to broaden the firm's offerings and to offer one-stop shopping for companies needing a strategy and the resources to implement it. Perot has recently hired several other high-profile management consultants, including former McKinsey & Co. partners Frank Ostroff and Gil Marmol.

Mr. Champy was on vacation and couldn't be reached for comment. His departure represents a serious blow to CSC Index, a unit of Computer Sciences Corp., which has been rocked by turmoil after charges last year that it attempted to manipulate purchases of the book, "The Discipline of Market Leaders," which two of its consultants authored.

Business Week reported that the company spent $250,000 to buy at least 10,000 copies of the book from stores believed to be surveyed for the New York Times's nonfiction best-seller list.

In the aftermath, Mr. Champy, who had been promoted in 1992 to a position overseeing CSC Index's consulting division, returned to daily management of the firm he brought to prominence as the originator of corporate re-engineering. He initiated a housecleaning that removed the two authors, Frederick Weirsema and Michael Treacy, and others involved in the scheme. Messrs. Weirsema and Treacy have denied the tampering charges and say they left the company for unrelated reasons.

But other problems proved more difficult to extricate. After opening three new offices and nearly doubling its staff in the year following publication of Mr. Champy's book, CSC Index began to suffer from increased competition from larger consulting firms like Andersen Consulting that had co-opted the re-engineering concept. "We rode re-engineering real high, but we were a one-trick pony and didn't have a lot to follow up with," said Jim Hall, a former vice president who resigned last year to join SRI International's consulting practice.

Moreover, according to former employees familiar with the situation, clients worried about the firm's sullied reputation canceled projects, while future contracts were called off. After reaching a high of $312 million in revenue in 1993, business fell off sharply, according to figures supplied by Consultants News.

Badly overstaffed, Mr. Champy's firm initiated a hiring freeze and stopped on-campus recruiting of MBA students. Worried workers also began to leave.

A widely respected manager, Mr. Champy was able to stem some of the bloodletting. "Index's success was heavily due to his leadership," says Michael Hammer, co-author of the re-engineering book. Without him, however, "They have a real challenge now," Mr. Hammer says.

Young Headhunter Wooed Mandl

Continued From Page B1

firms, Mr. Beirne says, are "an old-boy network" of executives who wait for human-resources offices to call.

When Netscape came to Mr. Beirne seeking a chief executive, "it was a company with nine engineers and a concept." Mr. Beirne recalls. "You have to figure out how to position it, what to say" to a prospective hire.

Ramsey/Beirne went after an unlikely prospect, Mr. Barksdale, but lured him with a package that left him with a 12% stake in the Internet software company, a shareholding valued at $100 million when Netscape went public last year.

Mr. Beirne says his youth also helps. "I don't think that someone's who's 55 years old doing searches at the end of their career can keep up," says the lanky, 6-foot-6 executive. He and his seven partners "live this business. We work so hard, seven days a week."

Mr. Beirne formed Ramsey/Beirne a right after I left Lotus," Mr. Manzi says. At first, "I said 'I'm not interested.' " But Mr. Beirne didn't give up. "He called me and said, 'I'm going to send you a packet.' He sent me stuff on Industry.Net. It was a very clever sales operation." Mr. Manzi ended up running the company, and now he is using Mr. Beirne to fill some other openings.

Mr. Beirne's firm seeks to tap into the frenzy of initial public offerings for technology companies. When it places an executive, it not only gets one-third of his or her annual salary at the higher-paying of the two jobs — but also often takes an equity stake in the firm that employed it. That unusual practice has left it with shares in companies such as Platinum Software Corp. and Healtheon Corp., the new company formed by Netscape chairman James Clark. It didn't, however, follow that practice with high-flying Netscape. Mr. Beirne won't say whether he's getting equity in the Mandl place-

Information Technology: Responses for the Integrated Delivery Network

Executive Report

1.3

If you would like a copy of a previous Executive Report, please call Debbie Dodge at 1.800.800.2298, Ext. 8683.

Executive Report 1.1 – *Lessons Learned From a Study of 125 Reengineering Programs*

Executive Report 1.2 – *Creating Real Value in Integrated Delivery: Four Things You Must Do Well*

If current trends continue for the next few years, managed care will force today's 5,200 hospitals, 380,000 office-based physicians, 12,000 home health agencies, and 17,000 sub-acute care facilities to restructure themselves into a much smaller number of integrated delivery networks (IDNs). In this context, not only is managed care reshaping the industry's structure, simultaneously driving down utilization and reimbursement, it is also redefining the core processes of health care delivery.

These changes raise a number of crucial questions, including:

- How can IDNs deliver effective care across the continuum with geographically distributed providers whose only link to each other is electronic?
- How can organizations meet the information requirements of managing a membership base and a patient base?
- How can organizations provide the information support needed to effectively engage in risk-sharing arrangements?

As these questions imply, information technology will be integral over the next decade to successful health care organizations. Information technology will be more than just the glue that binds an IDN; it will enable effective care delivery management, cost control, quality and outcomes measurement. In essence, information technology will make the vision of creating a competitive IDN a reality.

Most health care organizations face a host of challenges as existing information technology infrastructures are reengineered to fit new requirements. The major challenges include how to:

- Link information technology initiatives to the IDN organizational structure and business strategies (the new operating model),
- Integrate and enhance systems designed to capture charges and to report episodes of care, rather than longitudinal patient history, and
- Position and fund information technology to support vertically integrated care delivery in a risk-sharing environment with increasing needs for data-driven decision support and outcomes measurement.

To further complicate these challenges, the historical approach to information systems has favored incremental change, which is no longer responsive to the rapidly evolving market. Four specific actions can help IDN leaders as they reposition their organizations for the future. These actions include:

1. **Develop an Information Technology Vision Linked to the New Operating Model.**
2. **Reposition Information Technology Within the Enterprise.**
3. **Enable Core Processes Through Information Technology.**
4. **Embrace Flexible Solutions.**

1 Develop an Information Technology Vision Linked to the New Operating Model.

The working vision for progressive health care providers is to develop an IDN capable of managing populations through the continuum of care, delivering appropriate services at the appropriate time and place, and at a cost that is financially viable. While many providers have begun to define their operating model, few have developed an information technology plan to support the growing demand for information.

The complexity of the new IDN operating model makes information technology vital to linking sites, measuring outcomes, decision support, and coordinating care delivery. Installed information systems need to be enhanced to fit new needs such as enterprise-wide scheduling and registration, enterprise order management, and outcomes measurement. In this context, information technology must have the ability to support:

- New account development and contract management,
- Resource allocation for populations of covered lives,
- Shared knowledge among networked provider teams,
- Seamless care delivery through the continuum of care,
- Medical status and risk management, and
- Outcome analysis with correlation of cost and severity adjustment.

Given such new priorities, health care providers are starting to view information technology in the same manner that airlines came to look at computerized reservation systems and banks to perceive automated teller machines – as mission-critical business tools. Airlines and banks understood they could not be competitive without information systems that directly support fundamental operations. Similarly, health care providers are directing information technology investments toward clinical operations with capabilities that include, for example:

- Enterprise-wide patient scheduling and tracking,
- Physician order and results communications,
- Automated documentation systems with exception-based reporting,
- Integrated registration serving all facilities – hospital, group practice, and ambulatory sites, and
- Centralized ancillary services processing.

Effectively linking information systems to cost, quality, and service requirements is a crucial change in perspective. The new operating model requires information accessibility throughout every process, providing data at the point of care, enabling communication, and eliminating non-value-added steps to achieve the competitiveness that makes winners in the marketplace. It also requires the chief executive to be its champion.

2 Reposition Information Technology Within the Enterprise.

Once information technology is recognized as critical to making the new IDN operating model successful, the entire approach to systems can be shifted. Core competencies required to maintain accounting and billing systems, install software package updates, and respond to departments can be supplemented by skills that empower enterprise-wide approaches, such as:

- **Clinical data integration** to profile medical practice patterns, support longitudinal patient views, and leverage the power of blended clinical and cost information. Such clinically rich data will become the basis for performance measures to guide the IDN, for clinical standards to support care delivery, and for population statistics to support risk assessment and rationalize clinical assets.
- **Mechanisms to support seamless care delivery** across the IDN, which assure that a patient registers only once, that medical records are appropriately available, that the care team can collaborate on care. The fact that the IDN is composed of multiple organizations, constantly changing, must be assumed in the information technology plan.

- **Communications that bind** the organization together through voice, data, and image. The data that must be electronically archived to support computer-based longitudinal patient records is immense. The size of new IDNs implies that thousands of care-delivery professionals will need access to information.
- **Measures of success** for information technology investments that are linked to the objectives of the IDN. Information technology projects must help create tangible results, such as reduced lengths of stay and improved predictability of medication costs.

Integrated delivery network leaders are challenged because the timely repositioning of information technology requires budget adjustment. Hospitals historically have allocated only 2% of their operating expenditures to information systems. The banking industry averages 7%. Insurance companies and HMOs spend 12% and 10% respectively.

Some leading IDNs are already committing large capital investments to information technology initiatives. Sheldon Dorenfest and Co. projects that health care information technology investments will grow from $6.5 billion in 1993, to $9.5 billion in 1996, and to $15 billion by 2000. Just as important as the financial commitment, though, is executive clarity as to the projected payback. The desired results from technology initiatives need to be clearly articulated and closely monitored to be achieved.

3 Enable Core Processes Through Information Technology.

Most IDNs have roots in hospital traditions where success meant optimizing episodic delivery of inpatient care. In this environment, since core processes focused on maximizing inpatient facility utilization, information systems did, too.

As a result, today's reality is that information systems more often obstruct than enable the core processes necessary to succeed in a managed care world. The narrow focus and inflexibility of most information systems solutions make it almost impossible to reap the benefits of restructuring and continuous improvement. Specific examples include:

- **Communications network** – Most hospitals have not planned, much less implemented, communications networks that give care team members necessary access.
- **Software** – Most patient-based software products use traditional departmental modules not integrated for clinical use.
- **Staffing** – Information systems staff at most hospitals do not have network planning and management, data base management, and systems integration skills.

Few would deny that computer systems for clinical ancillaries, such as laboratory and pharmacy, have increased throughput and overall quality. However, these applications often simply automate manual tasks without addressing the underlying work flow. The power of information systems to help coordinate and synchronize activities remains untapped.

Information systems designed around core IDN processes — securing covered lives, managing risk and health status, and delivering quality care — will greatly reduce costs and improve services. Information technology will integrate medical practices, business processes, and give caregivers the ability to view and manage a patient's health status across the continuum.

Part of reengineering is coordinating both automated and manual inter-departmental functions so work flow is more efficient and vital activities are enhanced, such as:

- **Care planning** – Protocols, based on accepted standards of care and predicted outcomes, can give caregivers a tool for creating tailored care plans for individuals. Computerized care plans can provide references for services across the IDN, reducing scheduling and coordination issues.
- **Service delivery** – Once a care plan is activated, caregivers should be able to view the status of services from both a patient and a unit perspective. Caregivers can plan from accurate, comprehensive lists of tasks and then monitor the plan to make sure services are delivered as scheduled, which benefits the patient.

- **Evaluating progress** – As services are completed, caregivers can evaluate outcomes and compare results with the accepted standards. Through exception-based documentation, caregivers can learn of unexpected results vis-à-vis patient progress.

Information technology is the backbone of reengineered care delivery and necessitates a standards-based approach to application development and selection, just as graphical user interfaces and connectivity standards enable the Internet to link millions of disparate computer systems. A single data repository cannot accommodate everything that users will demand on line. However, a single graphical interface can provide access to a wide range of existing data bases.

Integration and connectivity will push leading IDNs ahead of the pack. The most successful organizations will implement integrated solutions with reengineered core processes to reduce cycle time, hand-offs, and duplicate processing, all of which will improve the patient/physician experience, and at a lower cost.

Managed care calls for information systems that provide consistent, foolproof member and patient identification; access to longitudinal patient data across the continuum of care; reliable communication links among all providers for scheduling, referrals and case management; an integrated, consistent view of clinical and business activity; flexibility; and the ability to grow quickly in response to market needs.

Many hospital information systems departments and systems vendors have successfully developed application software. Integration and network connectivity present new technology challenges. The payoff will correlate to how extensively systems improve the way work is done in care delivery.

4 Embrace Flexible Solutions.

There are no magic solutions to market-driven information technology problems. Software vendors are going through their own shakeout, and the immediate needs of every institution are often unique. Provider allegiances, consumer preferences, medical practices, government regulations, and the competitive environment continue to evolve without regard for history.

Timely solutions involve knitting together imperfect capabilities, adapting disposable "bridge solutions," and drawing on outside help to expedite the transition. Successful organizations will orchestrate research and planning, controlled experimentation, and expert advice to achieve progress.

Before tackling these challenges, executives will need to recognize that most hospital information technology departments have developed a "maintenance culture," marked by the heritage of "legacy" systems and a track record of incremental change. The rapidly evolving health care market, on the other hand, calls for a more aggressive approach, and the marketplace state of flux is paralleled by the rapid evolution of computer technologies. Therefore, the only information technology solutions health care leaders should consider are those which preserve flexibility, while simultaneously moving the organization toward its performance goals.

The financial health of an IDN is contingent on cost-effective management of patient care. Systems that support integrating clinical and financial perspectives across traditional boundaries enable the IDN to shape its own transition. Initiatives must immediately address present needs and lay the groundwork for future change so as to:

- Establish connectivity capabilities for providers to communicate throughout the network,
- Increase systems integration,
- Build data repositories,
- Redesign the care delivery process to integrate information tools, and
- Migrate to an open system technical architecture.

In addressing this situation, IDNs will also need to enhance information technology leadership, staffing, and operating philosophies. The winners will toss off the information technology tradition of hesitancy and risk-avoidance, and will

initiate measured leaps forward. Examples of how leaps can be achieved include:

- **Draw on technologies proven in other industries**, such as supply chain management systems developed in manufacturing.
- **Use outsourcing** to leverage internal skills and convert data processing from a fixed- to a variable-cost structure.
- **Prototype** to prove a concept or provide a quick, if imperfect, solution.
- **Capitalize on quick wins** through aggressive consolidation, selective outsourcing, and tools such as data warehousing.
- **Stratify staff** into one group solely responsible for the maintenance of systems and another for new development critical to an IDN transition.

The information technology department will need a toolkit of capabilities. In many instances, information technology leaders will need to guide a consortium of software, communication, and technology vendors to cobble an information technology architecture rapidly to support core processes. Traditional emphasis on application development, customization, and maintenance will yield to open systems and integration.

A rush to purchase "bleeding edge" information technology solutions is not appropriate in this market. The organization should not engage technology for technology's sake, although coordinated investigation and assessment of new technology must be encouraged. A number of institutions now plan continuous evaluation of the feasibility of advanced capabilities, such as clinical decision support, artificial intelligence, voice recognition, and document imaging. For many health care organizations, an emphasis on new technology and approaches will represent one of the most challenging aspects of information technology development, requiring a courageous, involved management team.

Summary

The demands of managed care have transformed information technology from a back-office function to a mission-critical asset. Information technology will separate winners from losers as managed care becomes more prevalent. Recognizing the importance of information technology is easy. It is management's resolve and commitment which can bring about the necessary transformation. As management approaches this challenge, suggested key steps involve:

- Rethinking the operating model, fully integrating information technology capabilities into the workings of multi-entity health delivery networks.
- Increasing the required payoff from information systems by shifting focus from financial to clinical processes.
- Empowering joint teams to reinvent core processes, drawing on systems capabilities and using them to cut across departmental boundaries.
- Committing to flexible solutions, allowing for managed leaps that break away from the traditional incremental approach.

The transition must be grounded in market forces and reinforced by incessant reevaluation of strategic options. Information technology transition will be a major contributing factor to the competitiveness of emerging integrated health care delivery networks. As these changes take hold, they will ensure the consistent delivery of increasingly high-quality care and the satisfaction of patients and physicians.

This article was written by John H. Duffy and Brian J. Gockerman and incorporates concepts developed by David Crutchfield, Randy Golob, Johna M. Grim & Gerald Mathys.

For more information,
call Debbie Dodge at 1.800.800.2298, Ext. 8683

About APM

More than 550 times since its founding in 1974, health care organizations have turned to APM, a resource dedicated solely to health care change management. APM has become the leading health care management services company based in the United States by dedicating itself exclusively to health care and by achieving exceptional results with its client partners. APM's work with the University Hospital Consortium on the evolution of health care markets, for example, has revolutionized the way the industry thinks about managed care and the development of integrated delivery systems.

APM's clients include many of the most respected systems, academic medical centers, community hospitals, insurance companies, HMOs, multi-group practices, and industry associations.

Today, more than 230 APM expert consultants are helping health care leaders meet the requirements of a changing environment. The firm's services are offered through two major groups, with specialists operating from APM's offices in New York, Framingham, Chicago, San Francisco, Salt Lake City, Atlanta, and Toronto.

***The Integrated Delivery System Group** includes strategic planning, system formation, mergers and acquisitions, physician-hospital linkages, primary care development, managed care strategy, provider-payer integration, HMO/PPO development, contracting strategy, provider profiling, and network data sharing. Working with both the providers and purchasers of health care, APM helps its client partners develop integrated managed care strategies and delivery systems that link patients, providers, insurers, and communities into a continuum of care.*

***The Performance Improvement Group** includes clinical resource management, quality improvement, case management, operations restructuring, work redesign/reengineering, patient-focused care, and organizational restructuring. APM has documented $1.4 billion in client savings in its performance improvement work.*

***The Information Technology Practice** provides services which include assessing the effectiveness and readiness of information systems to support integrated delivery network requirements; developing the business case by linking information technology expenditures to key goals such as cost reduction, service improvement, and quality enhancement; strategic systems planning; information technology-enabled process reengineering; systems selection and implementation management; emerging technology updates; outsourcing; and general contracting.*

APM's services and processes are customized for each client, based on a comprehensive assessment of data and information on that client and its competitor organizations. APM believes in transferring technologies and training client staff members to use the tools to sustain a continuous improvement process.

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Health Plan and Provider Partnerships: Old Adversaries are Tomorrow's Partners

Executive Report

2.1

Relations between health plans and providers have become increasingly strained as health care markets throughout the U.S. have evolved. In their effort to create value for price-conscious customers and for shareholders, health plans have negotiated aggressively and successfully with physician groups and hospitals to drive down costs. Fragmented provider communities, burdened with excess capacity, have seen intense competition erode revenues and margins.

Recently, APM has worked with health plans in some of the most advanced U.S. markets and found several provider systems reversing this trend. With successful consolidation and integration at the local market level, these systems have forced an equilibrium in the balance of power between health plans and providers. This new equilibrium creates many opportunities for strategic relationships that can benefit both plans and providers.

However, to achieve these benefits, health plans and providers can no longer be adversaries. Annual bare-knuckles reimbursement negotiations go only so far in reducing medical costs and will become increasingly fruitless, even counterproductive, as markets continue to evolve. The lack of trust implicit in an adversarial health plan-provider relationship prevents any progress toward more exclusive contracting between providers and payers, in turn contributing to undifferentiated networks across plans. When all plans feature most of the same providers, employers face minimal switching costs, and commodity pricing behavior takes hold, reducing both health plan and provider margins.

In fact, stronger health plan-provider relationships are the only way to significantly reduce total cost and meaningfully differentiate product offerings. Leading-edge plans are no longer regarding providers as antagonists in a zero-sum struggle for the premium dollar. Instead, they are looking at emerging integrated delivery systems as potential allies in lowering a community's underlying medical costs and securing market share. Progressive health plans that develop win-win relationships with providers also have an opportunity to play an active role in the formation of tomorrow's dominant provider systems.

If you would like a copy of a previous Executive Report, please call Debbie Dodge at 800.800.2298, Ext. 8683.

Executive Report 1.1 – *Lessons Learned From a Study of 125 Reengineering Programs*

Executive Report 1.2 – *Creating Real Value in Integrated Delivery: Four Things You Must Do Well*

Executive Report 1.3 – *Information Technology: Responses for the Integrated Delivery Network*

The new health plan-provider paradigm is based on mutual strength and common needs. Considering their respective strategies, and keeping the ultimate goal of customer value in mind, health plans and providers have three primary needs in common. First and foremost, both parties seek to increase value for the end customer by lowering underlying costs (both medical and administrative). Each party needs an economic incentive to help achieve cost targets. Second, both desire to differentiate themselves from competitors and avoid "commoditization." Third, health plans and providers both wish to steer volume to superior performers, a strategy that simultaneously rewards operational excellence and lowers the cost to customers. Given this common ground, health plans and providers in advanced markets have an opportunity to forge a new, cooperative strategic partnership.

Based on APM's experience, three principles characterize these discussions and help would-be partners stay focused on the key common needs:

1 Multi-year relationships

Changing the contracting cycle between health plan and provider from an annual event into a three-to-five year strategic relationship forces the contracting entities to focus on longer-term, more fundamental economic and strategic factors, such as cost improvement and the market environment.

For example, in a multi-year agreement, rate structures must be dynamic and reflect a strategic view of the market. Both health plans and providers will want to capture potential opportunities, such as significant premium increases or utilization-based cost improvements.

They will also want to protect against unknown future risks, such as premium declines or cost inflation. These strategic considerations force the parties to consider some type of meaningful risk sharing. Under a multi-year relationship, for example, either increases or decreases in provider capitation, or both, could be linked to premium trends, incremental enrollment growth, changes in underlying utilization patterns, or some combination of these factors.

2 Active channeling of members

While offering employers too restricted a choice of providers has had negative results, it is clearly in a health plan's interest to channel as much volume as possible to providers with favorable economics and superior quality and service. Likewise, providers want incremental enrollment as a reward for improved performance.

A number of cooperative approaches can help health plans and providers effectively channel enrollees, including joint marketing, strategic use of the provider directory (e.g., sharing provider performance statistics), and financial incentives such as lower copayments. While channeling is often a promised feature of health plan-provider contracting, providers have grown skeptical of a plan's ability to deliver incremental volume in exchange for upfront discounts in reimbursements. A volume-based reimbursement incentive could be a more effective approach that discounts provider reimbursement as incremental volume (over a specified target level) is actually channeled.

3 Joint investment in efforts to improve cost-effectiveness

Many of tomorrow's breakthroughs in cost-effectiveness will depend on significant investment in information technology and access to population-based clinical and demographic data sets. Population-based disease management protocols that cut across the provider community are an area of rich potential for health plan-provider collaboration. Most provider systems lack the breadth of information needed to establish longitudinal protocols as well as the capital to develop the information systems for implementing them.

Health plans, on the other hand, have access to both information and systems technology, but cannot mandate that their provider networks implement externally developed protocols. With the next generation of competitive advantages at stake, health plans and providers cannot afford to waste time and capital on duplicative or incomplete investments — collaboration will be the key to first-mover rewards.

Building a relationship based on these three principles yields short-term and long-term benefits to both health plans and providers. For example, using a cooperative stance and a volume discount mechanism, the health plan can secure the best negotiated rates with its strategic provider partners. These rates then provide pricing flexibility, margin protection, or both, for the health plan while giving providers a stable, growing revenue stream. In the long term, lower overall cost structures and enhanced brand strength give both the health plan and the provider competitive advantage in the local market.

Successful Strategies are Local

Health plans and providers need to appreciate the importance of understanding local market dynamics, since it is at the local level that power is being consolidated and the range of options for a new provider-payer strategy is being set. Only at the local level can players determine which potential partner to choose, based on market strength, operating performance, ability to develop and implement new products, compatibility of strategic direction, and current relationship status.

The managed care evolution model[1] outlines the general course of competitive action and reaction within local health care markets. Stage I, called an unstructured market, is characterized by hospitals and physicians who operate independently, relatively unsophisticated purchasers, and minimal HMO presence. Most regional markets are now in Stage II or III, characterized by increasing consolidation. In Stage II, HMO and PPO enrollments balloon as large employers begin to emphasize managed care solutions to increasing health care costs. These health plans contract with large, inclusive provider panels. Although hospitals remain profitable, excess inpatient capacity develops as HMOs and PPOs begin to contain utilization. Price pressure begins, and reimbursement is increasingly based on discounts. In response, providers begin to align into loose networks.

In Stage III, the combination of price pressure and provider excess capacity intensifies the competitive dynamic. While the balance of power between employers, managed care organizations and provider systems will vary from market to market, the type of competitive activity observed is similar. HMOs begin to consolidate and channel membership to tighter provider panels. Providers also consolidate to gain structural leverage, forming hospital systems and physician groups. Employers reduce the number of managed care options they offer, and price competition among plans increases. To lower their costs, health plans encourage providers to compete for risk-based contracts.

A few major markets where health care consolidation began early have now reached Stage IV, in which a small number of large integrated provider systems dominate the market. In some cases, these systems have complete vertical integration — they own or are owned by health plans.

While the market evolution model describes the general competitive environment, the specific events in any given local market depend on the relative positioning and behavior of specific health plans, employers and providers. Two markets that could both be classified as Stage III may, in fact, present very different competitive conditions:

- Demographic variations will require tailored products and networks. A large elderly population will have different needs and purchasing behaviors than a region with many young immigrant families.

- Employers have different needs and will make different demands on health plans. Price pressure is greatest with large, national or state-wide employers; however, local employer coalitions are increasing the impact of smaller employers.

- Providers will consolidate or strategically align with competitors in different ways from market to market.

- The competitive threat of health plan innovation — whether through vertical integration, new contracting models, or new product introduction — will also differ by market.

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[1] *Based on the 1992 University Hospital Consortium/APM Incorporated Management Consultants study, "Competing In The Maturing Marketplace: Strategies For Academic Medical Centers."*

In short, local markets are like chessboards: Markets may contain the same basic pieces, but since the game is already well underway, those pieces are found in a number of different configurations. Players who try to apply the same strategy and make the same moves on all chessboards will be much less successful than those who study each board to find the right next play for that game.

Thus, the precise structure of a strategic health plan-provider relationship will reflect the relative competitive position and strategy of the health plan and the provider within the local market, including a careful estimation of potential competitor reactions. Many partnership structures are possible using the key principles of multi-year relationships, active channeling, and joint investment to improve cost-effectiveness. Some options we have observed include:

- Strategic alliance. This is often the first step toward a more cooperative relationship. It usually features few contractual commitments, but does create a platform for mutual planning, joint marketing, and information sharing.

- Joint ventures. For example, the development of Community Health Information Networks (CHINs) or creation of a jointly branded health plan product that serves a local market are types of health plan-provider joint venture activity.

- Tiered networks. While maintaining the broad, inclusive overall provider network that is attractive to customers, a health plan may select a subset of providers as a "first-tier" network for any given product. These primary providers become the plan's implicit partners and receive the benefits of joint marketing, channeling activity, information sharing, and potential investment in return for "most-favored nation" status.

- Proprietary networks. The strongest form of partnership is the health plan's outright acquisition of key providers or the provider's purchase of a health plan. Mutually exclusive multi-year relationships would also fit into this category.

Two Cities, Two Strategies

A large, national health plan, here called "Smartcare," had to figure out new provider network strategies for several advanced local markets in the western U.S., where it was facing declining margins. The following case study outlines the challenges Smartcare faced in two key service regions, both at approximately the same stage of market evolution. The study illustrates how local conditions differ, presenting different strategic opportunities and choices. These two markets, while disguised to protect the players' confidentiality, are real, and they illustrate real strategic choices.

"Metropolis"

Metropolis is currently a Stage III region well into consolidation. The market includes just over one million potential covered lives, of which 33 percent are now in HMOs and 25 percent in PPOs. Metropolis has three dominant provider systems which account for 85 percent of market activity. One of these is a proprietary system owned by a health plan and not available to the other HMOs. Most customers demand that both of the two remaining "independent" systems be available to them within any network offering and are sometimes willing to pay a premium to ensure this broad access. The region's two largest health plans account for three-quarters of total HMO share and either own or are building proprietary networks. Some of the smaller providers are concerned by the growing power of the dominant provider systems and are actively seeking to expand and to find health plan partners.

In this market, Smartcare was competitively priced but offered a limited network (featuring only one of the two "independent" provider systems). It had achieved only modest share. In addition, historical negotiating activity had led to strained relations with some of the provider networks most likely to be available as partners. Recent market turbulence offered the opportunity for Smartcare to change its situation. Rapid action was crucial because the risk of being "locked out" of key provider relationships was now greater than ever.

Smartcare's initial strategic considerations seemed limited. It could reestablish a reasonable contract with the other dominant provider system to offer a more attractive network

to employers. Or, it could drive down the rates within its existing, limited network and attract additional share of price-driven customers. Leadership determined that these incremental strategies were unlikely to yield much improvement. The first approach would merely achieve parity with other plans' networks, and securing a competitive rate with the second provider system seemed unlikely, given Smartcare's current market position. The second approach risked a long-term lockout from the non-contracted provider system and severely limited potential market share growth to the most price-sensitive segments.

Faced with dim prospects from these two traditional strategies, Smartcare decided to rethink its Metropolis network in terms of strategic relationships. In discussions with the two independent provider systems, Smartcare learned that both feared long-term dependence on the two larger Metropolis health plans. Each of these plans was growing and their volume, combined with their developing proprietary delivery systems, gave them significant leverage over Metropolis' providers. To fight back, one of the two independent provider systems had started its own HMO. However, membership was small and the plan had been losing money due to the significant discounting required to attract customers to its one-system network.

After determining these provider needs, and recognizing the poor outlook for unilateral strategies, Smartcare developed a bolder, more creative, and more cooperative option for working with the two independent provider systems. Smartcare proposed purchasing a majority share of the non-contracted system's small HMO and jointly marketing it with both provider systems as a locally based "community" health plan.

This new approach promised to benefit both Smartcare and the two systems. Smartcare would achieve an immediate boost in share that would elevate it to be Metropolis' third largest plan, an exclusive strategic alignment (but not exclusive contracting) with Metropolis' two dominant independent provider systems, and a uniquely positioned, differentiated product. The two delivery systems would gain a credible long-term vehicle for securing control over a significant share of Metropolis' HMO population. This key strategic benefit would also afford each of the systems more leverage in negotiations with Metropolis' other health plans.

By considering providers' strategic needs and expanding its thinking to include potential partnerships, Smartcare was able to develop a new strategy that benefited all parties and provided a basis for long-term competitive advantage in the Metropolis market.

"Capital"

Capital is also a Stage III market, but much larger and more diverse than Metropolis, with six million potential covered lives and 30 percent HMO penetration. Unlike Metropolis, no provider systems or health plans had achieved broad, region-wide dominance. The market was a patchwork of providers. It had strong, integrated primary care medical groups and IPAs, smaller emerging groups and IPAs, numerous physician-hospital organizations, and several multihospital systems. All were independent and competing, with many having overlapping service areas. Consolidation was accelerating rapidly, with new deals being announced nearly every quarter.

In Capital, Smartcare had a significant and growing market position, with strong share and a top-of-mind brand name presence that was recognized and valued by area providers. However, several of the stronger, integrated medical groups had begun to assert their own market identity, successfully attracting Smartcare members and negotiating sizable reimbursement increases. In addition, these groups were aggressive consolidators, and Smartcare was concerned about further expansions that would increase their strength within the Capital network.

Despite its strong position in the Capital market, Smartcare recognized that continued "hammering" on reimbursement to these large groups was unlikely to yield rates that preserved its margins, given the environment of intensifying price competition. Also, Smartcare could ill afford to lose one of the groups, putting its network at a considerable competitive disadvantage (like the Metropolis network was prior to the new cooperative agreement). Here again, Smartcare decided to expand its thinking to include strategic provider relationships and investigate the local market dynamics more closely in search of a more creative strategy.

Smartcare discovered that the large integrated medical groups that dominated its network were fiercely competitive with each other and that some of them served overlapping subregions of the Capital market. In addition, their strategies varied, with some focused on geographic expansion, while others strived to increase penetration within currently served markets and to invest in operational performance. Smartcare also observed that these larger groups were surrounded by smaller, emerging groups and IPAs, which were each struggling to secure HMO contracts and avoid being acquired or marginalized by the major groups.

Considering these strategic needs, Smartcare advanced a strategy to develop a preferred set of providers within its broader HMO network. These "partners" would include a strategic subset of the larger groups and several of the most cost-effective, small- to mid-sized providers. Then, with cooperation from the providers, Smartcare would aggressively channel its membership to these partners. The health plan would also invest in its smaller provider partners to help them grow to a competitive size and invest in cost-reduction efforts with each of its chosen partner groups, PHOs, and IPAs.

This strategy offered mutual benefits to Smartcare and its strategic partners. It enabled Smartcare to reduce its network cost while maintaining the broad network needed to attract customers. In return for channeling and investment, Smartcare would achieve "most-favored nation" rate status with its provider partners. The provider partners would benefit from increased volume, cooperation on cost-reduction efforts, and a long-term means toward enhanced competitiveness within the provider community.

The provider partnership strategies Smartcare advanced in these two Stage III markets are a distinct departure from the health plan's previous annual contracting approach and, in many ways, from each other. The economic advantages to be gained in each market promised to be dramatic compared to the best projections under the status quo. The Capital strategy alone could improve per member per month costs by more than five percent over three to four years after implementation. The provider partners in Smartcare's network should also benefit from significant increases in volume and lower costs.

SUMMARY

Undeniably, the new health plan-provider partnership paradigm promises significant challenges for executives and managers on both sides. But the potential advantages outweigh these challenges and the risks of remaining status quo when competitors are changing. APM's experience working with health plans in advancing markets shows that appropriately structured strategic relationships can have significant benefits for both the health plan and the provider partner in a Stage III or IV market. Clinical effectiveness can be improved, aggregate costs reduced, and both partners can be better positioned with differentiated products and an increased, more defensible market share of covered lives.

It is not too soon to seek out the best partners. As the speed of market evolution accelerates and more local markets move into and through Stages III and IV, opportunities will disappear and attractive partners will be locked up. Health plan and provider leaders who wish to hold a sustainable competitive advantage in the next stage of market evolution must begin *now* to assess local markets, choose potential partners and strategies, and lock in desirable long-term relationships.

The new health plan-provider paradigm — based on mutual strength and common needs — ultimately benefits the community as well. Keeping the ultimate goal of customer value in mind, progressive health plans and providers will overturn their adversarial pasts and create win-win situations that address the strategic needs of both parties, simultaneously lowering health care costs and helping maintain the wellness of the communities they serve.

This article was written by Russell K. Nash and Jess I. Parks.

For more information, call Debbie Dodge at 800.800.2298, Ext. 8683.

About APM

More than 550 times since its founding in 1974, health care organizations have turned to APM, a resource dedicated solely to health care change management. APM has become the leading health care management services company based in the United States by dedicating itself exclusively to health care and by achieving exceptional results with its client partners. APM's work with the University Hospital Consortium on the evolution of health care markets, for example, has revolutionized the way the industry thinks about managed care and the development of integrated delivery systems.

APM's clients include many of the most respected systems, academic medical centers, community hospitals, insurance companies, HMOs, health plans, multi-group practices, and industry associations.

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The Effect of Hospital Restructuring on Nursing

A Report on Findings from a Survey of Hospital Chief Nursing Executives

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Sandra Mazzie is a Patient Care Executive Consultant with APM. Formerly, she was Vice President of St. Luke's Hospital, Newburgh, New York, and Director of Patient Care Services at St. Francis Hospital, Poughkeepsie, New York.

For the first time, hospital chief nursing executives who have completed restructuring programs were asked to report results and their assessment of that change on their institutions, their departments, and their professional status. This is a report on that groundbreaking study.

The study was done to contribute objective data and assessments from individuals who are held responsible for the nursing function in their institutions and who have completed a comprehensive restructuring program. This objective data was sought because opinion predominates in the discussion on how restructuring might affect nursing.

The survey was conducted by APM Incorporated, a management services company which has worked with client partners on more than 125 restructuring or reengineering projects. Of those clients, 76 hospitals were eligible for the study since they are far enough along in implementation to allow assessment of outcomes.

The survey was conducted in June and July 1994. The hospitals represented a wide range of types of institutions — from large, public, unionized, urban teaching hospitals to smaller, suburban, community hospitals. Responses were received from 52 of the 76 eligible client hospitals. Of these, 34 submitted written responses and 18 provided data in telephone interviews.

EMPLOYEE REDUCTIONS

QUESTION

As a result of restructuring, did your institution reduce the number of employees?

RESPONSE

FINDINGS

Since one-half to two-thirds of hospital costs traditionally have been attributable to labor, it is highly likely that restructuring will involve a reduction in a hospital's work force. In fact, hospitals are changing the way they do business, whether they reengineer or not. The managed care-driven marketplace most hospitals find themselves in today demands one primary attribute — providers must have a low cost position in their market.

REDUCTION METHODS

QUESTION

If your institution did reduce the number of employees, what methods were used to make the reductions?

RESPONSE

FINDINGS

The data suggests that hospitals are sensitive to the economic status of their employees because at least half of the hospitals (51%) used attrition to achieve a reduction in force (RIF), while 87% used a combination of attrition and layoffs. Layoffs were used as the sole RIF method in only one out of eight hospitals.

These findings further suggest that when an institution conducts a planned restructuring before a financial exigency, lead time is adequate to accommodate most or all RIFs through attrition.

COMPARISON TO OTHER INSTITUTIONS

QUESTION

When comparing your institution to others in your community, how would you describe the scope of your reduction in number of employees?

RESPONSE

FINDINGS

Of the reporting hospitals, 75% had fewer employee reductions or the same level experienced by other hospitals in the community. This again indicates that a restructuring program that is done well reduces the potential for loss of jobs by hospital employees.

In another study which documented $1 billion in savings by APM client hospitals, the majority of costs saved were from work redesign, such as service reconfiguration, process simplification, and role redefinitions. Also, the largest single area of savings was purchased goods and services, not labor costs.

RN REDUCTIONS

QUESTION

Were RN positions reduced?

RESPONSE

FINDINGS

Again, due to the traditional cost of labor found in hospitals, and recognizing that nursing is the largest department in terms of number of employees, it is likely that some reduction in nursing positions will occur in a restructuring. Work redesign measures which enhance care to the patient and free nurses from non-patient care or unproductive tasks, allow the reductions without reducing care and usually increasing the direct hours of care.

RN REDUCTION METHODS

QUESTION

If your institution did reduce RN positions, what methods were used to make the reductions?

RESPONSE

FINDINGS

One of the most telling findings of this report is that nurses experienced fewer layoffs when compared to other employee groups within their institutions. Specifically, only three of the hospitals reported laying off nurses while six reported in a previous question that they had reduced all types of employees through layoffs.

Also, 11 hospitals reported using a combination of layoffs and attrition to reduce the nursing work force. In a previous question, 17 hospitals reported that they had reduced all types of employees through a combination of layoffs and attrition. These data show that claims that nurses are bearing the economic brunt of comprehensive restructuring and work redesign are without basis in terms of APM client experiences.

NURSING'S ROLE POST RESTRUCTURING

QUESTION

When viewing the role of nursing in your institution after restructuring, how would you describe nursing's role?

RESPONSE

FINDINGS

Based on the fact that 83% of the nursing executives reported that their department's responsibilities increased, and 98% reported that they remained the same or increased, restructuring clearly strengthens nursing within the institution.

The study suggests that nursing leaders and staff have the opportunity under restructuring to help reshape the way patient care is delivered and mold the role nursing will play in the new ways of providing services, achieving improved clinical outcomes and increasing patient and nursing staff satisfaction.

RN EXECUTIVE ROLE/STATUS

QUESTION

In terms of your position as nurse executive, how would you describe your role after restructuring?

RESPONSE

FINDINGS

Again, this data provides further evidence that restructuring strengthens hospital nursing departments and its leadership. With 96% of the nursing executives reporting an increase in the scope of their role or at least maintenance of the same level of responsibility, nursing executives can expect a restructuring program that is done well to enhance their standing within the institution, delivering more clout to affect patient care services and the way business in general is done.

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1995-early

Creating Real Value in Integrated Delivery: Four Things You Must Do Well

APM

MANAGEMENT CONSULTANTS

Executive Report

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It is no longer effective for providers to focus on delivering care on demand to the next patient who walks through the door. Today, real value comes from the ability to predict and aggressively manage the needs of the specific populations being served, with the goal of improving the overall health of each group.

Not surprisingly, this is not yet the case with most integrated delivery networks (IDNs). Today, IDNs principally are being created with a focus on bringing together facilities and services. Executives are deciding what should be in the network and how it should be obtained.

But this approach misses the key point: **Success in the future will lay in the ability to use sophisticated risk profile assessments to predict health service needs and to take preventive action that promotes health among the IDN's covered populations.** Only by having data on the health problems and risks of the local enrolled population can an IDN effectively exert itself to take preventive action.

Furthermore, since form follows function, this knowledge helps executives determine which strategic complement of assets — the combination of "bricks and mortar" facilities and physician specialties — the IDN needs to deliver services effectively. Enrollee data is vital for pricing, too, since knowing the likely cost of serving the enrolled population enables IDN executives to more accurately contract or plan capitation.

But in the end, no matter how assets are assembled or owned, and no matter if the integrated delivery is real or "virtual," a network will succeed and add real value to its community only if the IDN's leadership can do four things. And they must do them well and soon. The four key actions are:

1. **Manage Health and Wellness**
2. **Deliver Effective Care**
3. **Secure the Population**
4. **Control Financial Risk**

1 Manage Health and Wellness

Today, health care provision centers on the hospital, and maximizing its utilization is essential to profitability. Most executives have focused on managing the treatment and cost of an illness, particularly an illness requiring hospitalization.

In an effective IDN, however, the hospital is seen as the final and exceptional stage in a health care continuum, not as its center. The integrated provider system focuses on keeping the patient well — out of the hospital and even outpatient service areas. To do this, an IDN needs systems for identifying and preventing health care problems. If treatment is necessary, it occurs as soon as possible to prevent the need for hospitalization. Specifically, successful IDNs need to:

Develop Risk Assessment Tools and Health Management Programs. Ideally, a new member of a health management program is immediately and carefully screened for cost-laden risk factors, including the obvious warning signals — smoking, weight problems, and high blood pressure. But screening professionals should go further, exploring family history for congenital disease; diet, drink, and fitness habits; occupational stress and dangers; exposure to pollution; hazards at home (for example, stairs in the homes of the elderly, dangerous toys among children); and exposure to violence at home or in the neighborhood.

Using clinically based assessment tools, screening professionals then evaluate the individual's responses to determine relative risk levels and potential remedies. Already, the American Group Practice Association is evaluating risk assessment tools and resulting outcomes in large clinics. Park Nicollet is using SF-36 (a general health assessment questionnaire) and TYPE (a disease-specific assessment and outcomes measurement tool) to modify treatment guidelines. The Medical Group Management Association, with the Kellogg Foundation, has combined SF-36 and a depression scoring scale for senior citizen risk assessment.

The screening professionals then direct new enrollees to the appropriate clinically based education, rehabilitation, or health achievement programs. For example, an overweight person is given a tailored diet and exercise program; parents are encouraged to immunize their children; and the elderly receive guidance on how to organize their homes to avoid falls or burns. If an individual has high risk for a serious health emergency, a protocol-based treatment plan begins immediately.

The successful IDN works proactively to preserve the health of subpopulations of enrollees, as well as individuals, once there is sufficient data on the groups in the covered population. For example, local employers might be persuaded to offer on-site fitness programs or better food choices in their cafeterias. Landlords could be encouraged to install elevators in residences for the elderly or to improve smoke detection and fire sprinkler systems. Parents might be organized to work for safer neighborhood play areas.

Investments in prevention programs should be evaluated carefully, however, to make sure benefits flow to the IDN and not competitors. Initial investments might best go to programs with immediate payback, such as prenatal care, rather than those aimed at longer term illness avoidance, such as smoking cessation. Eventually, though, IDNs will need to invest in developing the necessary data and effective health management programs for the long term — or endure a significant competitive disadvantage.

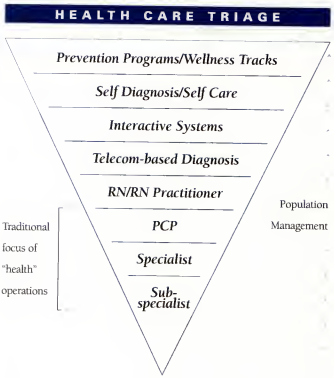
Employ Tiered Systems of Enrollee Self-Help/Self-Care Programs. When health care problems cannot be prevented, the question is whether enrollees can be educated — and whether health care professionals can be trained and encouraged — to handle problems in the most simple, cost-effective way consistent with good medical care. In the future, informed enrollees in contact with nurses and primary care physicians will be able to diagnose many common or simple conditions and treat them without a physician or hospital visit (see exhibit on next page).

For example, enrollees will be given information (in brochures, booklets and electronic media) that illustrates and explains symptoms, points out any reliable self-treatments, and indicates when a health care professional should be called. When enrollees want to talk with a health care professional, they will telephone a registered nurse (RN) or nurse practitioner first.

Several health plans already using telephone-based services have reduced emergency care visits up to 50 percent by some patient segments (e.g., MediCal). However, successful IDNs will move "telephone triage" beyond an optional, voluntary service and make the phone bank a critical first point of access for most enrollees. That means that, along with well-trained RNs, primary care physicians may also staff the phones so they can determine, through professional clinical judgment, when face-to-face medical attention is necessary.

Tiered health care programs offer two clear advantages. First, they educate users, empowering each person to be more knowledgeable about, involved in, and responsible for his or her own overall health.

Second, tiered programs can make best use of the health care dollar. Of any 100 initial contacts made by an enrolled population, an estimated 80 are for conditions that will either resolve themselves or require only minor treatment. Better health care can be provided if resources are applied to treating the 20 conditions requiring extensive treatment or hospitalization.



2 Deliver Effective Care

When episodic care becomes necessary, the successful IDN makes sure care is delivered effectively, applying the right amount of resources at an appropriate cost to produce the best outcome. Success depends in large part on the ability to develop new approaches to traditional ways of operating, including:

Developing Standards and Protocols for Managing Patient Care Within an Episode and Across the Continuum. The essential skill for a successful IDN is developing and applying guidelines that govern when a patient moves from one level of care to the next. An IDN gains a clear competitive cost advantage by keeping patients at the lowest — and therefore least expensive — level of care consistent with a quality outcome. This is a major shift of focus from traditional intra-episodic, hospital-based resource utilization.

A case in point: At one major Midwest academic medical center, hospital managers were setting up an inpatient case management program for a particular diagnosis to control acute care resource utilization. They realized admissions could be avoided altogether for a significant percentage of inpatient cases if careful attention was paid during the ambulatory phase to the potential use of alternative sites, such as home health services. As a result, they immediately expanded the proposed case management system to encompass the entire patient experience, from system entry to system exit. Their plan now focuses on managing the interface between sites, shifting patient episodes from the highest cost areas to the lowest cost, creating truly integrated delivery in the process.

Case management gives IDNs and payers an opportunity to collaborate on developing protocols that truly integrate the delivery system. Whether IDNs are fully integrated with their key payers, including risk financing, or are in shared-risk contractual relationships, both the IDNs and the payers have significant incentive to invest in the clinical information and protocols required to control costs while maintaining or improving quality. However, collaboration will work only if both the IDNs and payers invest resources and information,

are willing to redesign case and utilization management, and agree to share savings through performance bonuses, lower capitation, or other risk pool arrangements.

Refining the Asset Mix. Hospital admittance has been, and in many cases still is, a primary source of revenue. Winning the cost game in the future, however, will ultimately depend on achieving good patient outcomes while making hospitalization the last resort. Hospitals will become just one part — and no longer the central part — of the asset mix.

In fact, an IDN may no longer need to **own** all of the hospital space it uses. Beds are already in chronic oversupply, with excess capacity as high as 50 percent in some markets. As beds become increasingly specialized and expensive, many successful IDNs will jettison large chunks of their tertiary costs by letting go of hospital bed space (adding to the oversupply) and contracting with others for inpatient capacity. In the future, an IDN may "own" orthopedic physicians but "buy" beds for hip replacement. Even fully integrated systems with an historical bias for internalization, such as Kaiser Permanente, are already contracting with outside organizations for some tertiary care.

The question then becomes: What mixture of assets (hospital capacity, clinics, outpatient treatment centers, surgicenters, skilled nursing facilities, home health programs, et. al.) will best meet the population's needs, given demographics, risk assessments, and the IDN's treatment protocols? Should these assets be owned or simply available for use through alliances or marketing agreements? A key to success will be finding the right mix.

Reorganizing (and Downsizing) Acute Internal Operations. Once the IDN has defined the strategic assets required to serve its population's continuum of needs, the challenge is to make internal operations as efficient and effective as possible for the highest cost levels of care. Major improvements are possible by rethinking the current paradigm of hospital operations. For example, many hospitals are gaining a 10-to-20-percent cost savings by reengineering around patient needs, not traditional departments. Patients are aggregated into groups according to the level and type of service they need. All the necessary clinical and patient service skills and routine equipment are then based on the unit, close to the patient.

Reducing Costs of Other Functions. Once staff with the necessary skills, resources, and equipment are on the patient care unit, most of the remaining service functions simply support the operation as a whole. Many service functions are neither part of the IDN's core business nor necessarily unique competencies.

Leaders of successful IDNs will dramatically rethink their approach to providing health system support, often consolidating their systems. For example, in multi-hospital IDNs, many routine laboratory and radiology operations can be consolidated at a single site, leaving satellites only where localized volume is high or quick turnaround is needed. Many support services, such as material logistics, housekeeping, and food services, can be outsourced to external entities with specific expertise and cost effectiveness in those functions. The IDN is then able to focus on its core business — maintaining the health of its population.

Increasing the Sophistication of Information Systems. The requirements for an IDN to seamlessly process patients through a geographically distributed continuum of care implies a new role for information systems and technology. While information systems have historically focused on a stand-alone hospital's backoffice operations and record-keeping, a competitive IDN needs systems that:

- Act as a mechanism for integrating the continuum of care across the IDN's geography by pooling data, linking sites, and coordinating care delivery;
- Provide competitive-edge, differentiating capabilities, such as physician desktop systems which reduce the "hassle factor" for physicians, a common patient record across delivery sites, and referral management systems; and
- Make sure new partners can be easily integrated into the technology architecture, applications configuration, supporting infrastructure, and facilities.

Existing information systems capabilities must be evaluated for their ability to adapt to the emerging IDN environment. The available people, application systems, technology, and infrastructure must be assessed for their ability to support:

- Patient support systems, including a common patient identifier and the ability to register, schedule, and track patients across the IDN;
- Tools which increase patient "throughput," such as smart order entry systems, automated documentation, and clinical pathways;
- Voice and data communications for facilitating medical information transfer between sites of care and electronic linkage between providers and payers;
- Managed care systems for tracking utilization patterns and trends by product and population group, generating provider profiles that evaluate case costs and clinical outcomes, and managing referral patterns between primary care physicians and specialists.

Such capabilities equip the IDN to operationalize strategy and meet ever-changing market performance standards.

3 Secure the Population

To succeed, an IDN needs a sufficiently large and attractive enrolled population for a steady flow of health care dollars. That means securing relationships with key payers so that the IDN is available as a choice to many enrollees, and then becoming their preferred provider. To achieve that end, an IDN must offer superior service and value to distinct customer segments: commercial payers, governmental payers (e.g., Medicaid, Medicare), and the enrollees themselves.

Attract Key Health Care Payers. Health plans want to develop relationships with IDNs that can provide quality care and adequate access and service at highly competitive prices. Beyond these general requirements, specific payer needs vary depending on their products, geographic focus, existing network coverage, and objectives for growth and profitability.

IDNs not tied exclusively to one health plan should recognize the different needs and market strengths of area payers. A PPO's needs differ from an HMO's; individuals and small groups differ from large employers; commercial payers differ from Medicare, etc. The successful IDN's contracting and sales staffs segment and thoroughly understand the available payers, identifying the key players with whom to build strong, enduring partnerships.

Most providers today are reactive to payers when negotiating rates and managing the overall relationship. A better strategy is to proactively establish preferred relationships through multi-year contracts, full risk sharing, joint efforts to improve cost and quality of care (e.g., protocols, risk assessment, patient education), and joint marketing.

Offer a Product or Service That Is Attractive to a Broad Range of Enrollees. Contracts alone do not necessarily lead to a large population of covered lives, as many provider systems have learned. "Securing" the population means attracting individual members by offering a choice of quality physicians, good access and convenient locations, and building a reputation for quality and service.

Successful IDNs segment potential enrollees and tailor products and services to meet their specific needs. For example, the Medicaid population may need more telephone triage and transportation. Ethnic groups may work best with physicians who can speak their language. The elderly may benefit from wellness and fitness programs. By demonstrating the ability to meet specific and sometimes unique customer needs, IDNs can make their offerings attractive to a broad range of potential users.

4 Manage Financial Risk

Managing financial risk includes effectively pricing services and products, selecting appropriate payers and products to include in the portfolio, capitation and risk pool management, and reinsurance/stop-loss provisions.

Practice Risk-Based Pricing. Pricing is the capitation or reimbursement level the IDN contracts for with its payers. Prices need to balance competitive marketplace requirements with the risk-adjusted cost of managing the covered population. Employee demands and payer competition over the next several years will force prices down. To maintain reasonable returns, IDNs will need to better control the cost of care

and better understand the risk associated with specific populations. Risk assessment tools can help IDNs calibrate the relative risks and expected cost of care for different populations in a much more sophisticated manner than the current age/sex adjustments. Segmenting the population by associated costs results in "tighter" pricing.

Although securing a large population is important, successful IDNs screen products and programs for the adequacy of their pricing and long-term profitability. Just as insurers must understand the underlying risk profile of an account, IDNs must know the risk-adjusted cost versus the expected pricing to select winning contracts.

Allocate Capitation Premiums/Manage Risk Pool Effectively. A clear first step in effective capitation management is the ability to negotiate a rate that allows the IDN to profitably manage a given population's health. The next critical step is allocating that capitation within the IDN to give providers the right incentives to both manage risk and deliver effective care.

Allocation needs to reflect the population's demographics and underlying risk. For example, $0.30 to $ 0.40 per member per month may be adequate for dermatology for an average commercial population but very inadequate for an older population that has experienced significant sun exposure. Similarly, the subcap for pediatric care should vary significantly between more affluent populations and lower income groups. It is also important to recognize where subcaps are appropriate compensation and where they are not (e.g., to contracted specialists who do not have adequate volume).

Shared risk pools can provide incentives to better manage hospitalization and specialist referrals — if all participating partners (e.g., IDNs, HMOs, affiliated medical groups) have both upside and downside risks based on performance. Performance measures focused on member service and quality can offset the risk of underutilization (which could occur under some risk pool incentive structures).

As IDNs assume additional risk and price services more tightly, reinsurance and stop-loss programs become even more critical. These programs should reflect the risk profile and financial strength of the IDN, the patient base's demographics and acuity, and the structure of contracts with other providers and payers. Historical claims and treatment patterns by major disease categories are key inputs into the programs' structures.

Summary

The widespread belief about the end-game for health care delivery and financing is that each major market will consolidate into four or five fully integrated networks — or approximately 500 to 700 IDNs nationwide. Many, perhaps the majority, will not be successful and will not add significant value to their communities. The 150 to 200 IDNs that do will have focused on building and consistently employing the four core capabilities described in this article. Those that do not will be reduced to secondary roles in their markets.

But remember, everyone starts the same way — with whatever circumstances, situation, structure, and skills are at hand. For an IDN's executives, then, it is important to ask: How will they lead their IDN so it stays alive and well while evolving? How soon will they begin?

So the pathway to creating truly integrated health care delivery is laid out: Manage the health and wellness of enrollees, deliver effective care that ensures quality outcomes at the lowest possible cost, secure a sizable population, and manage financial risk. Finding the path requires IDN executives to focus less on organizational structure and asset building and more on creating market distinction in each of the four core competencies. These are the four things that create real value.

This article was written by Russell K. Nash and David J. Bryce.

For more information,
call Debbie Dodge at 1.800.800.2298, Ext. 8683

About APM

More than 550 times since its founding in 1974, health care organizations have turned to APM, a resource dedicated solely to health care change management. APM has become the leading health care management services company based in the United States by dedicating itself exclusively to health care and by achieving exceptional results with its client partners. APM's work with the University Hospital Consortium on the evolution of health care markets, for example, has revolutionized the way the industry thinks about managed care and the development of integrated delivery systems.

APM's clients include many of the most respected systems, academic medical centers, community hospitals, insurance companies, HMOs, multi-group practices, and industry associations.

Today, more than 230 APM expert consultants are helping health care leaders meet the requirements of a changing environment. The firm's services are offered through two major groups, with specialists operating from APM's offices in New York, Boston, Chicago, San Francisco, Salt Lake City, Atlanta, and Toronto.

***The Integrated Delivery System Group** includes strategic planning, system formation, mergers and acquisitions, physician-hospital linkages, primary care development, managed care strategy, provider-payer integration, HMO/PPO development, contracting strategy, provider profiling, and network data sharing. Working with both the providers and purchasers of health care, APM helps its client partners develop integrated managed care strategies and delivery systems that link patients, providers, insurers, and communities into a continuum of care.*

***The Performance Improvement Group** includes clinical resource management, quality improvement, case management, operations restructuring, work redesign/reengineering, patient-focused care, organizational restructuring, information system integration, information technology planning and implementation support. APM has documented $1 billion in client savings in its performance improvement work.*

APM's services and processes are customized for each client, based on a comprehensive assessment of data and information on that client and its competitor organizations. APM believes in transferring technologies and training client staff members to use the tools to sustain a continuous improvement process.

APM
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ATLANTA
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TORONTO
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Sent Oct 1

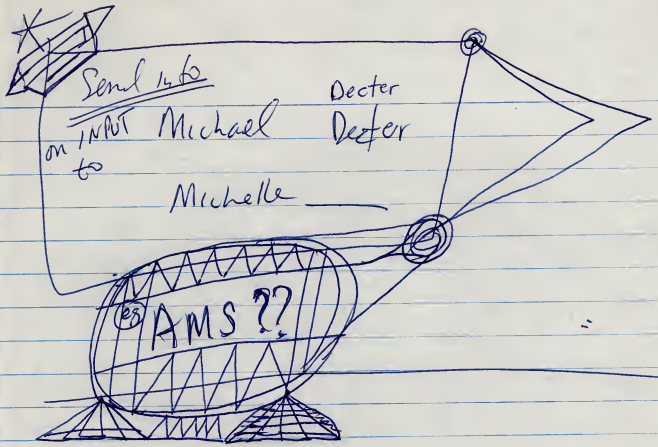
CC Susan

to Jim Kagen

+ Artis Copy

Fed Ex Tues

cc. Art Spiegle (letter only)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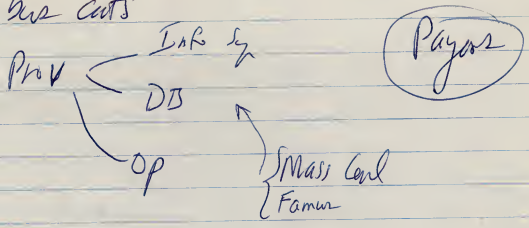

Man Care
- Util Man

Prac Mgt ???

Mkt Share
- SMS
- HBO

---

① Planning Process — Corp / HC planning / Op ⟷ > ② What to do?

Payor give Prov - maybe

big rel in OS (≈ JP Morgan)

US Health - converting to "Fames"

Overall - offering integ svcs ⇒ change client

Cons + others (keeping es) • Share improvement
↙ SI (stronger) • Tech or trad
acq?? OS

CSC = "Super assemblers"
teams, flexibility

Each ind ⇒ sys, sw

bus proc - svs / prime

HC payor prov

need more prov??
Own?? or play w/ everyone
⇒ supervise + coord
vs buying share

100 Aust
Gp McArth

100
150 - 200 US
250-300

150 Global

30-50 misc Continuum

50 pieces (CNST)

Sentinel

Oxford

- CIS ADT
- Med Rec
2o hosp

George Mennings
+
Continuum - practices

OS → other ind doing well

APM + Index
↳ upgrade conv

big pharm | payor (5yr) | some pharm, etc

need more
Our

Compt, esp

- MCIA - what doing

  Perf DD engine (+ cons/mod/ in hosp sw phy

  Data warehouse

MCO-no (easy)

↓

~~Epic~~ MCO-Yes (tight)

↓

Prov

- Consulting
- Sys dev

- The rate the importance of
  * Capabilities
  of packaged s
- To find out how important in sel & using diff factors are ~~to users of~~ financial sw pkgs
- To ~~rate~~ measure ~~the~~ user sat ~~of~~ ~~users of~~ ~~diff~~ leading fin sw pkgs, both overall sat as well as sat

HM 2

- Having it easy so far
- Tighter, squeeze on data
  - knowledge (ARM)
  - Sys dev (ARM + CSC)
  - ~~Op CSC~~
- Ongoing
  - Op CSC
  - Cons ARM

Provider → CSC

- More Attractive as consolidator
- What does CSC not want to offer
  - ↳ If getting in, when?
- How IAPM fit in Govt Other Health
  - now
  - future

- Investment firm, UK Parent & U.S firm
  - [redacted] Travel & Entertainment svcs
  - Rapid Change
  - Role of independent suppliers
- Hosp study
  → Prior study – end 1995
  Clin Perf Obs – two early
- Netw-centric eg IMS
  → new prod/svcs (IBM)
- Card Security Major Telecom
- Food Pg 6
- Partnering/Leg – svcs firm
  - IT-based prod/svc
  - Mkts
  - Tech impact
  - Sell-do-manage

INPUT IT Intelligence Services

400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

September 30, 1996

Ms. Michelle Fatibene
12 Farms Road
Bedford, NY 10506

via Federal Express (tel 914-234-0183)

Dear Ms. Fatibene:

Art Spiegel and I met last Friday. We discussed issues facing APM and the rest of CSC in developing a health care growth strategy. We agreed that fundamental market changes represent both short and long term opportunities for CSC's portfolio of capabilities. Initiatives in new areas like applications software may also be opportunities (or necessities).

We discussed INPUT assisting APM and CSC in planning these initiatives. INPUT (and myself) have considerable background in IT services and software markets, including health care. We have assisted numerous companies in strategy development, competitive analysis, and entry into new markets.

Art asked me to send you and Michael Decter material about INPUT. Also enclosed are

- Excerpts from a recent study INPUT performed on hospital applications directions.
- A focused analysis on PACE/BAsys which I prepared for Jim Kagen.

If you have any questions, do not hesitate to call me.

Sincerely,

Thomas O'Flaherty
Vice President

Attachments

cc. Art Spiegel (letter only)

C

INPUT IT Intelligence Services

400 Frank W. Burr Blvd.
Teaneck, NJ 07666
Tel. (201) 801-0050
Fax (201) 801-0441

September 30, 1996

Mr. Michael Decter
APM
1235 Bay Street - Suite 602
Toronto, Ontario
CANADA

via Federal Express (tel 416-966-9848)

Dear Mr. Decter:

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Thomas O'Flaherty
Vice President

Attachments

cc. Art Spiegel (letter only)

INPUT IT Intelligence Services

400 Frank W. Burr Blvd.
Teaneck, NJ 07666
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August 16, 1996

Mr. James Kagen
Director
APM
1675 Broadway
New York NY 10019

via fax 212-903-9301 Page 1 of 10

Dear Jim:

Thank you very much for the morning I spent with Lisa and Frank last week. I came away with a better idea of where APM is positioned from a software standpoint. I hope my comments were useful.

At the meeting I said I would provide more information on how INPUT could assist you with these software issues:

- Who (and what) is the market for PACE/BASys?
- What should be the direction and contents of the next generation of APM software?
- What are the distribution options for APM software? [In the analysis provided below, this appears to be a subset of the preceding bullet.]

As I got into the analysis, I began to realize what you already know: These are complex, tricky issues, which can have an important bearing on APM's mainstream business, as well as on your relationship with the rest of CSC.

The remainder of this letter contains my preliminary analysis. Passages **in bold** are suggestions on how INPUT can assist you. After further discussion to see if we're on the right track, I can submit a more formal proposal.

The Market for PACE/BASys

To understand the market for your specific products, I think you have to understand the market for clinical performance databases generally. There are at least three sets of issues:

- Functional requirements
- Intensity of needs
- Timing of need

Functional Requirements

APM should have a detailed, non-anecdotal understanding of the evolving requirements of clients and prospects. The following questions are illustrative of those which need to be addressed:

- Should a clinical performance database be a single integrated database? In the APM context, this would mean, potentially, an integrated BASys/PACE product.
- What changes to current BASys/PACE capabilities are necessary to keep up with market needs? Examples:
    - Extensions to current functionality
    - Additions to functionality (e.g., ambulatory, outcomes)
    - Dealing with the charge/cost issue
- What about new customer sets, notably Managed Care Organizations?

An important issue for APM is the extent to which customers want the value delivered by means of a software product, by consulting services or a combination of the two.

Intensity

The "intensity" of customer needs is a key factor. One of the pitfalls we have seen in product planning is using quantitative or qualitative information about customer needs without scaling the relative importance.

- As you noted in our meeting, it is not clear how many of those involved in hospital IT management actually understand the uses of clinical performance database information.

- For those in hospital management that do understand the issues, what level of value do they place on clinical performance databases? How much will this change over time?

- How will they be using clinical database information to improve performance, now and in the future?

- The bottom line, of course, is how much they intend to spend. I believe that it will be difficult to obtain precise, reliable information right now on expected spending (as opposed, say, to asking similar question on software plans in the manufacturing sector). This will have to estimated and inferred.

Exhibit 1 shows my concept on how the market analysis might play out, from the standpoint of functionality and intensity:

- A high level of need may be narrowly or broadly focused (upper half of diagram).

- If the intensity of intentions is not well understood, an broad opportunity could turn out to be unattractive (lower right).

Timing

From APM's standpoint there may be a lot of difference if the take-off point is 1997 as opposed to 1999. Different markets may have different needs over time, as shown in Exhibit 2. (Let me stress that Exhibit 2 is to illustrate principles; without more data and analysis I doubt if anyone can say what the actual circles and lines will be in Exhibit 2 -- contrast lines "a" and "b".)

INPUT can perform structured interviews with current and past APM clients as well as non-clients to understand their current and future requirements. If their current needs -- or likely future needs -- are not being met now we can help to determine the extent to which APM can meet a particular need of customers, that is,

- **Can APM meet a need easily and quickly?**
- **Can APM meet a need with some difficulty?**
- **Would APM find it very difficult (or impossible) to meet a need?**

We can use the data and understanding from the hospital research INPUT performed earlier this year as one of the foundations of our analysis.

The Next Generation of APM Software

From APM's standpoint, I think the most important strategic questions are

- Does the market, on balance, want a standalone clinical performance database product? OR,
- Does the market want a clinical performance database that is part of an integrated hospital system?

Either alternative could present APM with a valuable, perhaps unique, opportunity. The "standalone" opportunity is fairly obvious -- that is the direction you're going in now. APM's opportunity in connection with the integrated clinical performance database may not be quite as obvious. My reasoning is contained in the next few paragraphs.

Integrated Hospital Software

The current direction of integrated hospital IT software is to link packages of functions or modules to a common operational database. This approach assumes there will be ultimately be enough operational data present to supply whatever is needed for a clinical performance database.

I don't think that this approach will gather the necessary information or manage it effectively.

My assumption is that in the next five years the clinical performance database will be the keystone and justification for integrated hospital IT systems in general. If this is true, then

- Integrated hospital systems should not hammered together out of traditional packages. (And many applications software companies may be in trouble.)
- Instead, integrated systems should be built up from the database level, driven in the first instance by clinical performance analysis needs.
- This is illustrated in Exhibit 3.

This assumption needs to be tested.

Integration Issues

These are key issues for APM because APM is of the few organizations with the critical mass of knowledge to help define and construct an integrated system driven by clinical performance improvement.

You shouldn't start building an integrated database just yet.

- First, you have to be convinced the market will be "ripe" for this sort of product two or three years from now (the time necessary to build a product).
- Next, and at least as important, what should APM do from a strategic standpoint? I have identified at least five major decision points affecting APM's future role in the software business (Exhibit 4).

The "CSC Dimension"

The analysis in Exhibit 4 does not touch what I will call the "CSC dimension", e.g.,

- Maybe CSC should, for these or other reasons, build or buy a software products to support hospital operations..
- There is an obvious tie-in with the HMO and health insurance outsourcing software and processing business.
- If clinical performance databases will be driving much of the hospital business, then this could very well help develop a broader outsourcing business.

We can help you address the issues shown in Exhibit 4. (The right sort of internal APM staff could do this if they had the luxury of enough time and there weren't too many organizational walls to climb over.)

I believe we can also help analyze and structure the "CSC dimension", since INPUT understands

- **A considerable amount about CSC and its overall objectives**
- **Health-related IT markets**
- **APM's own part of the business**

(I would have to know more about the overall CSC-APM relationship to be able to be more specific right now in describing our assistance.).

Summary

I think that we can add a lot of value to the decision process you will be going through concerning your software planning. INPUT can conduct the primary research, perform the analysis and draw up conclusions and recommendations that you can use.

I suggest that the next step be a meeting in early September where the issues raised in this letter will be discussed (plus any others that are appropriate). After that we can develop a concrete plan.

Sincerely,

Tom O'Flaherty
Vice President

Attachments

Exhibit 1

Preliminary

Clinical Database Market Segmentation

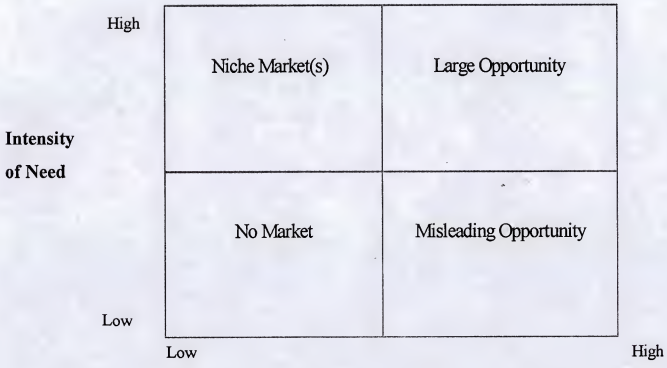
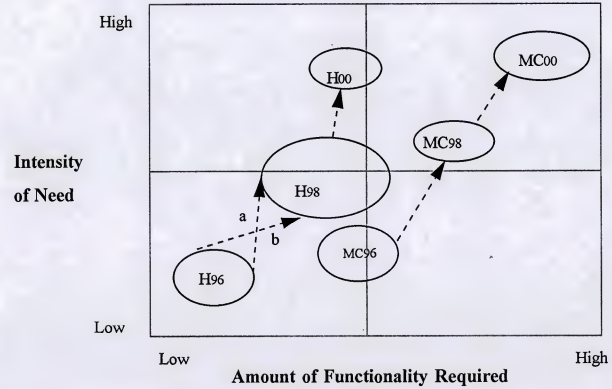


Exhibit 2

Preliminary

Clinical Database Market Illustrations



Examples	1996	1998	2000
•Hospital-based Networks	H96	H98	H00
•Managed Care Organizations	MC96	MC98	MC00

Note: Not based on actual data

Exhibit 3

What is the Proper Relationship of the Clinical Performance Database and Hospital Systems?

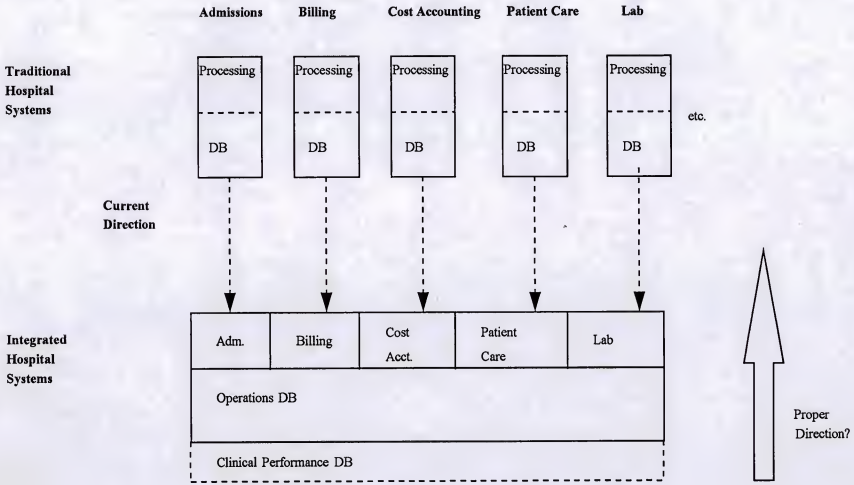
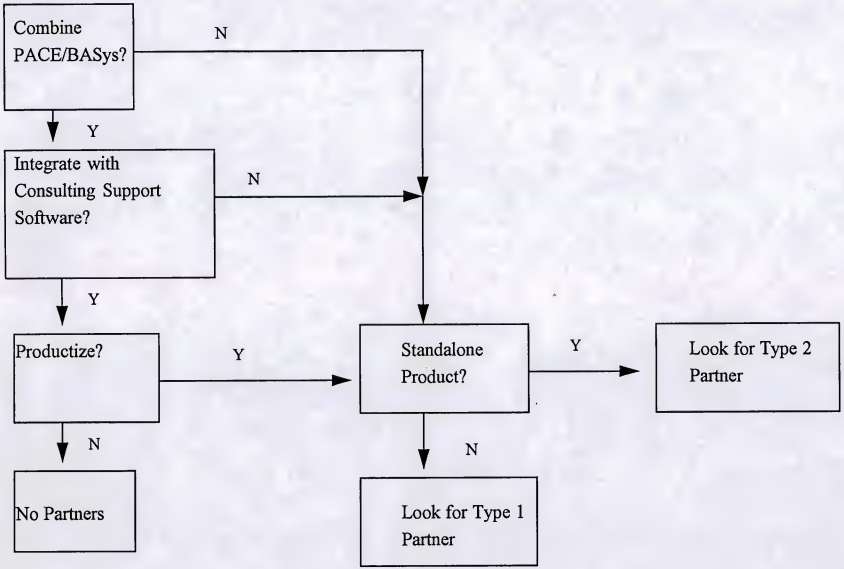


Exhibit 4

Clinical Performance Database: APM's Strategic Issues



Jim K. 9/17 / Broader / CSC

CSC - 500 MM

Australia / Scotland → "CSC Aus" / Continuum } 200 MM

Hunsinger 100 MM

APM / Hindex 100 MM

Other

CNSI 50-100 MM

~~0~~ 450-500 MM

Not much w/ procedure (except APM)

Possibilities

- MNT oppn
- Acq = ? Strat / targets
- Genl ed APM some Health Care IT tech
  - How much known - Priorities
- CSC - dissent know prov MNT (known tech in genl)

SELECTED HEALTH CARE IT OPPORTUNITIES

OPPORTUNITY	VALUE-ADD	PROVIDER UNDERSTANDING	COMMENT
Traditional IT Applications	Low	High	Incrementalism
New IT Applications	High (DB support)	Low/Medium	Discontinuity
Networks (IT-aspects)	Medium	Medium	Complex support role
Database (mega)	Very High	Low/Medium	Change in orders of magnitude

SELECTED HEALTH CARE IT OPPORTUNITIES

OPPORTUNITY	VALUE-ADD	PROVIDER UNDERSTANDING	COMMENT
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New IT Applications	High (DB support)	Low/Medium	Discontinuity
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Database (mega)	Very High	Low/Medium	Change in orders of magnitude

SELECTED OPPORTUNITIES:
POTENTIAL COMPETITIVE ADVANTAGE FOR A VENDOR

(Assumes Top Quartile Competence)

OPPORTUNITY	DEVELOPMENT	OPERATIONS	COMMENT
Traditional IT Applications			
• 1996	High	High	Dying but few know it
• 2000	Low	Low/Medium	Attractive sunset business
New IT Applications			
• 1996	Medium	n/a ?	Resources (Dollars, Knowledge)
• 2000	Very High	High	Feed, tied to DB
Networks (Standalone)			
• 1996	Low/Medium	Medium	Risky, competitive
• 2000	Medium	Medium	More attractive if part of application
Database (mega)			
• 1996	Low/Medium	n/a ?	Education of market
• 2000	Very High	High	Market driver??

SELECTED HEALTH CARE IT OPPORTUNITIES

OPPORTUNITY	VALUE-ADD	PROVIDER UNDERSTANDING	COMMENT
Traditional IT Applications	Low	High	Incrementalism
New IT Applications	High (DB support)	Low/Medium	Discontinuity
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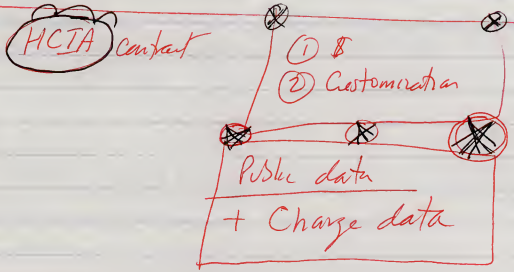
• 2000	Very High	High	Market driver??

Frank

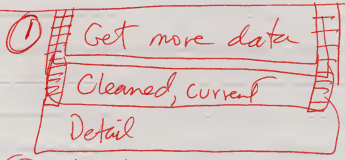
7	Medigap
3	Maximus

1½ + 1½

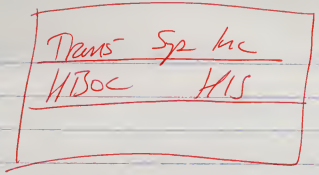
20 outside

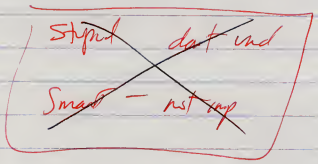


JK



② How to make improvements





Health Plans

"In Form Sachs" } Must Share Carmel Pagan

Zip → Ingenix

Millman, Robinson
Natl Norm
Medicare

HEDIS - Plan data
↳ CSC

Sw/Data 3 yr lic

Yr 1 50k
2 25k
3 25k

HCIA → bought Cam Rvn LBA CRM
Lary Byrnes

Resign

① Who is Mkt # Needs

③ Distribution alternatives
• have 3rd party dist??

② Next gen prod – dir contact
↳ (Integ clinical sol) ↳ CSI

HMISS

AH Grp
• Bill Stead Vanderbilt
•

Natl Inst of Case Mgt (NICM)
Little Rock

Medicalogic (HP)

Elec Med Rec → clinical not as good

"Aswin"

hvn output - just scan in

Lisa _____

TSI - • interface
• sits on top of
• hard for MDs to get to LOG

PACS | same price | 6-10 days support

75
60
$7,500

More CRM compat (LEAN)

B

8 29 130 mm

MIBO SMS
MCIA

INPUT®

1881 Landings Drive
Mountain View, CA 94043-0848
Tel. (415) 961-3300
Fax (415) 961-3966

FAX TRANSMITTAL FORM

Date: 9/5/94

To: Name: Tom O

Tel./Location:

Co.:

Fax No:

From: Name: Renee

Subject: CSC -Urgent

Confidential: Y/N
Urgent: Y/N

Page: 1 of a few...

File: Chron
Contact
Other:

ADM 341/01 8/93

Acctg. ONLY

Inv. Comp.	By:	Date:	Client #	Order # 30000700	Inv. # 30000007	Multi-Invoicing of

CUSTOMER/INVOICE TO

ORIGINATOR (Signature) Paul Kendrick DATE 1-10-96

APPROVALS: PLC VP Sales/Res. 1-10-96 Date / Controller Date

Company Computer Sciences Corp. CA Tax Rate

Name Mr./Ms. GAIL LEPARD CT Tax 8%

Position Salutation

Address 2100 E. GRAND Ave. State CA

Zip 90245

City El Segundo Country

Province Fax

Phone 310-615-0311 Tlx

Special instructions for invoicing, progress billing, or delayed payments, etc.
Please indicate on invoice that second set of reports was sent to CSC Index in SF as shown below TKS

ORDER

Contract Year Beg. End

[X] New Order (N1) [ ] Prior Yr (N3) [ ] Renewal (N2) [ ] Cancel

Invoice Type [ ] Fulfillment Only [X] W/Order (OR) [ ] Monthly (MO) [ ] Quarterly (QT) [ ] Pending

Employee # 540 Sold by: Paul K 100 %

Employee # 540 Commission to: Paul K 100 %

CLIENT AUTH.

PO# INPUT Contract [X] Letter [ ] Verbal [X]

Attach all authorizing documents to white (contract) copy.

SHIP TO

Company CSC INDEX Province

Name Mr./Ms. WALT WILSON Salutation

Position State CA

Address 505 Montgomery Street Zip 94111

Country

City San Francisco Phone 415-434-1500

ITEM TYPE

- Subscription (SB)
- Custom (YC/ZC/KC)VC
- Multiclient (MC)
- Reports (RP)
- Copies (CP)
- Consult/Present (PR)
- Newsletter (NL)
- Reimbursed Costs (EX)
- Merger/Acq. (ME)
- Exec Overview (EO)
- Cont/Seminar (CN)

DETAIL

Indicate US, UK, FR, VA	Prod. ID/Year	Item Type Code	Item Description or Title	Quantity	Price	Shipped By	Date
US	EED7	RP	Elec. Catalogs	(2)	2000-		
US	EED5	RP	EC in Retail/Wholesale	(2)	500-		
US	EED6	RP	EC in Government	(2)	500-		
US	EED3	RP	EC in Manufacturing	(2)	500-		
US	EED4	RP	EC in Transportation	(2)	500-		RO
					$4000-		
	Note: Please shown the $4000 total figure on invoice — for internal INPUT records prices are $2000 for El Catalogs and $500 each for others.						

Fulfillment to be completed in: [ ] Corporate [ ] London [ ] Virginia [ ] France [ ] Other

- White - Contract • Green - Fulfillment • Yellow - Invoice • Pink - Originator • Goldenrod - Sales Manager

M&S180 12/92

INPUT

08/05/96 13:47 ☎415 961 3966 INPUT ⟶ NEW JERSEY 007/008

INVOICE

INPUT

1881 Landings Drive
Mountain View, CA 94043

Tel: (415) 528-8380
Fax: (415) 961-3967

INPUT FEDERAL ID# 94-2385574

Attention: Accounts Payable

To: COMPUTER SCIENCES CORPORATION
Gail Lepard
Dir. Corporate Market Research
2352 Utah Avenue
El Segundo, CA 90245

DATE : 31-Jan-96
INVOICE NO. : 3000007
SALES ORDER NO. : 3000700
P.O. NO. :

	Order Description	Amount
2	E/C - Manufacturing	$500.00
2	E/C - Retail & Wholesale	$500.00
2	E/C - Transportation & EC	$500.00
2	Elec Catalog Web/Internet Mall	$2,000.00
2	USA Elec. Commerce Rpt 4 1996	$500.00
	Net Total:	$4,000.00
	Total Applicable Tax:	$204.00
	Total Order Amount:	$4,204.00

STATE BOARD OF EQUALIZATION REQUIRES US TO CHARGE SALES TAX ON 70% OF THE REPORT VALUE.

Please quote our invoice number on all correspondence.

AMOUNT INVOICED	$4,204.00

incompleteness or inaccuracy of the information provided. INPUT reserves the right to change or modify the contents of the program in response to changing client requirements.

The subscription fee for the Information Services Vendor Analysis Program, Procurement Analysis Reports, Federal Awards of Information Technology, and Federal Agency Procurement Request Services include the license to use of the materials or to operate the database for the term of the subscription. All such materials shall remain the property of INPUT. Unless the subscription is renewed, all such materials must be returned to INPUT within ten (10) days of the of the subscription period, and all databases deleted from all client systems.

Authorizations:

Client:	
Computer Sciences Corporation	(310) 615-1731
	Telephone
Gail Lepard	(310) 322-3685
Name	Fax
Director, Corporate Market Research	
Title	■ Accepted by INPUT:
2352 Utah Avenue	Bob Goodwin
Address	
El Segundo, CA 90245	VICE PRESIDENT
	Title
	Bob Goodwin
	Signature
Gail Lepard	Date 12/27/95
Signature	
12/22/95	

M&S 441 A December 21, 1994

INPUT

SERVICES AGREEMENT

1881 Landings Drive, Mountain View, CA 94043-0848 • Tel. (415) 961-3300 • Fax (415) 961-3966

Programs Subscribed:		
	U.S. Vendor Analysis program	
	U.S. Market Analysis Program (Verticals)	
	U.S. Information Services Forecast Compendium	
	• **Selected Research Reports** - *Systems Integration Opportunities in Southeast Asia* - *U.S. Systems Integration/Professional Services Market Forecast, 1996-2001* - *Opportunities in Network-Centric Outsourcing* - *Developments and Opportunities in Multinational Outsourcing* - *U.S. Outsourcing Forecast, 1996-2001* - *Organizational Change: The World Wide Web as an Enabling Technology* - *Connecting Web Services to Back-Office Systems* - *Firewalls and Tunnels: The Internet as a Wide-Area Enterprise Network* - *An additional report to be selected later* • **40 hours of analyst telephone support** • **Monthly Research Bulletins from 5 INPUT Research Programs** • **Two On-site Presentations** • **INPUT will update the CSC Vendor Analysis Profile during 1996** • **4 copies of all reports and bulletins will be shipped to CSC in1996** • **One new set of Vendor Analysis Profiles and Binders will be shipped in January 1996**	
	Total Fee(s)	**$52,500**

Note: California Clients—Applicable sales tax on 25% of the purchase price will be added

Service Dates: From: **1-1-96** To: **12-31-96**

Terms of Payment:

☐ Enclosed is my check for the above amount.
☐ Please invoice my company on purchase order number. _____ Invoice payable upon receipt
☐ Other

Terms and Conditions: The initial term of this subscription will be for twelve (12) consecutive months.

Acctg. ONLY | Inv. Comp. | By: BF | Date: 12/15 | Client # | Order # 11-2416 | Inv # 130403 | Multi-Invoicing of

CUSTOMER/INVOICE TO

ORIGINATOR (Signature) R L Goodwin DATE 12-27-95

Company CSC
Name Mr/Ms GAIL LEPARD
Position DIRECTOR, CORPORATE
Address MARKET RESEARCH
2357 UTAH AVENUE
City EL SEGUNDO
Province
Phone (310) 615-1771

CA Tax Rate
CT Tax 8%
Salutation
State CA
Zip 90245
Country
Fax
Tlx

APPROVALS
RLG
VP Sales/Res. 12/27/95
Date
Controller
Date

Special instructions for invoicing, progress billing, or delayed payments, etc.
SHIP 4 COPIES OF ALL REPORTS & DELIVERY TO GAIL.

ORDER

Contract Year Beg. 1-1-96
End 12-31-96

Invoice Type ☐ Fulfillment Only ☒ W/Order (OR) ☐ Monthly (MO) ☐ Quarterly (QT) ☐ Pending

Employee # Sold by: BG 100 %

Employee # Commission to: — — %

☐ New Order (N1) ☐ Prior Yr (N3) ☒ Renewal (N2) ☐ Cancel

CLIENT AUTH.

INPUT Contract ☒ Letter ☐ Verbal ☐

PO#
Attach all authorizing documents to white (contract) copy.

SHIP TO

Company
Name Mr./Ms.
Position
Address
City
Province
Salutation
State
Zip
Country
Phone

ITEM TYPE

- Subscription (SB)
- Custom (YC/ZC/KC)VC
- Multiclient (MC)
- Reports (RP)
- Copies (CP)
- Consult/Present (PR)
- Newsletter (NL)
- Reimbursed Costs (EX)
- Merger/Acq. (ME)
- Exec Overview (EO)
- Conf/Seminar (CN)

DETAIL

Indicate US, UK, FR, VA	Prod. ID/Year	Item Type Code	Item Description or Title	Quantity	Price	Shipped By	Date
[redacted]							
US	VA 96	SB	U.S. VENDOR ANALYSIS		14,000		
US	MA 96	SB	U.S. MARKET ANALYSIS		18,000		
US	SERVICE	REPORT-SIZE			5,000		
	SI 96	RP	SATISFIED		5,000		
	OS 96		ADDENDUM		8,000		
	IN 96				9,500		
					52,500		

Fulfillment to be completed in: ☐ Corporate ☐ London ☐ Virginia ☐ France ☐ Other

• White - Contract • Green - Fulfillment • Yellow - Invoice • Pink - Originator • Goldenrod - Sales Manager

M&S180 12/92

INPUT

-Winup

08/03/96 13:46 ☎415 961 3966 INPUT →→→ NEW JERSEY ☎003/008

INPUT

1587 Landings Drive, Mountain View, CA 94043-0848
Tel. (415) 528-8380 Fax (415) 961-3967

INVOICE

INPUT FEDERAL ID#94-2385674

ATTENTION: Accounts Payable

12/27/1995

To:

COMPUTER SCIENCES CORPORATION
Gail Lepard
2352 Utah Avenue
El Segundo, CA 90245

(310) 615-1731

DATE: 130403

INVOICE #: MMAP.

PROJ. CODE:

SALES ORDER #: 112996

PURCHASE ORDER #: H145941ES

ORDER DESCRIPTION	AMOUNT
JANUARY 1, 1996 THROUGH DECEMBER 31, 1996 - U.S. VENDOR ANALYSIS PROGRAM - U.S. MARKET ANALYSIS PROGRAM(VERTICALS) - U.S. INFORMATION SERVICES FORECAST COMPENDIUM - SELECTED REPORTS PER SERVICES AGREEMENT COPY ATTACHED THE STATE BOARD OF EQUALIZATION REQUIRES US TO CHARGE SALES TAX ON 25% OF THE SUBSCRIPTION VALUE.	
AMOUNT INVOICED	$ 53,582.82

Thank You!

ACT 3/DO1 (r 4/95)

INPUT

INVOICE

1881 Landings Drive, Mountain View, CA 94043-0848
Tel (415) 526-6380 Fax (415) 961-3966

INPUT FEDERAL ID#94-2565674

ATTENTION: Accounts Payable

12/27/1995

To:

COMPUTER SCIENCES CORPORATION
Gail Lepard
2352 Utah Avenue
El Segundo, CA 90245

(310) 615-1731

DATE 130403

INVOICE # MMAP.

PROJ. CODE

SALES ORDER # 112996

PURCHASE ORDER # H145941ES

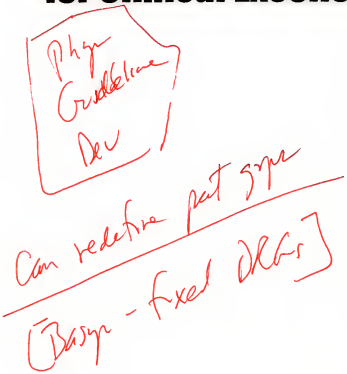
ORDER DESCRIPTION	AMOUNT
JANUARY 1, 1996 THROUGH DECEMBER 31, 1996 - U.S. VENDOR ANALYSIS PROGRAM - U.S. MARKET ANALYSIS PROGRAM(VERTICALS) - U.S. INFORMATION SERVICES FORECAST COMPENDIUM - SELECTED REPORTS PER SERVICES AGREEMENT COPY ATTACHED THE STATE BOARD OF EQUALIZATION REQUIRES US TO CHARGE SALES TAX ON 25% OF THE SUBSCRIPTION VALUE.	
AMOUNT INVOICED	~~$ 93,582.82~~

Thank You!

ACT 32/D/1 (r 4/93)

PACE™

Performance Assessment for Clinical Excellence



APM

MANAGEMENT CONSULTANTS

APM Incorporated
1 Speen Street, Suite 105, Framingham, MA 01701
New York • San Francisco • Boston • Chicago

PACE™

Performance Assessment for Clinical Excellence

APM's *PACE* System, Performance Assessment for Clinical Excellence, is an analytic and report generating software tool to promote efficient physician utilization of inpatient clinical resources and quality patient outcomes.

Overview

The analytic and report generating tools inside *PACE* have been developed and utilized by APM Management Consultants in over 20 Clinical Resource Management (CRM) consulting engagements with hospitals. Physicians and hospital staff have worked with CRM tools to generate reductions in inpatient cost per case of 10-20% house-wide and 30-50% in focused clinical areas. APM developed CRM into a software product to realize its potential as a cornerstone of any hospital-based utilization/outcomes management effort. At present *PACE* is an inpatient resource profiling system; as hospitals and health systems begin to manage more capitated lives, *PACE* will evolve to profile data across the continuum of care.

Why the PACE System Works

What does PACE actually do and what data does it manipulate? How are these data used to effectuate change in physician practice patterns and overall hospital resource consumption?

To fully understand the answers to these questions, *PACE* needs to be placed in the context of hospital-based utilization management programs.

APM, in its partnership with its clients, uses three key levers in effectuating reductions in hospital utilization of clinical resources. These levers are:

1. *Development and implementation of clinical practice guidelines in high cost, high volume clinical areas and levels of care*
2. *Education of Medical Staff as to the importance of utilization management, combined with distribution of physician profiles describing their utilization of resources*
3. *Implementation of case management programs for high risk, expensive patient populations*

PACE provides the necessary data, benchmarks, and tracking systems to successfully support these three levers.

How PACE Works

The full PACE system consists of user-friendly software, data management support, and implementation training and consultation.

The software is designed to provide all the critical information for provider profiling, clinical guideline development, and ongoing monitoring of cost and quality. The data management service makes it easy for clients to maintain the system since all they are required to do is submit raw data files from existing information systems to APM, who then edits, adjusts, and formats the data for use in the software. Finally, a comprehensive implementation package of training and support services are provided by expert APM consultants who assure that the client is trained to not only operate the system, but integrate it into the quality/utilization management program of the hospital.

How the System is Used

***PACE* supports two primary functions:**

1. Development of Clinical Practice Guidelines

Practice guidelines, protocols, or policies when implemented with *PACE* have generated 30-50% cost per case savings in focused clinical areas. This is accomplished through a data-driven process which creates physician enthusiasm around the ability to improve clinical decision-making and reduce unnecessary resource utilization.

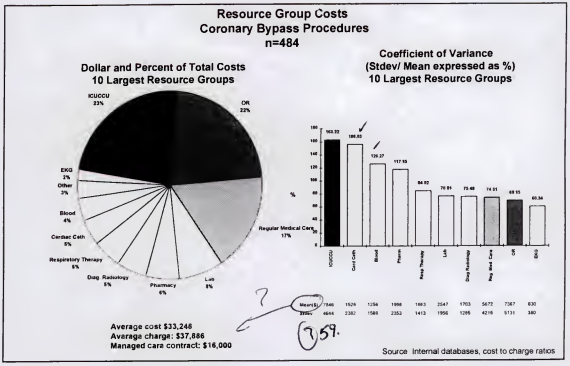
PACE takes the hospital charge master data (the sum of all patient bills) and creates reports by DRG (or other homogeneous patient group).

Charge Master Utilization Profile

CABG file 106, 107 and 546
508 records

Resource Group	Charge Code	Description	Units When Used	Cases	TotQty	Total Costs	Cost/Unit	% Cases
ER	37110038	Emergency Room 6	1 23	80	98	$16,750	$171	15 75%
ICUCCU	33100017	R&B RV MD ICU 17S	3 59	17	61	$73,325	$1,202	3 35%
ICUCCU	33100025	R&B RV MD CCU	4 8	226	1084	$1,300,365	$1,200	44 49%
ICUCCU	33110016	R&B RV SG ICU 16S	9 4	45	423	$493,764	$1,167	8 86%
ICUCCU	33130014	R&B RV SSD 18S2	4 4	5	22	$26,652	$1,211	0 98%
ICUCCU	33300013	R&B REV CVICU	5 44	505	2745	$3,292,619	$1,199	99 41%
LAB	42100016	LAB STAT CHRG	68 67	506	34749	$171,764	$5	99 61%
LAB	42100073	7 CLNCAL CHEM TST	5 7	502	2880	$42,408	$15	98 82%
LAB	42100081	8 CLNCAL CHEM TST	1 98	162	321	$4,986	$16	31 89%
LAB	42100131	13-16 CLNC CHEM TST	1 99	194	386	$9,267	$24	38 19%
LAB	42100156	19 MORE CLNC CHEM TST	9 65	506	4881	$134,412	$28	99 61%
LAB	42115170	LAB AMYLASE SERU	7 42	505	3749	$34,413	$9	99 41%
LAB	42115329	CPK MB ISOENZYMES	7 29	504	3676	$114,207	$31	99 21%
LAB	42115576	CREATNE KINAS ISO	9	504	4538	$41,675	$9	99 21%
LAB	42115709	LAB DIGOXIN	7 8	262	1990	$56,206	$28	51 57%
LAB	42116145	LDH ISOENZYMES	4 88	261	1273	$35,955	$28	51 38%
LAB	42116384	OSMOLALITY SERUM	6 2	505	3129	$33,141	$11	99 41%
LAB	42116491	PROCAINMDE N-ACET	6 2	184	1141	$36,255	$32	36 22%
LAB	42118505	LAB VANCOMYCIN	7 01	73	512	$16,269	$32	14 37%
LAB	42118729	VENIPUNCTURE CHARGE	15 97	507	8097	$47,449	$6	99 80%
LAB	42123026	LAB APTT	21 01	507	10652	$97,778	$9	99 80%
LAB	42123323	FIBRINOGEN LEVEL	3 62	505	1830	$32,304	$18	99 41%
LAB	42123570	PLATELET COUNT	13 76	506	6963	$63,915	$9	99 61%
LAB	42123638	PROTHROMBIN TIME	21 07	507	10683	$67,892	$6	99 80%

By showing physicians data at the lowest level of detail available - units of service - physicians clearly see where improvements in resource utilization can occur. Physicians then identify how they can pursue a non-threatening first step - remove all egregious practice patterns while not jeopardizing quality of patient care. Once physician attention is captured around the data, the *PACE* pie and bar report can be used to focus the efforts to high cost, high or low variance resource groups.



Physicians can then take the charge master report and the pie and bar graph and identify key products where utilization can improve. Practice guidelines can then be written around these key products. Additionally, *PACE* suggests that target utilization be drafted for each key product.

Tracer Product Utilization: CABG Patients

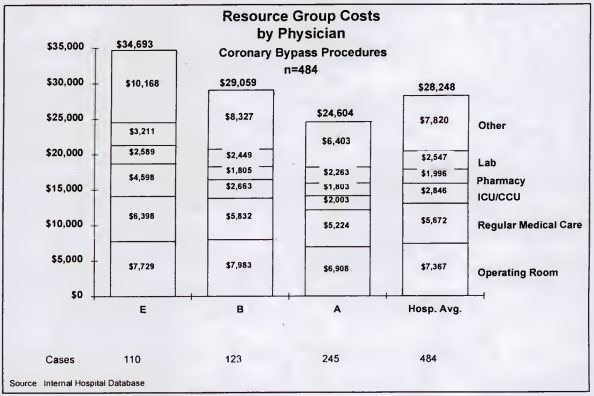
		Utilization Before Protocols		Target Utilization		1st Qtr '94 Utilization		
Resource Group	Product	% of Patients	Units when used	% of Patients	Units when used	% of Patients	Units when used	$ Saved Per Patient
Blood	RBC Packed (Includes Baer Hugger)	92.7%	7.42	92.7%	4	61.2%	3.5	$881
Diagnostic Radiology	Chest, AP (Port)	99.8%	12.06	99.8%	6	95.3%	4.52	$949
ICUCCU	R&B rev cvicu	99.4%	5.44	99.4%	2	91.8%	2.42	$3,820
Lab	Chem 19 (chem 23)	99.6%	9.65	99.6%	2	76.5%	2.66	$209
Lab	LAB APTT	99.8%	21.01	99.8%	1	85.9%	7.32	$135
Regular Medical Care	R&B Rev Surge 18N	97.4%	8.28	97.0%	5	96.5%	5.22	$1,535
						Total	25.64	$7,529

PACE will take these key products and the target utilization and create a tracking spreadsheet which physicians can review periodically. Additionally, *PACE* tracks a number of quality measures that can be evaluated over time to assess whether changes in utilization have impacted patient outcomes.

2. Medical Staff Education

Research has shown that low level, practical education of Medical Staff is most effective in increasing physician awareness of resource management issues and modifying physician behavior. *PACE* allows for the periodic sharing of physician-specific data in the form of physician practice profiles. These profiles incorporate severity adjusted and case mix adjusted benchmarks of LOS and charges into easy to understand reports.**Resource Group Costs by Physician**

Coronary Bypass Procedures
n=484



Charges are broken down into important buckets such as lab, radiology, and pharmacy so that physicians can see whether their ancillary utilization is higher or lower than expected. Additionally, DRG level reports can be produced that show physician specific performance in their high volume diagnoses and procedures.

When presented this type of information on an ongoing basis, through a structured process, physicians have improved their resource utilization and quality dramatically. ***The PACE system provides the necessary tools and training to achieve results.***

Benefits of PACE

PACE offers the opportunity for hospitals to quickly and efficiently improve the cost and quality of patient care through a combination of advanced analytic software, program implementation and training. APM has over 15 years experience in assisting health care providers to become more efficient and effective in a competitive marketplace. *PACE* represents APM's most current and successful approach to achieving long lasting and continuous improvement.

FOR MORE INFORMATION CONTACT:

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Arkansas
9 hosp
+IDX
Beyond HCIA

BASys™

The Benchmarking Analysis System

Comparison
not action
→ PACE

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Management Consultants

Implementing

Change

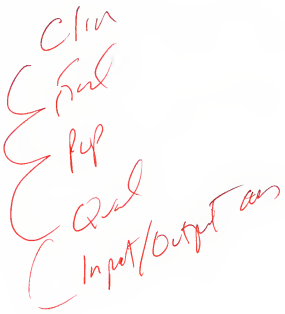
in

Health Care

Delivery

BASys ™

The Benchmarking Analysis System



WHEN THE CHALLENGE IS CHANGE

BASys™

The Benchmarking Analysis System was designed based on the successful experience of APM, leading consultants in the health care industry. The system is used by APM consulting teams whose work has resulted in millions of dollars in savings due to performance improvements.

Management can utilize comparative information to quickly assess performance in terms of cost, quality and utilization.

This system maximizes existing information with little or no new data collection and integrates key measures from several data sets positioned throughout the organization. APM provides full data management services after the client produces the initial data.

The software is a user-friendly PC based product utilizing state of the art technology and requires minimal investment in hardware.

Frequent user groups, client newsletters and technical support enhance utilization of the applications within the system.

Managers will find this an invaluable tool for monitoring organizational performance, negotiating contracts and prices, marketing, and evaluating process improvement.

This product is particularly useful to APM Operational Excellence and Clinical Resource Management clients as a system for the ongoing tracking, trending, and monitoring of key performance measures used during consulting engagements.

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SYSTEM FEATURES & BENEFITS

SYSTEM FEATURES		SYSTEM BENEFITS
Summary Level Reports for Management	→	Applications tied to Management Decision Making
Uses readily available data	→	No additional staff needed, compliments existing systems
Drill Down Feature	→	Quickly see what is causing variation and where to focus efforts
Updated Quarterly	→	View Results of Changes
Entirely Graphical	→	Use directly for presentations
Resides on a Local PC	→	Fast Query times, low cost
Easy to use with little training required	→	Can be used at all levels of management
Incorporates all elements of data - clinical, operational and market information	→	One System provides all the data
Availability of multiple comparative and Benchmark norms	→	Allows for external comparison of performance
Indicator of Statistical Significance	→	Helps Administrators determine if variation will continue

Case Study Example:

THE POWER OF MANAGEMENT INFORMATION

Your organization has recently completed the implementation phase of a combined APM Operational Excellence and Clinical Resource Management project. Patient care units have been restructured, many ancillary departments de-centralized, and clinical practice guidelines are in place for several patient types. You have seen a large reduction in operating costs with expectations for further reduction; patient outcomes and service quality have been assessed and appear to be slightly improved; and the medical staff is actively using the initial clinical guidelines.

How do you assure that your organization continues to show improvement, and how do you demonstrate your improved performance to those external parties that demand comparative cost and quality information?

BASys can provide you with a proven solution.

BASys and PACE Fact Sheet

Data Requirements

Client Data

APM software clients submit data based on a standard data request. This request outlines the various electronic files that are required for system operation. The standard files include UB 82/92, chargemaster, and cost report data. These data are submitted quarterly to APM Information Resources, where they are cleaned, edited, severity adjusted, and loaded into the appropriate files for the software.

Benchmark Data

APM Information Resources maintains 11 statewide all payor databases, Medicare cost report and patient discharge databases, as well as APM proprietary data. These data represent over 60% of annual hospital discharges nationally. Hospitals in public databases can be identified by name; however, for proprietary data, we cannot release the names of any individual institution, or provide detailed information that will allow for the identification of any individual organization in our analysis. The proprietary information is used to create normative benchmark information. Several of the clients in our database show excellent performance across numerous measures and can be used as "best practice" benchmarks.

Hardware Requirements

Both BASys and PACE operate off of PC hardware configurations. PACE hardware requirements are more extensive due to the large size of the chargemaster database. To run BASys, the minimum requirements are a 486 - 66 MHz personal computer, 16 meg. RAM, 400 meg. hard drive or larger, SVGA color monitor, Colorado or Maynard tape back-up unit - 200 meg. minimum, 9600 baud modem or faster, network card or adapter if running as networked application, and a printer (HP 4 series or HP Deskjet Color are recommended). To run PACE, the minimum requirements are Pentium 120 MHz personal computer, 32 meg. RAM, 4 gig. SCSI hard drive (2 gig minimum, 4 gig recommended), SVGA color monitor, 9600 baud modem, Colorado or Maynard tape back-up unit - 200 meg. minimum, network card or adapter if running as networked application, printer (HP 4 series or HP Deskjet Color are recommended). Both BASys and PACE can run on the same machine as stand-alone applications off of the PACE hardware configuration.

Severity Adjustment

APM Information Resources severity adjusts all client and comparative data using the 3M APR-DRG (all patient refined diagnosis related groups) system. This system assigns each patient an APDRG, similar to the DRG system, but adds a severity value of 1 to 4 based on a patient's diagnoses, procedures performed and age. Benefits of this severity adjustment include: (1) improved prediction of length of stay and cost/charge per case, (2) increased comparability of data among hospitals by decreasing variability in hospital coding practices and (3) increased relevance of codes for non-Medicare population specifically newborns, HIV, and substance abuse.

Pricing and Fee Structure

Both BASys and PACE are priced based on a 3 year agreement. Year 1 fees include software licensing, customer support, installation, training, and quarterly data updates. Years 2 and 3 include ongoing customer support and quarterly data updates. For PACE, a more extensive training program is added to the year 1 fees. Contact APM Information Resources directly for pricing information.

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BASys™
Benchmarking Analysis System

THE SINGLE SOLUTION FOR PERFORMANCE EVALUATION AND MONITORING: **BASys is the only software program that benchmarks performance across the following dimensions:**

- **Clinical benchmarking**: Provides severity-adjusted cost per case and length of stay analysis. Data analysis drills down from the institution level to the service line, department/specialty, DRG, APDRG, and physician levels
- **Quality benchmarking**: Benchmarks performance of 19 rate-based quality indicators such as mortality, post-operative infection, and c-section rate
- **In/outpatient analysis**: Compares ratio and charges of procedures performed on both an inpatient and outpatient basis
- **Operations analysis**: Benchmarks labor and non-labor expenses per unit of output at institutional, department and sub-department levels
- **Financial forecasting**: Regression analysis allows management to identify the relationship among various measures across hospitals and predict how the health care operation evolves with market and case type changes
- **Market share:** Allows for push-button access to market share analysis by geographic region and diagnostic group
- **Population analysis**: Profiles admissions and days per 1000 and provides clients with a unique understanding of managed care economics and capitation. Analysis is split by geographic region and diagnositc group

MAXIMIZING LEADERSHIP'S ACCESS AND USE OF INFORMATION: **BASys is designed to be used by clinical and operational leadership to quickly assess performance improvement opportunities and trends.**

- **Rapid installation**: Because BASys operates on stand-alone or networked PCs and uses electronically available data, installation occurs 3-4 weeks after data submission
- **Easy to use**: Without computer expertise, senior executives, and managers master BASys' point and click functionality in 2 hours or less
- **Graphical capability**: BASys reports are in color and presentation-ready at a click of a button
- **Statistical significance**: Comparative values have measures of statistical significance for accurate data interpretation

THE POWER OF BASYS: **BASys is used by hospitals and health networks as a system to support clinical, operational, and strategic initiatives. Examples include:**

- Set goals for cost per case and length of stay for the top 10 APDRGs in Cardiology
- Measure impact of new staffing models on quality of care
- Set productivity targets for departments
- Forecast FTE impact based on changes in patient severity of illness
- Assess service area's actual vs. expected admission and use rate for asthma and pneumonia before payor negotiations
- Determine market share opportunities to prepare for an upcoming strategic planning meeting

STAY ON THE CUTTING EDGE: **BASys evolved out of the successful experience of APM, the leading consultants in the health care industry. BASys' goal is to maximize the value of current health care information for its users. Program enhancements come from APM's continued work in performance improvement. Future plans include:**

- **Enhanced managed care module** using claims data to profile physician performance on an outpatient basis
- **Enhanced operational analysis** using APM proprietary databases to benchmark the cost and quality measures that are most critical to hospital operational performance

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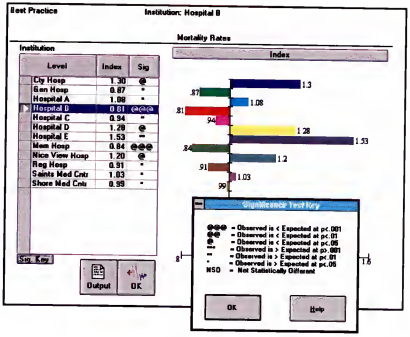
Clinical Quality Indicators

You need to be able to demonstrate that your hospital provides high quality care relative to comparative norms while assessing the impact of operational changes on key quality measures.

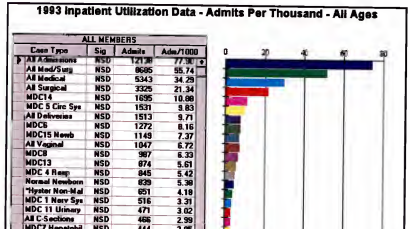
This system will give immediate answers to these questions. You have the ability to show severity adjusted comparative rates for clinical quality indicators such as mortality, complications, readmissions, and C-sections. These measures can be analyzed at the institution, service line or diagnosis group level.



Population Profile

You need to assess your service area population to determine the current and future need for health care services and your institution's position relative to other providers in offering such services.

The system will enable you to see if geography can support an increase in admissions or services. The system uses statewide hospital data to allow you to evaluate your share of the market and the potential for expansion of services.

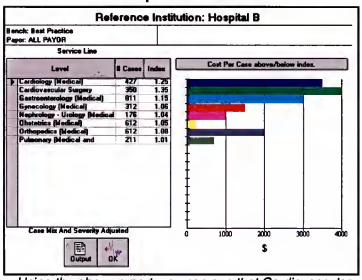


Clinical Efficiency

You need to continuously monitor comparative cost and resource utilization at the department, physician and clinical category level to assure that performance is improving.

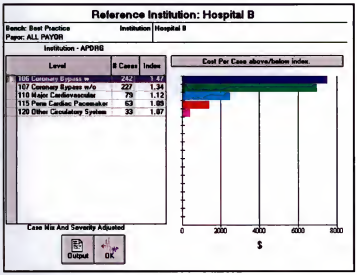
By comparing your performance to that of local, regional, or national norms, you have the ability to see if charge or cost variation is due to length of stay or utilization of specific ancillary services. Here the drill down features can provide information to determine which services are causing cost variations.

Cost per Case Variance



Using the above report you can see that Cardiovascular Surgery is extremely high cost relative to the comparative benchmark.

Cost per Case Variance



This example shows that DRGs 106 & 107, Bypass Surgery, are accounting for variance in Cardiovascular Surgery.

Department Level

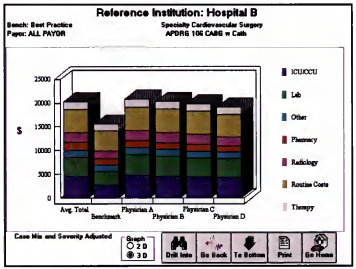
to

APDRG Level

to

Resource Group Level

Ancillary Cost Variance

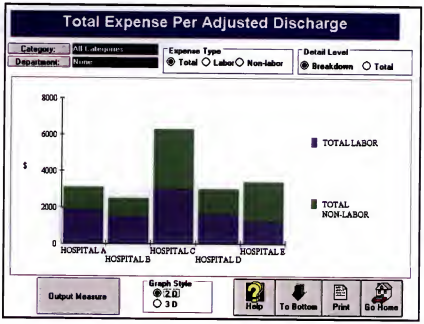


This example illustrates that within DRG 106, there is high utilization of all services, but particularly ICU/CCU care.

Operational Efficiency

You need to continuously monitor and trend key operating cost and productivity measures to assure that they are in line with targets and external norms and benchmarks.

This system can provide detailed cost per unit of output measures as well as unique organizational readiness measures to provide the basis for distributing and managing resources more effectively throughout your organization. Again, APM proprietary comparative cost databases allow for external comparison and benchmarking.



BASys™

The Single Solution for Performance Monitoring

APM Information Resources

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INSTALLATION INSTRUCTIONS

Welcome!

Thank you for your interest in APM's Software Systems. Attached are demonstration diskettes for both BASys™ and PACE™. These disks contain only a sample of the reports and analyses contained in each system. In order to run the demo, you will need:

Microsoft Windows® 3.1 (installed locally on your PC)
3.3 megabytes of available disk space
Approximately 10 - 15 minutes to view each demonstration.

TO INSTALL EACH DEMO:

*(**note:** The installation process will take approx. 5-10 minutes per product depending on the speed of your machine)*

1. From the Windows Program Manager Menu:
   Select **File**
   Select **Run**
   Type **a:\setup** then press **Enter**
2. Press **Continue** to install the demonstration to your hard drive.
   *(**note**: changing the installation path could affect the Uninstall option)*
3. You will be prompted to install Disk 2 (for PACE only).
   (Note: PACE has two necessary disks, BASys has one necessary disk)
4. If needed, Repeat Step 1 to install the ADDITIONAL FILES Disk
   *(**Important**: Please note that you do not have to install the ADDITIONAL FILES DISKETTE if your PC has a full and complete installation of Microsoft Office. Also, you only need to install this disk ONCE!)*
4. When setup is complete, double click the APM Demo icon.

NOTE: If you receive a SHARE.EXE error message:
If you receive an error message stating *share.exe must be installed*, please read the following. SHARE.EXE needs to be installed in the CONFIG.SYS file. If the L parameter is not set to a minimum of 500, various query functions of the program will not work. This may cause the demo to freeze and the user will be exited from the system. This problem may be remedied by editing c:\CONFIG.SYS, using either DOS or WRITE. The correct line in CONFIG.SYS reads as follows:

Install=c:\dos\share.exe/L:500/f:5100

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PACE™

Performance Assessment for Clinical Excellence

THE DATA SOLUTION FOR YOUR CLINICAL IMPROVEMENT PROGRAM: PACE *unlocks the power of the large chargemaster and demographic databases* to directly support two key clinical improvement initiatives: (1) the development of clinical pathways or practice guidelines and (2) physician education and utilization target-setting. To support these initiatives PACE provides:

- **Item utilization data profiles:** Quickly assess appropriateness and quality of care (e.g., use of TPA vs. Streptokinase)
- **Clinically meaningful and statistically valid data:** Create severity adjusted groups of clinically similar patients, not limited by traditional case-mix groups used for reimbursement
- **Physician profiles**: ready for distribution, turn-key
- **Practice guideline monitoring reports:** Track actual performance vs. established utilization targets and guidelines
- **Review item utilization by case and day of stay:** Addresses "how many" and "when"

DESIGNED BY PHYSICIANS FOR PHYSICIANS: APM physicians and consultants have worked with clinicians across the country to develop a process for successful clinical improvement. These physicians developed PACE so it supports this results-oriented process. Some of the key features include:

- **Clinical users have direct access to data:** PACE software and data reside on local or LAN-based systems
- **Flexible, user-defined groupings of data:** User creates groupings of patients and items that are clinically meaningful and relevant to practicing physicians and other care givers
- **Ability to focus on REAL opportunities for clinical practice improvement:** Physicians relate to the item-level data, which represent clinical services and resources provided to each patient
- **Powerful database engine provides quick access to data:** A powerful and intelligent database engine processes and reports on data in minutes, not hours or days
- **Extensive training program:** Physicians, quality managers, and clinical analysts learn more than just how to use PACE; the training program focuses on achieving significant utilization reductions and quality improvements
- **Rapid installation:** Installation occurs 3-4 weeks after receiving data

UNLOCK THE POWER OF PACE: PACE focuses on providing data that engages and involves physicians in clinical analysis and improvement. Examples of how PACE is used include:

- Provide data to multiple clinical workgroups that stimulate clinical practice improvement and result in significant cost reduction (20-50%)
- Track impact of new or existing guidelines without time consuming data collection and entry
- Distribute quarterly physician data reports without costly report design and benchmark data acquisition
- Sit down with physicians to review specific cases without pulling or abstracting charts
- Measure impact of new or existing guidelines on quality of care

STAY ON THE CUTTING EDGE: PACE originated from APM consultants' direct client experience. APM consulting teams use PACE with their clients to achieve significant utilization reductions and improved patient outcomes. Future developments come from cutting edge work in clinical practice improvement. Plans include:

- **Questionnaire builder:** Allows user to design survey tools which collect important risk factors and outcomes data to enrich the PACE data repository
- **Clinical modules:** Benchmarks 10-20 key clinical decisions that affect cost and patient outcomes for specific disease and procedure-related patient groups for "best practice" providers

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