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From the Desk of R. Lewis Dark...

THE DARK REPORT

RELIABLE INTELLIGENCE, EXCLUSIVELY FOR MEDICAL LAB CEOs / COOs / CFOs

R. Lewis Dark: New York Laboratories Discover New Power.....Page 1

Unilab Pushes Insurers To Increase Cap Rates.....Page 2

Differing Views About Capitation Rate Trends.....Page 5

New York Laboratories Sue State To Overturn Surcharge.....Page 7

An Industrial Engineer Looks At Laboratory Automation And Robotics.....Page 9

Second War College Set For New Orleans In May.....Page 16

Intelligence: Late-Breaking Lab News.....Page 18

Restricted information, see page 2

Commentary & Opinion by...

R. Lewis Dark

Founder & Publisher

New York Laboratories Discover New Power

For those of you following the story of New York's new surcharge on clinical laboratory tests, there is a great lesson to be learned. It is a lesson in the extensive power possessed by clinical laboratories.

After New York's hospital finance reform law passed the legislature last summer, lab industry representatives spoke with state legislators, the governor's office and the Department of Health. They requested reconsideration and removal of laboratories from the tax pool. They got mixed signals of cooperation, but no action on the situation. Laboratories responded with a two-pronged strategy. First, they filed suit in state court to obtain injunctive relief. That suit was filed on December 30, 1997.

Second, as the 8.18% surcharge on laboratory tests took effect January 1, 1997, laboratories in New York, under the leadership of the **New York State Clinical Laboratory Association** (NYSCLA) began to send out patient bills with a simple message, paraphrased as: "Dear patient, this bill includes a tax which represents the first time New York State has imposed a direct tax on citizens for a healthcare service. Please let your elected state officials, the governor and the Department of Health know how you feel about this new tax."

With 100,000 patient bills mailed daily, response was immediate. According to Tom Rafalsky, NYSCLA's President, offices of the Department of Health are averaging at least 800 calls per day. The governor's office, state senators and state representatives are receiving a constant flow of calls as well. Albany now pays serious attention to the valid issues raised by the clinical laboratory industry as to why they should be excluded from a taxing scheme to finance hospital care.

But the story gets better. Nearby "Taxachusetts," always ready to raid taxpayers' pockets, was preparing to follow New York's example and tax laboratory tests. However, during last week's hearing on proposed legislation to fund the Uncompensated Care Pool, it was asked why clinical laboratories were not included in the draft under consideration. A Massachusetts representative told the committee that "the nightmare in New York" had caused them to remove clinical laboratories from the Massachusetts bill.

For me, it validates the power possessed by clinical laboratories. They have only to recognize it and use it. By sending messages on patient bills, just like utility companies, the lab industry not only prevented the spread of this onerous tax scheme to Massachusetts, but they may prod New York legislators to remove clinical laboratories from the surcharge tax pool. TDR

Unilab Pushes Insurers To Increase Cap Rates

Action may trigger lab industry movement to raise capitated lab rates in California

CEO SUMMARY: California's financially destructive capitation rates plunged two more laboratories into bankruptcy. Unilab's actions indicate that even the largest laboratory company in the state can no longer survive without reimbursement relief. The question remains as to whether managed care plans will agree to pay more for laboratory testing.

INDICATIONS ARE THAT CAPITATED RATES for laboratory testing in California may soon begin increasing. If so, it would mark a new phase in that state's evolution toward managed healthcare

Were reimbursement levels for laboratory testing to increase, one direct cause would be **Unilab Inc.'s** efforts to renegotiate prices. It is widely known that Unilab recently sent out letters to an unconfirmed number of managed care plans for which it is contracted to provide laboratory services.

In these letters, Unilab requests that rates for laboratory testing covered under these contracts be renegotiated. In some cases, Unilab is using these letters to trigger a 90-day notice that it intends to cease providing services per terms of the contract.

Unilab officials have not issued public statements concerning this situation. Nor did they return telephone calls placed to their headquarters by THE DARK REPORT.

Unilab is the largest clinical laboratory operating within California. With $200 million in revenues, it does almost double the physicians' office business of the combined California operations of **Smithkline Beecham Clinical Laboratories**, **Laboratory Corporation of America** and **Quest Diagnostics Inc.** (formerly **Corning Clinical Laboratories**).

Because of Unilab's sizeable market share in California, any success the company has in renegotiating rates upward will definitely affect market pricing for all laboratories in the state.

Laboratory competitors acknowledge that capitation rates for many large

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contracts in the state are commonly priced under 50¢ per member per month (PMPM). A sizeable number of contracts have been bid in the 20¢-30¢ range.

For this reason, Unilab's actions are not a result of market dominance, but rather financial weakness. "During the last five years, Unilab followed a suicidal pricing strategy," stated one commercial laboratory owner who requested to remain anonymous. "They were relentless in their pursuit of market share. They were willing to acquire specimen volume at any price.

"Now the chickens have come home to roost," he continued. "Unilab no longer has enough fee-for-service revenue to subsidize this managed care testing. Medicare reimbursements are declining and MediCal (California's Medicaid program) has shifted to the HMO model, accompanied by capitated laboratory contracts. Unilab now finds itself having to provide substantial volumes of laboratory tests at capitated rates which are too low to recover costs."

Significant Losses

During the previous two years, Unilab reported significant losses. During this same time, the company's stock tumbled from $6 to under $1 per share. Unilab's eroding financial condition triggered the company's campaign to renegotiate test prices paid by their existing contracts.

The scope of Unilab's renegotiation strategy is immense. It is believed that Unilab holds more than 100 sizeable managed care contracts throughout the entire state. If Unilab aggressively negotiates from a position of "either pay higher reimbursement or we cease testing services," there could be a dramatic realignment of contract relationships between laboratories and managed care plans throughout the state.

Contrast Unilab's renegotiation strategy with that used by **Physicians Clinical Laboratories** (PCL). Early last year PCL assessed the economics of their 14 managed care contracts in Southern California.

Dropped Seven Contracts

PCL determined that the combination of reimbursement and utilization on seven contracts was unprofitable and not worth renegotiating. PCL Chief Financial Officer Rich Brooks explained the strategy, "We projected that, after terminating service on these contracts, our costs would decline by $850,000 per month. Revenue loss associated with those contracts would total $150,000 per month.

"In dropping these seven contracts, we cut our negative cash flow by $8.4 million dollars per year," he said. "Knowing what money-losers these contracts were, it surprised us that other laboratories were willing to pick up these contracts without any significant increase in reimbursement.

"We are aware of Unilab's strategy.

Two California Labs File For Bankruptcy

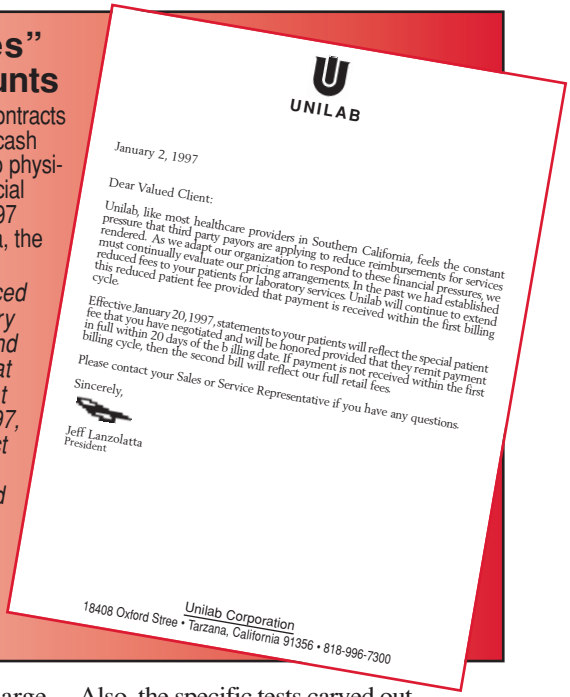
Two California laboratories filed Chapter 7 bankruptcy just one week apart. On January 31, 1997, **Diversified Laboratory Services** of Montclair filed for bankruptcy and ceased operations. The lab specialized in long term care accounts.

On February 7, 1997, **Cancer Screening Services** of Hollywood also ceased operations after filing for bankruptcy. The company was a high-volume, low-cost cytology laboratory.

Unilab "Renegotiates" Special Patient Discounts

Managed care plans are not the only contracts which Unilab is renegotiating. Unilab's cash squeeze caused them to mail a letter to physician clients changing the terms for special patient discounts. Dated January 2, 1997 and signed by President Jeff Lanzolatta, the letter informed physicians that:

In the past we had established reduced fees to your patients for laboratory services. Unilab will continue to extend this reduced patient fee provided that payment is received within the first billing cycle. Effective January 20, 1997, statements to your patients will reflect the special patient fee that you have negotiated and will be honored provided that they remit payment in full within 20 days of the billing date. If payment is not received within the first billing cycle, then the second bill will reflect our full retail fees.



UNILAB

January 2, 1997

Dear Valued Client:

Unilab, like most healthcare providers in Southern California, feels the constant pressure that third party payors are applying to reduce reimbursements for services rendered. As we adapt our organization to respond to these financial pressures, we must continually evaluate our pricing arrangements. In the past we had established reduced fees to your patients for laboratory services. Unilab will continue to extend this reduced patient fee provided that payment is received within the first billing cycle.

Effective January 20,1997, statements to your patients will reflect the special patient fee that you have negotiated and will be honored provided that they remit payment in full within 20 days of the b illing date. If payment is not received within the first billing cycle, then the second bill will reflect our full retail fees.

Please contact your Sales or Service Representative if you have any questions.

Sincerely,

Jeff Lanzolatta
President

Unilab Corporation
18408 Oxford Stree • Tarzana, California 91356 • 818-996-7300

PCL was contacted by several large managed care plans who received Unilab's renegotiation letter and wanted to explore options with other laboratories such as ours."

PCL shares the perspective of several laboratories surveyed by THE DARK REPORT. They are telling managed care companies that they will not provide laboratory services unless rates are significantly above 50¢ PMPM.

No Consensus

There is no consensus about what level of capitation rates the market needs to pay for laboratories to cover costs. Few details are known about the first contracts for which Unilab renegotiated new capitation rates. Indications are that cap rates were increased from 30% to 150% per individual contract. Most rates, however, are still under $1.00 PMPM.

At least one large contract was raised from a 50¢ level to $1.25 PMPM. Although that may seem like a significant increase, $1.25 PMPM does not allow Unilab to recover the full costs of testing. Also, the specific tests carved out of this rate would affect the financial impact of the renegotiated cap rate for that managed care contract.

"Based on my experience here at PCL, I would estimate that Unilab has a direct cost per test between $11-$12.50 which would convert to $1.25 PMPM using a 10% utilization factor," stated Brooks. "That means a capitated rate of $1.25 still does not allow Unilab to recover the total cost of performing the test."

Because $1.25 PMPM does not allow the majority of laboratories to recover the full cost of providing tests, capitation rates must increase in California if laboratories are to regain financial health. Unilab's renegotiation strategy will definitely trigger changes to the way laboratory services are priced in state because its renegotiation letter is causing many managed care plans to open pricing discussions with alternative laboratory providers. **TDR**

(For further information, contact Richard Brooks at 916-648-3500.)

Differing Views About Capitation Rate Trends

Anecdotal evidence indicates that laboratory capitation rates in California may be rising

By Robert L. Michel

CEO SUMMARY: Laboratory executives in California believe that capitated rates for laboratory services in the state may soon increase. But no one knows for sure, and no documentation about specific capitation rates for newly signed laboratory services contracts has yet to become public.

COMBINING BRAVADO AND BLUFF in one move, **Unilab Inc.'s** letter-writing blitz to managed care plans to renegotiate contract rates now sets the pot boiling in the California laboratory marketplace.

As the largest single provider of clinical laboratory services in the state, Unilab holds contracts with a large number of managed care plans. These plans range from huge HMOs and insurers to local IPAs (Independent Physicians Associations).

Apparently some of Unilab's letters were blunt: if rates cannot be renegotiated, then consider this to be 90-day notice of termination per the contract. Managed care plans reacted to Unilab's message by contacting competing laboratories to see if they could bring in a new lab at the same prices for which Unilab was contracted.

Unilab's Strategy

When managed care companies began contacting competing laboratories on a widespread basis, the laboratory industry was alerted to Unilab's rate renegotiation strategy.

Unilab's actions represent bravado because the laboratory cannot afford to lose certain key contracts. Unilab depends on high volume to support a low average cost per test. For this reason, Unilab is probably unwilling to walk away from key contracts if they fail to obtain significant rate increases from the managed care plan.

Financial Problems

The bluff in Unilab's strategy relies on the fact that individual managed care plans do not fully understand the desperate financial problems facing both Unilab and the entire clinical laboratory industry in California. Unilab hopes that discrete negotiations on an individual basis will allow them to "divide and conquer." Unilab's renegotiation strategy loses its power if the managed care plans collectively understand the financial dilemma and want to play hardball themselves.

"We are contacted regularly by managed care plans which would like us to bid on contracts for laboratory services," said Edward J. Kramer, CEO of **Pathology Associates Laboratories** in West Los Angeles. "From day one we always structured our proposals to close-

ly reflect our cost of testing. That helped us to avoid the losses that Unilab and the larger laboratories experienced.

"It would be difficult for me to comment on whether capitation rates are beginning to climb," he continued. "But I can say that managed care plans are starting to realize that fewer laboratories are willing to bid 20¢ to 30¢ PMPM (Per Member Per Month). However, so long as any laboratory continues to offer services at pricing which is below the cost to provide tests, capitation rates will not rise dramatically."

Should Unilab and other California laboratories succeed in raising capitated rates for laboratory services... it will establish an important precedent.

Kramer's opinion was echoed by Stan Schofield, who was Chief Operating Officer at **Cedars-Sinai Laboratory Services** in Los Angeles for the last three years. "I find there is a credibility gap between public statements and actions by laboratories in California. When laboratory executives talk to each other, they deny they are bidding contracts at discounted rates. However, when I call and try to obtain a written copy of a contract that shows pricing or written confirmation of the higher rates, such documents are always unavailable."

Still Intense Competition

"There is still intense competition among laboratories for managed care contracts in Southern California," continued Schofield. "Lowball capitation rates will not disappear until all laboratories refuse to provide testing at unprofitable prices."

Interviews with other laboratory executives in Southern California confirm the opinions of Kramer and Schofield. There is talk among laboratories that each refuses to bid new contracts at ridiculously low pricing, but there is virtually no public evidence that confirms contract prices for lab tests are increasing.

Referring to Unilab's renegotiation strategy, one laboratory owner spoke bluntly. "The reality is that, from the beginning. there was only one laboratory (Unilab) which drove pricing down. It wasn't **SmithKline**. It wasn't **LabCorp**. It wasn't the smaller regional labs in this state. Unilab made this market. Now they cry the blues that they cannot operate profitably unless more rational pricing returns to the marketplace."

California's unique leadership role as the most progressive managed healthcare marketplace in the United States makes the success or failure of Unilab's renegotiation strategy relevant to every laboratory. Over the last five years, Unilab attempted to gain dominant market share in California through highly discounted pricing. It now must process a high volume of specimens which are reimbursed at rates which do not recover costs.

Important Precedent

Should Unilab and other California laboratories succeed in raising capitated rates for laboratory services to economically rational levels, it will establish an important precedent. Methods used to renegotiate such increases with managed care plans can be adapted and used by laboratory executives in other parts of the country to meet the needs of managed care in their local region.

Regardless of whether Unilab succeeds with its renegotiation strategy, its actions now trigger a new competitive cycle among all laboratories in California. TDR

(For further information, contact Edward Kramer at 310-207-1111 and Stan Schofield at 207-773-7831.)

New York Labs Sue State To Overturn Surcharge

Financial consequences of new 8.18% tax on lab tests are expected to be significant

CEO SUMMARY: With the new laboratory test surcharge in place since January 1, 1997, clinical laboratories already see negative financial effects. Administration and collection of the tax is a nightmare. Some managed care companies moved swiftly to reduce reimbursement to laboratories in order to offset the financial impact of this new surcharge on their company.

CLINICAL LABORATORIES in New York took decisive action against the state's new 8.18% surcharge on laboratory tests. Suit was filed in Albany on December 30, 1996 seeking injunctive relief from the surcharge.

"A court hearing on this suit is scheduled for March 7," stated Tom Rafalsky, President of the **New York State Clinical Laboratory Association** (NYSCLA). "We seek immediate injunctive relief from this surcharge. We believe there are compelling legal grounds for such an injunction."

The dispute is about the 8.18% surcharge on laboratory tests performed by free-standing clinical laboratories. The surcharge took effect on January 1, 1997 and was discussed in detail in the December 16, 1996 issue of THE DARK REPORT. The surcharge is part of an effort to replace the state's former method of financing hospital indigent care and healthcare initiatives.

"We believe that legislation authorizing the surcharge for laboratory tests performed by free-standing clinical laboratories violates the Constitution's guarantee of equal protection under the law," stated Rafalsky. "Clinical laboratories were not part of the prior hospital financing scheme, called NYPHRM (New York Prospective Hospital Reimbursement Methodology)."

> ***"New York Legislators never realized the impact that 100,000 laboratory bills per day could have upon educating constituents about the issues involving this laboratory surcharge."***
>
> ***—Pat Lanza***

"Not only are clinical laboratories included in this new legislation," he explained, "but similar healthcare providers are excluded. This encompasses radiology, pharmacy, physician offices and the entire class of healthcare providers who see patients outside the hospital. As written, this legislation violates the equal protection clause."

Paul Rust, General Manager of **SmithKline Beecham Clinical Laboratories'** Long Island laboratory, is actively involved with NYSCLA on this

issue. He pointed out a major contradiction in the government's position. "The surcharge does not cover laboratory tests performed in a physicians' office laboratory. Yet physicians' office labs (POLs) do 50% of the clinical testing in New York state!

"Why would POLs be exempt?" Rust continued. "Because legislators did not want to stir up the hornet's nest of protest from physicians that would result if the surcharge was assessed on tests done in their offices. It is these types of contradictions which give us confidence our lawsuit will succeed."

Significant Stakes

For clinical laboratories, the stakes are significant. Pat Lanza, President of **Sunrise Medical Laboratories** in Hauppage, New York explains. "The surcharge on laboratory testing is collected by one of two ways. It is either paid by the insurance plan directly to the state or, if the patient is uninsured, the clinical laboratory is to collect the surcharge and remit it to the state.

"Since January 1, a number of insurance plans already cut reimbursement to us for laboratory tests. They want to offset their 8.18% surcharge payment. At Sunrise, we saw reimbursement reductions of 4% to 10% by individual insurance plans. These insurance plans are passing the cost of the surcharge along to clinical laboratories. This revenue loss is immense and means the difference between survival and bankruptcy for many independent laboratories."

Lanza explained the other problem for laboratories. "If the patient is self-pay, labs must collect and remit the surcharge. That alone is a costly burden. But if the patient does not pay the surcharge, New York's Department of Health takes the position that the laboratory is guarantor of the surcharge. That creates another financial burden on laboratories already struggling to keep out of bankruptcy."

"The guarantor issue represents our second reason for an injunction," added Rafalsky. "We believe the Department of Health is wrongfully interpreting the legislation by defining laboratories as guarantors of the surcharge."

The lawsuit was funded by a number of smaller clinical laboratories which are members of NYSCLA. SmithKline is the only national laboratory supporting the lawsuit. "We extended invitations to **Quest Diagnostics** and **Laboratory Corporation of America.** Both repeatedly declined to provide financial or other help," stated Rust. "Their attitude is puzzling because these two labs will directly benefit if our lawsuit prevails."

Along with the lawsuit, NYSCLA members launched a campaign of public education. "Our laboratories now print a notice about the surcharge on patient bills," said Rafalsky. "Patients learn that this is the first time the state has directly taxed the patient for a healthcare service. They are asked to contact their state senators and representatives. When passing this law, the legislature overlooked the fact that 100,000 laboratory bills are mailed daily to their constituents. The public is responding vigorously and lawmakers are listening. We understand that the Department of Health alone fields 800 to 1,000 calls per day from the public on this issue."

Other States Watching

Of concern to laboratory executives outside New York is the fact that several state governments intend to copy New York's taxing scheme if it works. Were that to occur, clinical laboratories in surrounding states may find themselves forced to deal with a similar surcharge or tax. TDR

(For further information, contact Tom Rafalsky at 212-245-3555, Paul Rust at 516-677-3800 and Pat Lanza at 516-435-1515.)

Lessons From Experience

An Industrial Engineer Looks At Laboratory Automation And Robotics

By Guest Contributor: Mark H. Smythe

EDITOR'S INTRODUCTION: Last fall, Mark Smythe's four-part DARK REPORT series about the thirteen "Perilous Parallels" common to commercial laboratory managers provoked widespread response among our clients and readers. We've invited him back to address management issues involving laboratory automation and robotics. As an industrial engineer with 35 years experience at some of America's best-run companies, Mr. Smythe's insights about the economics and usefulness of laboratory automation will surely stimulate animated discussion among laboratory executives currently considering laboratory automation and robotics.

CLINICAL LABORATORY AUTOMATION is a hot topic in the industry today. Open any lab publication and you will find prominent stories about how automation and robotics promise to transform clinical laboratories.

A careful reading of these stories reveals a very different conclusion. Laboratory automation is fraught with pitfalls and problems. It is a technology whose time has not yet come.

For unwary laboratory executives, the consequences of investing capital too soon, for the wrong reasons, or on the wrong technology, can bring about financial disaster if not bankruptcy.

I know of what I speak, because for almost four decades my career focused on improving manufacturing operations and introducing industrial automation and robots into actual production for well-known companies such as **Control Data**, **Emerson Electric**, **NCR**, **Mallory**, **Philco Ford** and others.

When I began working with clinical laboratories several years ago, I was struck by two things. First, clinical laboratories are exactly like factories. Raw materials (specimens) come in one door and finished product (test results) goes out the other door. Second, almost no lab executive sees his clinical laboratory as similar to a factory.

As a consequence, most laboratory executives fail to access invaluable sources of management wisdom and techniques that exist outside clinical laboratories. Because clinical laboratories and factories are alike, techniques used to slash costs, boost productivity and innovate in the factory can work with equal success in the laboratory.

Manufacturing Experience

Automation and robotics is one example where the experience of the manufacturing world can help clinical laboratory executives make informed decisions. The purpose of this article is to help you examine automation through the eyes of an Industrial/Manufacturing Engineer. In so doing, you may well save your laboratory millions of dollars in capital investments, wasted labor and dissatisfied physician clients.

Questions asked by industrial engineers affect two basic areas of the business. First, how will this automation enhance the efficiency and flexibility of our manufacturing process? Second, what return on investment and what increase to operating profit margins will accrue from automation?

A good engineer not only identifies what problems are expected to be solved, but anticipates the problems which will be created. He asks questions: How will the end product be improved... or diminished? Where will the new process position us regarding state of the art? Will the results produce measurable, tangible benefits? Finally, how extensive must the installation be to secure *optimum* results?

Comprehensive Planning

It is important to do this homework before making the commitment to automate your laboratory. Comprehensive planning avoids problems and unnecessary implementation expenses. Paying outside expertise to come to your laboratory and work your team through these issues before shopping for specific equipment will be money well spent.

Within the framework of the issues highlighted above, industrial engineers evaluate automation's potential to improve several specific production processes. The use of robots, for example, is typically recommended when the items being processed are too heavy to lift, too awkward to handle, too hot or too cold to touch, too delicate (40% of scrap is assignable to people losing their concentration) or in environments that are chemically, electrically or mechanically hazardous.

You may have a TQM (Total Quality Management) program of some sort where zero defects is a goal. Variability is a source of defects and errors. Robots are frequently used to reduce variability. In fact, new generations of robots have the sophistication to react to minute or gross variability in a process.

Often problems of variability are actually attributable to suppliers, not your laboratory staff. In such cases, robotics and

Efficiency, Performance More Important Than Productivity

WHEN YOU SPEAK with your laboratory automation gurus, ask them to help you assess your automation needs within the framework of these industrial engineering terms. Often, only the term "increased productivity" is used, whereas efficiency and performance may actually be more important. It is frequently better to improve the efficiency of existing resources than to increase productivity by overwhelming the situation with expensive equipment or more bodies.

Benefit/Cost Ratio: The dollar estimate of benefits or gains from the entire project divided by the dollar cost of the entire project (not just a specific piece of equipment).

Capacity: The number of units or tests that the operation is capable of handling. Example: 10,000 units per day.

Efficiency or Performance: The ratio of standard time versus actual time. Example: if it takes eight minutes, then efficiency is 75%.

Productivity: The actual rate of output. Example: 10 per hour.

Throughput or Utilization: The number of units or tests that are actually processed. Example, throughput is 6,000 units, or 60% of capacity.

Time Standard: The amount of time it theoretically takes to complete a specific act or procedure. Example: six minutes (one tenth of an hour) for a specific test.

automation would not necessarily solve those problems.

Cannot Solve Problems

Process problems of variability can also be caused by factors which automation cannot solve. For example, I had a serious variability problem at a production facility in Greencastle, Indiana. The plant manufactured solid tantalum capacitors for the electronics industry. Yields were below 50% and quality was erratic.

One obvious solution was to overwhelm the problem with additional production capacity and automated processing equipment, a very expensive option. Instead we attacked the problem using Value Analysis techniques. One process engineer recommended that we humidify the atmosphere. For minimal cost, we installed water lines with misting nozzles and yields immediately jumped to 95% with consistent quality.

This was a case where Value Analysis techniques identified a solution which required no equipment or automation. It was an extraordinarily cheap fix with huge profit impact.

Another area where automation contributes to lowering production costs is by reducing the time it takes to prepare for a production run. In the laboratory, set up and lead times for actually running tests are affected by order entry delays, missing data, illegible specimen labels, late or missed pick-ups, specimen integrity problems, poor scheduling of test runs, excessive instrument breakdowns, inadequate operator training and similar issues.

Regardless of how efficient the automated line runs in the laboratory, all these factors influence whether the specimens can actually be tested or not. Most of these factors cannot be solved by laboratory automation or robotics.

"Six-Tenths Rule"

Next comes what engineers call "The Six-Tenths Rule." A machine with twice the capacity has six-tenths of the unit cost per output. Productivity and cost are disproportionate. Even though the machine doubles productivity, the cost of production does not fall by half.

The reason that productivity and reduced costs do not change proportionally is because processing costs associated with the new equipment offset savings by a significant factor. Increased costs include equipment ser-

vice contracts, regular maintenance costs, retraining and site modifications. Walls may need to be moved and changes made to electrical wiring, floor tapes, hangers and tables. These costs are a direct consequence of bringing in the more productive equipment.

Volume Drives Automation

Industrial engineers look carefully at the volume going through a factory. High volume is essential if automation is to pay for itself. Most automation requires high volume to justify the capital expenditure and related implementation costs for automation equipment.

Manufacturing plants have two and three shifts running six and seven days a week. Continuous volume makes it feasible to amortize expensive automation technology.

However, laboratories do not operate work shifts like factories. Laboratories typically run only one shift at maximum capacity. Laboratories don't work weekends. It is difficult for laboratories to create the continuous flow of high volume necessary to recoup the expense of the equipment.

Unit value of the product also drives automation. Factories making automobiles create production volume that generates sizeable dollar value, ranging in the millions of dollars per hour. With plants running 18-24 hours per day, seven days per week, potential savings from automation are huge.

Unit value again places laboratories at a disadvantage to factories when seeking to automate. The average unit cost of a laboratory test is typically $10-15 at a large commercial laboratory site. Compared to saving 10% on a $20,000 automobile, saving 10% on a $15 test makes it difficult for a laboratory to recoup the costs of automation.

Further, a laboratory site generating $50 million in annual net revenues is only doing 2-4 million billable tests per year. Unlike widget manufacturers who stamp out tens of millions of five-cent items, the relatively small annual throughput of product from a clinical laboratory reduces the opportunity to recover the cost of automation.

Another issue in automation is how it best serves the needs of your customers and clients. There should be a direct correlation between those needs and the proposed automation. Automation of both factories and laboratories can affect customers and clients in negative ways. Frequently these consequences are learned only after the automation is installed.

Laboratories do not operate work shifts like factories. Laboratories typically run only one shift at maximum capacity. Laboratories don't work weekends.

Automated storage, long distance conveyors and similar automation enhancements add cost to the product but generally do not add value to the customer. Most laboratory executives would find it interesting to know that the greatest uses of robots throughout the world are in painting and welding (processes not used in a clinical laboratory).

Within the factory world, a key reason to automate involves solving two serious people issues. First is to reduce the ongoing labor required to produce goods and services, particularly where wages are high. Second is to eliminate or replace labor in situations where unions are militant and labor relations are uneasy. The automobile industry proves to be a great example on both points concerning labor issues.

In a manufacturing plant, a major cost is production labor. That is not

necessarily true in a clinical laboratory. The ratio of medical technologists ("production workers") to total laboratory staff is generally low compared to manufacturing plants.

A further difference with clinical laboratories compared to factories is that medical technologists tend to be more cooperative employees than factory workers. Issues of labor unrest and poor attitudes do not have the financial impact in laboratories that they do in factories.

Potential Gains

Because of these facts, laboratories do not have the same potential gains from reducing high-priced labor hours and eliminating the management problems of dealing with unions or a labor pool that is uncooperative. Automation in the laboratory setting does not provide management with the same benefits in dealing with labor that it does in a manufacturing plant.

Up to this point, the examples I provided deal with the mechanical impact of automation to the workflow process. Laboratories and factories are alike in how they gather raw materials and process them into finished products. For that reason, automation interacts with workflows in clinical laboratories in the same way that it does in a factory.

However, once engineers evaluate the mechanical application of automation to the workflow process, they must also evaluate the financial impact of the proposed automation project. It is beyond the scope of this article to discuss how the financial analysis should be done, but I do want to highlight several key points.

First, whatever automation equipment is chosen for a laboratory, the manufacturer should specify an expected return on investment (ROI). Calculations to arrive at this number should be clearly understood. Both the laboratory buyer and the vendor should be prepared to work together to achieve that ROI.

As the project is implemented, there should be clear measures to monitor and evaluate efficiency, productivity and financial performance. All too often I find that laboratory administrators do not collect and report accurate data to guide their management decisions. Yet it is precisely this information which their hospital CEO and CFO use to evaluate capital requests and authorize major expenditures.

Like most DARK REPORT readers, I eagerly scan the clinical laboratory press for financial documentation as to how laboratory automation has reduced costs, improved productivity and delivered a market return on investment to those few laboratories which have pioneered the installation of such technology.

Such documentation has not been forthcoming. Consequently, it would be a reasonable conclusion that neither the automation vendor nor the laboratory customer is totally satisfied with the performance of their laboratory automation installations to date.

Quest Automates Labs

Only two years ago, **Quest Diagnostics Inc.** (formerly **Corning Clinical Laboratories**) announced that they planned to introduce automation into their St. Louis, Denver and Detroit laboratories. After automating St. Louis and Denver, Quest has yet to automate Detroit. That can be interpreted to mean that, based on the financial return of the first two automation projects, Quest determined that economic performance of the current generation of automation did not justify installation in the Detroit laboratory.

Several knowledgeable observers told me that **Mayo Medical Laboratories** flirted with an automation vendor and apparently went so far as to sign a contract and begin design work. But at some point they got cold feet and stopped the project. That could be another sign that the economics of

laboratory automation are still marginal, at best.

However, should the Mayo story be true, then the management team at Mayo should be complimented. They had the courage to pull the plug on something that looked uncertain and wait until there was more documentation as to the cost-effectiveness of laboratory automation.

SmithKline Beecham Clinical Laboratories' automation project at their Norristown, Pennsylvania facility was launched several years ago. Insiders say it has proven to be prohibitively expensive. SmithKline has yet to publish data on either the productivity performance or financial return generated by the automation.

The lack of published documentation and the anecdotal stories mentioned here indicate that laboratory automation is still in its infancy. Were I to wear my industrial engineer's hat and give advice to a laboratory administrator looking at automation, I would bring out two points.

First, even with projected ROI payout over five years, rapid changes to both the technology of automated laboratory equipment and to the tests themselves may render today's generation of laboratory automation systems obsolete within five years. Include those scenarios in your planning process.

Engineers Trick

Second, I would use an old engineer's trick. I like to calculate my savings per day and see whether such an automation investment really puts me ahead or not.

To do this, take the annual net projected savings that the automation project is supposed to deliver and divide that by 240, which is the number of working days in the year. The resulting number is the savings per day to be expected from automation.

I compare this to two numbers. The first comparison is against the daily cost of a full-time medical technologist. The second is to calculate my billable tests per day, divide it into projected savings per day and see how much money per test I would be saving.

Comparing your savings per day from automation against both the med tech cost per day and savings per lab

Smythe Considers Laboratory Overcapacity And Flexibility

Mark Smythe

There is another difference in the automation potential of laboratories versus factories which I personally find interesting. It involves overcapacity and process flexibility.

Automation tends to increase the capacity of a factory. Automation also tends to limit production flexibility because it is designed for specific applications and cannot be converted to other uses.

Most clinical laboratories have excess capacity today. They must either fill that excess capacity with specimens or take it off line if they are to reduce costs in tandem with falling reimbursements. Automation increases capacity and thus works against the market trends for laboratory testing.

Automation's inflexibility makes it more difficult for a laboratory to react to unpredictable specimen flows. In several laboratories I charted the number of incoming specimens by department and by test on a daily basis. On certain days hematology would be inundated and serology might be virtually idle. A day later, serology would be overloaded and immunology and special chemistry would hardly have enough specimens to keep med techs busy.

Although the daily flow of specimens coming into the lab was reasonably constant, there was relative inconsistency in the daily number of specimens going to each department. Automation would reduce the laboratory's flexibility to respond to those variable specimen flows.

test will probably surprise you. Assuming that your laboratory already has overcapacity, daily savings may be minimal when viewed against the huge capital cost of the automated equipment. The cost to access that overcapacity may simply be a few extra medical technologists on staff, not $2-4 million worth of automated equipment.

Newer Instruments

Further, as an engineer, situations such as this would cause me to consider acquiring newer instruments which have multiple test capability as well as random access, then reconfigure the workflow through the laboratory to maximize existing production assets and staffing. This approach applies the engineering concepts of efficiency and performance, not productivity.

Third, *before* considering automation, I would apply industrial techniques known as Value Analysis and Deliberate Methods Change to the laboratory's workflow and design. Most laboratory administrators are unfamiliar with how these proven techniques work. That is unfortunate, because these are powerful tools that can help them slash costs by 15% to 40% while improving quality and maintaining employment stability of the staff.

Although the subject of laboratory automation now gets wide exposure in the clinical laboratory industry, there is an abundance of misinformation and misunderstanding about how it works, what it does and how to use it effectively.

The goal of this article is to provide you with a new perspective on the topic of industrial automation and robotics. With a better understanding about the engineering and financial principles underlying laboratory automation, you can make better decisions.

My experience through almost four decades of work in factories and laboratories teaches me that careful decision making is the best way to save money and create a high-performance laboratory organization.

I believe in the benefits of automation. But I have seen too frequently that an ill-considered automation project spells disaster. General Motors' decision to spend $40 billion to automate its manufacturing plants during the 1980s proved to be one of the most expensive mistakes made by an executive team in corporate history.

Until clinical laboratories with installed automation publish unequivocal data as to the financial effectiveness of laboratory automation, I would judge the current range of products as unproven in commercial use.

Changes To Technology

I do believe that technological developments will help make automation cost-effective. At the same time, I wonder how changes in the technology of medical testing may eliminate the economic justification for huge, centralized laboratories that suck in specimens from vast regions. Should "lab on a microchip" and similar technologies succeed, then large centralized laboratories may well disappear in favor of localized clusters of small laboratory sites.

With laboratory automation costing upwards of $2-4 million dollars, making a bet on today's technology would make me uncomfortable as a laboratory administrator. That is especially true when so many accepted industrial techniques for process improvement, cost reduction and profit enhancement exist, but are unknown or unused by most laboratory administrators.

Having introduced you to the methods used by industrial engineers to look at automation, I would be extremely interested to hear from those readers who are developing automation plans for their laboratories. **TDR**

(For further information, contact Mark Smythe at 503-694-2473.)

Second War College Set For New Orleans In May

Eight case studies of laboratory consolidation, regional lab networks reveal successes, setbacks

CEO SUMMARY: Laboratory consolidation and networking activity continues to intensify. This year's War College faculty features exceptional stories about what works and what doesn't. New Orleans is the place to be on May 20-21 for proactive laboratory administrators and pathologists seeking to give their organization a competitive advantage.

WHEN THE SECOND *EXECUTIVE WAR COLLEGE* convenes at the Royal Sonesta Hotel in New Orleans on May 20, it promises to be the laboratory management event of 1997.

"These are exciting case studies," stated Robert Michel, Editor In Chief of THE DARK REPORT. "The laboratory group for **Kaiser-Northern California** is a consolidated lab with regionalized services. It serves an HMO which is consistently ranked as one of the best in the country for quality and patient satisfaction. Expect to hear about innovative initiatives and learn what the consolidated lab of the future looks like today.

"Contrasting Kaiser is **Calgary Laboratory Services** (CLS)," Michel continued. "I predicted in earlier issues of THE DARK REPORT that the future of laboratory services will be a hybrid regional lab system, joining consolidated lab clusters into a regional provider network. *(See TDR, June 10, 1996.)* If that is the future, then CLS is already there. CLS represents five commercial labs and eight hospital labs which were forced to consolidate into one service company when the province of Alberta slashed global laboratory budgets by 40% in only two years! *(See TDR, January 6, 1997.)*

"But innovation doesn't end there," he added. "**Joint Venture Hospital Laboratories** (JVHL) of Detroit is probably the oldest operating regional laboratory network. Founded in 1992, it is owned by seven hospital systems, representing more than 23 individual hospital laboratories. JVHL's managed care contracts serve more than 400,000 lives, which may be the largest number served by any lab network in the United States today.

"For those who want to learn how brutal managed care and marketplace trends can be, Lou Durigon of the now-defunct Pittsburgh **Reference Laboratory Alliance** (RLA) will be on hand to present a post-mortem on what happened to RLA. From the West Coast, Nate Headley, former CEO of **Physicians Clinical Laboratories** (PCL) in Sacramento will share details about what California's managed care marketplace is doing to clinical labora-

tories. Most people are unaware that PCL developed a core laboratory in Sacramento that consolidates testing from eight hospitals in the city.

"Pathologists will find the story of South Carolina's **Pathology Services Associates** to be fascinating," explained Michel. "This is the first statewide pathology network actually servicing managed care contracts. Kansas City's **Regional Laboratory Alliance** is a network of five hospitals and one commercial laboratory that has quietly implemented one service enhancement after another for its physician clients.

"We are very pleased that **Columbia/HCA-Laboratory Corporation of America's** Louisville joint venture will present its story," noted Michel. "This laboratory consolidation involved three Columbia hospital laboratories which were integrated with LabCorps's Louisville facility. As national commercial laboratories press hospital laboratories for joint ventures and outsourcing arrangements, this is a unique opportunity to learn how successful, both operationally and functionally, such arrangements can be."

A few of the supporting presentations include Paul Liebenluft of the **Federal Trade Commission** on antitrust issues of laboratory networks, Bob Hamon of **Presbyterian Laboratory Services** on the issues of building and operating off-site core laboratories, Cheryl Kutchinsky of **Anthem-Blue Cross/Blue Shield** on managed care contracting for lab services and Phil Wisler of **Coopers & Lybrand** on creating asset value and profits from lab networks and consolidations.

"Last year's *Executive War College* attracted 250 proactive and innovative laboratory executives who turned it into a high-energy summit meeting," concluded Michel. "Early interest tells us that this year's program will probably exceed that in both the number of attendees and the quality of information that is exchanged." **TDR**

(For further information, contact Robert Michel at 503-699-0616.)

INTELLIGENCE

LATE & LATENT

Items too late to print, too early to report

Meris Laboratories of San Jose, California settled government claims of Medicare and MediCal fraud with an agreement to pay $5.2 million. The announcement, on February 12, closes another whistleblower suit.

MORE ON: Meris Labs...
Besides the cholesterol and serum iron tests which are commonly involved in these settlements, Meris was also nailed for billing hemogram indices. Tests involved in the fraud allegations were billed from 1992 through this year, indicating that federal investigators continue to interpret billing guidelines in new ways.

With wholesale prices for acute care hospitals unchanged in December, the **Department of Labor's** Producer Price Index gained only 1.4% in 1996. This is a dramatic drop from 1995's gain of 3.7% in hospital prices. The index confirms that managed healthcare is constraining the year-to-year increase in hospital prices.

Word is that the first budget proposal from the Clinton White House did not include cuts in laboratory reimbursement for Medicare. This is the first time in a number of years where the lab industry doesn't start the budget process facing proposed reimbursement cuts.

LAB*ONE* CONTINUES TO GROW

Lenexa, Kansas-based **Lab*One*, Inc.** continues to show growth in both revenues and profits. Net earnings for fourth quarter climbed from $400,000 to $1.0 million over the same quarter last year. The LabCard program now exceeds 1 million lives and Lab*One*'s recent acquisition of **Gib Laboratories** and Prudential's life insurance testing business gives them a revenue boost going into 1997.

CYTYC SITE

People touring **Health Network Laboratories** in Allentown, Pennsylvania will see two **Cytyc** ThinPrep® Pap Smear processors sitting side-by-side in the cytology department. Clinicians in the **Lehigh Valley Hospital Healthcare System** (Health Network's parent) decided that the improved quality of Pap smears prepared with ThinPrep justified the additional cost. It is an interesting example of how one integrated healthcare system chooses to balance the cost of testing procedures against improved outcomes.

That's all the insider intelligence for this report. Look for the next briefing on Monday, March 10, 1997

THE DARK REPORT

UPCOMING...

- *Top Ten LIS Companies For 1996 In New Sales And Total Installations.*
- *Going International: American Laboratories Develop Overseas Operations.*
- *Mark Smythe Looks At Current Performance Of Laboratory Automation.*
- *Ameripath's Competitors: Emerging Pathology Companies With National Reach.*