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Non-Patient Laboratory Outreach Testing Feasibility Study For A Community Hospital Laboratory

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Non-Patient Laboratory Outreach Testing

Feasibility Study for a Community Hospital Laboratory

by

Krista S. Montano

A Master's Thesis Presented in Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Health Service Administration

Regis University

December, 2010

FINAL APPROVAL OF MASTER'S PROJECT

HSA696 MASTER'S THESIS

I have **READ AND ACCEPTED**

The Master's Thesis by:

Krista Montano

Non-Patient Laboratory Outreach Testing
Feasibility Study for a Community Hospital Laboratory

Submitted in partial fulfillment of
requirements for the
Master of Science in Health Services Administration
degree at
Regis University

Primary Research Advisor: Tristen Amador

Date: December 1, 2010

Abstract

An assessment of the feasibility was conducted for developing, and implementing a new service that would accept non-patient specimens for testing in a community hospital laboratory. The service would improve the delivery of healthcare services for patient, physician, and community through the recommendations. Costs persistently rise and shortages amongst physicians and other patient care personnel are climbing. Supporting our community and system physicians by offering high quality laboratory testing in a timely manner with consultative services offered by pathology reinforces a community hospital's commitment to improving the physician experience. Diagnostic laboratory testing is a critical piece in treating patients, and the option to send specimen testing to the hospital laboratory has been a requested service from physicians whose offices are located in close proximity. Studying the feasibility of adding an additional service line for specimen only outreach testing including an electronic order entry option, overcoming the managed care contract barrier and staffing considerations would be beneficial to patients, caregivers and the community hospital. The potential exists to reduce costs, improve quality and strengthen physician engagement by implementing one of the recommendations. Providing quality laboratory results to the clinics within the system and community physicians surrounding is an opportunity for clinical laboratories to positively impact the utilization management of diagnostic testing in collaboration with managed care organizations to deliver healthcare more efficiently. Recommendations for the community hospital include offering the service to system owned physician clinics with the phased implementation of the electronic

medical record. To service non-system owned clinics near the facility web based software is an alternative.

Acknowledgments

I wish to thank my husband Ray, and children, Ambrose and Elle for their love, support, enthusiasm, evenings of homework and PowerPoint demonstrations together at the kitchen table, and patience these last several years.

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Chapter 1. Introduction

Introduction to the Problem

Healthcare and the provision of healthcare offered in the communities supported by hospitals is a continually evolving service. Costs persistently rise and shortages amongst physicians and other patient care personnel are climbing. Supporting our community physicians by offering high quality laboratory testing in a timely manner with consultative services offered by pathology reinforces a community hospital's commitment to improving the physician experience. Diagnostic laboratory testing is a critical piece in treating patients, and the option to send specimen testing to the hospital laboratory has been a requested service from physicians whose offices are located on campus. Studying the feasibility of adding an additional service line for specimen only outreach testing would be beneficial to patients, caregivers and the community hospital. Providing quality laboratory results to the clinics within the system and the surrounding community physicians is an opportunity clinical laboratories should investigate.

Services provided by the laboratory provide 60 to 70% of the information needed by physicians to make critical decisions on admission, discharge and regarding medication (Forsman, 1996). It is unrealistic to treat a patient efficiently or effectively without the diagnostic information provided by the analysis of patient specimens. Treatment decisions can be deduced sooner and with more input to the full clinical picture when laboratory results are available in a relatively short amount of time. Providing physician offices with the amount of time, in minutes, that they can expect to see a result will be included in the service provided.

Growth in the north Denver area and the proximity of twenty eight system owned clinics make laboratory outreach, also referred to as inreach, a possibility. The potential exists to further

expand to other future physician offices, evolving to fully implemented outreach. Hospital administration sees that laboratory faces greater challenges to remain profitable with declining reimbursement. On average, a hospital will collect 50% of what is billed (Dilts, 2005). Utilizing the excess capacity that exists in the laboratory can lead to reducing cost per test. Expanding laboratory services to local physician offices consequently increases volume, generates revenue, and drives down fixed costs.

The Laboratory Outreach Survey released in 2007 included 150 respondents indicating that 79.3% operated a laboratory outreach program with average revenue of approximately $8 million (Chi Solutions, 2007). Our market is considered a high-growth region and has potential to generate significant additional revenue through physician office specimen testing. Outreach programs have provided a means for other health systems to overcome economic challenges (Catarella, 1994).

Laboratories maintain a certain level of staffing to provide a menu of tests that are not ordered on a regular basis. The laboratory operates to serve the physicians and subsequent inpatient population of the facility. There remains a level of capacity for testing that is excess, and an advantage over commercial laboratories since the inpatient population bears the majority of fixed costs. That excess may be utilized by projected hospital growth over time but can also be consumed by taking on the addition of non hospital patient testing in the form of inreach and outreach business. The community hospital laboratory in this feasibility study has the has the capacity to absorb the initial increase in workload without the addition of staff or equipment while providing an extensive test menu that is competitive with other laboratories by roughly 50,000 units of service annually. This number was derived by taking the number of laboratory

hours worked divided by units of service to calculate overall capacity capability for a time period of one month.

Statement of the Problem

The healthcare system has an opportunity to provide quality laboratory results to the physician network clinics within the system and community physician offices surrounding the geographical vicinity. Currently, the commercial laboratories capture the majority of testing from this particular service provider population.

Purpose of the Study

The purpose of the study is to look at the growth in the immediate region of the hospital to access the feasibility of soliciting physicians in the area to send testing to the hospital laboratory as opposed to the commercial laboratories in the area that currently have a significant share of the market. The two major commercial laboratory competitors are Quest Diagnostics and LabCorp of America. For the purpose of this feasibility study, specimens are defined as blood, non blood fluids and/-or tissue. Outreach is defined as patient testing on specimen only samples received from non hospital patients. Inreach is testing the specimens from the system owned clinics, diverting testing from the national competitors. The success and feasibility of a project such as this depends on a number of sectors of the healthcare system such as managed care, information technology and culture coming together to produce the final product.

Managed Care

Managed care contracts pose a barrier to being able to provide testing for some patients that are seen through physician offices. Managed care providers such as Cigna, United Healthcare and Anthem Blue Cross Blue Shield have in recent years began to shift from high risk

fee for service to low risk capitation models. Capitation is the reimbursement paid per member per month transferring risk of the cost to care for an individual to the provider. Capitation in contracting is a model seen more in recent years (Kongstvedt, 2009).

The managed care company anticipates that structure will be an incentive to the provider to treat and diagnose patients more efficiently. Due to this shift in reimbursement, many physician offices currently utilize commercial laboratories that have preferred contracts with many of the large payers to manage costs. Hospital systems are not large enough to negotiate with managed care companies, bid on contracts and compete with the large national commercial laboratories. Frontline Network, established in 1995 by a group of northern Colorado laboratory directors, consists of regional hospital laboratories. The network serves to negotiate service contracts with these payers to compete for specimen testing with Quest and Labcorp. The Frontline Network is an example of a messenger model. The messenger model represents service for cost and account management as well as a negotiator for managed care contracting (Steiner, Root, & Michel, 1995). The formation of regional networks of hospital laboratories changes the competitive arena and hospital laboratories are now able to offer similar pricing and services as the national laboratories to gain access to specimen testing (Park, 2004). A successful agreement between the members of Frontline Network and the managed care company allows the physician offices to submit patient samples to the hospital laboratories that are network members. Under the billing guidelines the patient would not incur any additional expense if the testing was done at the local community hospital as opposed to a commercial laboratory for testing. Sending the specimens to the hospital for testing will keep the testing

within the community as opposed to transporting the specimen to a commercial laboratory outside of the patient's community for testing.

In the future, the healthcare system and associated clinics could leverage convenient access and capacity when negotiating with managed care payers/health plans by offering an integrated approach to the outpatient and inpatient continuum of care. That system could deliver care that leads to less utilization of resources and a decrease in duplicated tests. Efficiency through information integration would lower the cost of providing healthcare services per member. The management of a patient's wellness will gain greater emphasis as the reimbursement continues to move from fee-for-service to per member per month. Laboratories can play a very influential role in eliminating duplicate and redundant testing ultimately saving healthcare dollars (Steiner, Root, & Michel, 1995). National laboratories do not contribute to a reduction of healthcare costs through assisting in the management of a patient's health since the results are not integrated and captured within one record that contains emergency room, inpatient and clinic visits.

Information Handling

Integration of the laboratory information with the physician's office is a consideration to be addressed. Information technology (IT) is advancing in the direction of electronic medical records and is becoming customary for physician office staff to order and receive results electronically (Friedman, 1998). National laboratory competitors offer an electronic solution and presently are working to integrate with physician office electronic medical records (Bauer, Bozard, 2009). Most hospital enterprises today recognize that lab operations are an integral component of the services they offer to the physician community (Park, 2004). Physician offices are currently utilizing electronic order entry for submitting test requests to the commercial

laboratory competitors. In order to offer this same level of service, the community hospital must have a comparable IT solution for connectivity and communication.

A potential option is a web-based solution called MD Bridge that would allow online order entry and resulting. Web-based solutions can offer a variety of benefits when considering result delivery when compared to the once common paper method delivery system of results. A third party solution also minimizes the IT resources that would be required (Bauer, Bozard, 2009). MD Bridge software, developed by Atlas Medical, is one possible solution. It also includes Advanced Beneficiary Notice checking, which is required for Medicare patients, and fields to capture complete patient demographic information. An electronic solution reduces user errors by providing advanced data validation, required fields, and increased reimbursement rates through medical necessity checking (Park, 2004).

For the clinics owned by the Healthcare system, the electronic solution would be a modified version of an Epic electronic medical record (EMR) platform. The Epic EMR is expected to be implemented in phases in late 2010 thru 2011. With the roll out of the health system's EMR, the physician offices would link all outpatient clinic visits including the diagnostic information to any visits the patient may have as an inpatient in any of the three health system hospitals. All laboratory testing done on a patient would be accessible via the EMR and provide a complete clinical history on the patient. This functionality will lead to improved physician decision-making and is a service physician place great value on (Bauer, Bozard, 2009). Data and information systems of the laboratory must be interactive with both the wellness management and acute care needs of the integrated health care delivery system it serves. Compatible databases will be required (Steiner, Root, & Michel 1995).

Billing is an area of outreach testing that will require additional connectivity whether with the hospital billing mechanism or a third party billing agency depending on volume of non-hospital specimens introduced through outreach. Historically, laboratory testing is perceived by the billing office as insignificant because the minimal dollar amount of the claims when compared to the large claims of hospital inpatients the billing office typically processes. Thirty dollars is not uncommon for a billed laboratory test and may be perceived as menial or too 'low dollar' to be worth the burden of billing office resources. Segregating the revenue from non-hospital work and the inpatient and outpatients is an additional challenge for the billing office staff. It can be difficult to see the true value of inreach and outreach when the hospital is handling the billing. A worthwhile investigation into a third party billing agency that specializes in laboratory billing should be considered. The caveat to this is the issue of Medicare specimen testing. Medicare defines patient and non patient as a status. When the hospital does the billing for the non patient specimen it may become difficult to discern from inpatient testing and the burden to the billing office may be too great (Workman, 2000).

Cost Assessment

Sources of revenue and costs for hospital laboratories are generated by the inpatient population from Medicare/Medicaid, third party payors and private payors. Outpatient revenues are generated from physician offices, nursing homes and hospitals in close proximity referring testing. The basic financial equation is Revenue-Costs=Net gain [loss] (Nignon, 1993). Initial estimates from the pro forma indicate minimal capital investment with a positive return on investment in the first year. Since this is an estimate, a market analysis of the potential physician patrons would be required. It is important to be able to show the value of outreach in dollars.

Customer Service/Internal Infrastructure

The competition is polished when it comes to offering good customer service. A sales representative for every 500,000 population is recommended and one service representative for every 500 customers (Fantus, 1999). 500 customers would be beyond the scope of this project but it brings to the level of customer service we would want to offer a client to meet their expectations. For instance, providing phlebotomy staff for the larger practices generating a certain volume of testing as does Quest, the competitor, would be a consideration. Customers calling in for assistance typically should not be placed on hold greater than 20 seconds and the inquiry service must be offered during the hours of operation for the offices the laboratory services (Fantus, 1999). Gaining the support of the existing staff is important when developing a program with tremendous emphasis on customer dependent services (Nignon, 1999).

Customer service would also include calling clients regarding 'exceptions'. Exceptions are problems with submitted specimens or information that need to be resolved in a short amount of time. Incomplete information or integrity issues related to the specimen will delay testing or possibly require testing be cancelled if resolution does not occur in a timely manner. Problems that require resolution could include pre-analytic handling requirements that would necessitate recollection of a specimen.

Consultation from the hospital pathologist for the clients served is another aspect of customer service that would be offered to physician offices. There may be opportunity for educational opportunities provided to the physician offices on certain disease pathologies or new test methodologies emerging in the marketplace that would also be delivered by the hospital

medical staff or appropriate laboratory personnel as part of competing on the same service level as the national laboratories.

Courier service is another consideration when examining the internal infrastructure. Pick up schedules as well as STAT requests must be thought out beforehand with the laboratories ability to respond to such requests. Delayed specimen pick up could result in lengthy turnaround times for results and an unsatisfied physician. The hospital operates with a courier system in place for routine stops to the current health system owned clinics. A provision must be laid out for the requests for specimen pickups outside of the routine stops to service the client as the competition does.

Developing an inreach/outreach program for a community hospital may be a prosperous avenue to pursue. We must first determine whether the resources available will meet the needs of potential customers. Clear expectations of what the program will involve must be identified and clarified to ensure a positive outcome for all parties involved as well as benefits to the end user, the patient.

Assumptions and Limitations

Limitations of developing a successful outreach program would be the technology resources. Culture within the laboratory and customer service requirements of new outreach clients are potential limitations to successful implementation. Space and internal infrastructure may not be suitable. Current industry competitors offer the convenience of a patient service center. Physician clients may put a heavy emphasis on a program feature such as patient service centers that will need to be considered in the recommendations of the study. Any outreach

program that is developed must be able to compete on levels such as price, quality and service

followed closely by information integration electronically (Bissell, 2005).

Chapter 2. Method

Healthcare reform is a common topic of discussion and the transformation of how

healthcare is evolving can be witnessed daily. For healthcare organizations to survive and thrive

in the economic environment and also meet the requirements patients are placing on quality of

care there is a need for constant evaluation.   This can bring about organizational changes to meet

the demands of healthcare reality. Hospital administrators must be able to evaluate business

proposals quickly with accuracy and efficiency to keep healthcare organizations viable and

uphold mission statements to serve the patients of their communities. A feasibility study of such

business proposals, whether it involves acquiring a new piece of equipment or bringing on board

a new service or physical expansion of the campus is one such way to accomplish making an

educated decision, based in statistical analysis. Administrators must possess the skills to not only

interpret the information presented in a feasibility study but to conduct a feasibility study

themselves. Feasibility studies use verifiable information and apply statistical measures to

ensure complete and accurate analysis (Hass, 2008).

A feasibility study is an analysis of a new product or new service program consisting of

several components of information. The purpose of conducting a feasibility study can include

determining the solution to a business problem, or exploring a business opportunity. It is a

formal document that explains the business idea, listing goals and explaining how the goals will

be achieved. The components of a feasibility study include an introduction, an outline of the

problem or opportunity statement, a list of the goals and objectives, an executive summary and a

list of the contributing members of the team. The strategic content of a feasibility study

describes the business environment, outlines the marketing plan including a strength, weakness,

opportunity, and threat analysis table, demographic data, an assessment of the operations, and provides financial data. The final segment of a feasibility study includes the solutions. These solutions include what the writer proposes as well as alternate solutions and risks of not implementing the proposal (Case Study: Business Planning for a New Outreach Program, 2007).

Introduction

 Problem/Opportunity

Introducing the business opportunity is done in this section. This will give the reader (s) or stakeholders the background information necessary to understand the study and why the interest exists for the proposed project. This is an opportunity to explain the reason as to why the information is being presented, the burning platform or "million dollar" idea. The problem or opportunity statement is clearly presented in the introduction. The goals and objectives of the project give the reader a better understanding of the work to be done (Hass, 2008).

 Project Goals and Objectives

The Clinical Laboratory Management Association (CLMA) Business Planning Guide recommends an introductory letter as well as a cover page is included in the final presentation of information. An introductory letter allows the submitter to provide why you are submitting the plan along with the important information for the reviewer; this may also be the only appropriate place to include pictures of the product. The cover page includes information on the individual who is presenting the feasibility study. The name of the individual along with all contact information such as phone numbers, fax numbers, company name and email addresses should be provided. Also included in the introduction is an easy to follow table of contents as well as an Executive Summary.

Executive Summary

The Executive Summary should be prepared last, and is often the most important piece of the feasibility study. After the study is complete the most important information can be extracted and presented clearly in the summary. The Executive Summary may be the only portion of the feasibility study that the investors or stakeholders may read.

Consultants

To put together a comprehensive feasibility study it is crucial to have subject matter experts available for consult. Identifying this group early on and getting them to contribute to the information verification for the project will add validity to the outcome. It is difficult to know all aspects of a proposed new line of business so experts in the related areas are necessary. The variety of skills brought to the project by the experts will be evident in the success of the implemented product or service line. Included in the feasibility study is a list of all of these individuals and what their credentials are (Hass, 2008). Representation from Human Resources and Finance are important and should be included from the beginning of the process for consultation. CLMA Guide to Business Planning recommends including the resume of each member of the team. The resume will demonstrate the unique skills of the individuals contributing and how those persons will add to the team's success. In addition to the subject matter experts that contribute, there can also be advisors to supply additional expertise. Advisors may be individuals that are not part of the company but can offer expertise for free. For instance, it may be necessary to consult professionals such as lawyers or engineers.

Strategic Content

    Business Environment

The trends taking place in the current industry in which the service or product will compete are important criteria to identify in the feasibility report. Specifics of the industry include background information and if there are multiple sectors of an industry then that information should be introduced too. Marketing departments can be helpful places to pull this information from as well. It is important to understand where in the competitive market place your service or product will position itself and how that product will stand out as special from what is already available. There must be an incentive for consumers to change from what they currently use to a new product. Demographic data should include the size of the area being considered. What is the competition in the area and how will the product or services being proposed capture some of the business? If the service depends on a third party for reimbursement then the content of the payer mix needs to be a focus. Finally, future growth in a particular area is an all important piece of information to include when evaluating the business environment.

    Marketing Plan

It should also be determined what will be done to get consumers to buy or utilize the product or service the study is proposing. How sales will grow into the future is part of the marketing plan. This is referred to as the 4 P's - product, price, plan and promotions. The strategy for marketing the product or service is important to understand because it may be necessary to include in the financial pro forma when taking costs into consideration. The pricing of the item must be carefully considered as well (Hass, 2008). Demographic data as well as the

target market is included in the marketing plan's financial pro forma to determine if the solution is valuable to the business.

Operations

An internal infrastructure assessment may be necessary to determine whether the existing operational structure can support the proposed production of a new product or the addition of a new service or product. In the case of a new service line several factors must be considered. The question to be asked and answered is, "what will it take to provide your product to your customer?" Outlining a complete workflow to visually capture the service line will identify the steps necessary to make changes. Employee culture impacts the success of additional work.

Finance

Financial information is typically the most important item to the interested stakeholders. It will also serve as a means to measure the financial projections against actual financial information if the feasibility study is implemented. Several financial statements should be included in the proposal. An income statement, cash flow statement, and a balance sheet will give an indication as to the viability of the new business. All expenses should be included in the financial projections. Expense will include onetime expenses required to start the business as well as operating expenses that may be monthly or in some other incremental time frame. A five year forecast will give a comprehensive snapshot of the information investors would be interested in. Contribution margin can be calculated as well as a breakeven point (Case Study: Business Planning for a New Outreach Program, 2007). Working with a financial analyst is wise. Are you really planning to do this? Validated financial information is important to convey

to the stakeholders. The opportunity cost of not doing the project should be considered and presented.

Solutions

Recommendations

This is the piece of the proposal where your opinion and passion for the project will become evident. If the study is not executed in its entirety alternate solutions will prove valuable for providing additional options for the decision makers when considering the product or service line being investigated for implementation.

Risks and Conclusions

A significant amount of time can be spent preparing a feasibility study. As the owner of that process it can be very difficult to identify risks that can threaten the business. Some risks may be minimized by planning and anticipating for those vulnerabilities. Other risks may be so great that the benefit of the new line of business may not be worth moving forward with the project. Reviewing the risks and presenting them thoroughly will show the stakeholders or the senior administrative leaders that the information is honest and transparent. You certainly do not want to feel responsible for a capital request that on paper appears profitable but due to lack of risk acknowledgement the wrong decision is made. Strength, weakness, opportunity, threat (SWOT) analysis should be referenced or included.

Outcome Measures

Project Estimates

In the event the project is implemented, suggestions for measuring the success should be included. Measuring the business impact is also an effective way of reflecting on the predictions

of the feasibility study. If the proposal were implemented and failed it would be worthwhile to identify what was lacking in the study so future work can benefit in that area. Process centric measures or result centric measures should be identified whenever possible (Bodily, 2008).

Ultimately, the value of the business must be evident in the feasibility study. The right decision may be not to pursue offering the new service or putting to market a new product. A thorough feasibility study shines the light on worthwhile projects to pursue by contributing to the bottom line financially as well as adding value to an existing business or newly started company.

Chapter 3. Results

Introduction

       Opportunity

The healthcare system has an opportunity to provide quality laboratory results to the physician network clinics within the system and community physician offices surrounding the geographical vicinity. Currently the commercial laboratories capture the majority of testing from this particular service provider population. Would a hospital outreach program for laboratory specimen testing be beneficial to the patient, physician, community and organization?

       Project Goals and Objectives

Project goals and objectives include integrating the electronic medical record between inpatient and outpatient clinic visits for patients being seen within the healthcare system. The potential to reduce duplicate testing and improve the continuum of care by offering a longitudinal record is a reality.

Technologist downtime and equipment downtime does exist at various times within the laboratory. This excess capacity can be used to test non hospital specimens driving the cost per test down with increased volume and generates revenue. Based on patterns of test orders the opportunity to bring additional platforms of testing into the laboratory becomes a possibility.

Offering hospital services to the physicians in the community allows an avenue of communication to open between the pathologists and office clinicians. If done well the community physician may choose to utilize other services offered by the hospital strengthens the relationship.

Executive Summary

Healthcare and the provision of healthcare offered in the communities supported by hospitals is a continually evolving service. Supporting our community physicians by offering high quality laboratory testing in a timely manner with consultative services rendered by pathology reinforces a community hospital's commitment to improving the physician experience. Diagnostic laboratory testing is a critical piece in treating patients, and the option to send specimen testing to the hospital laboratory has been a requested service from physicians whose offices are located on campus and from clinics within the healthcare system. Patients benefit from the integrated approach to laboratory services and management of testing resources has the potential to positively impact the cost of treatment. Studying the feasibility of adding an additional service line for specimen only testing through outreach services would benefit patients, caregivers, and the community hospital.

Outreach can be a successful venture for the hospital and begins with understanding and addressing the needs of the community physician practices and system owned clinics. National laboratories entered the healthcare market because there was an unmet need in the physician offices. National laboratories were able to widely serve physician clinics because many hospitals never responded to the need. Due to the changing state of healthcare and the pressure to provide quality care while keeping costs low, it is time for hospital laboratories to forge relationships with those physician offices and bring patient testing into the clinical hospital laboratories. Integrating outreach specimen testing into the delivery of healthcare service has the potential to improve patient outcomes through quality and utilization management and the electronic medical record promoting more rapid interventions when necessary. The solution may not be easily

found but can begin with two options; full scale electronic implementation of outreach services to system clinics and community physician offices, or minimal electronic integration capability that offers testing services through the use of the hospital clinical laboratory.

Laboratory outreach is important in terms of physician satisfaction and will provide a service requested by physician offices in the area. With the close proximity of physician offices, specimens can be transported quickly, offering STAT turnaround times that are faster than a larger, high volume laboratory can offer. Care can be more inclusive, requiring less follow up for the doctor and patient if treatment decisions can be made before the patient leaves the office. Information technology options offer a web based software product to provide order entry and result retrieval that is easily accessed in the office setting. A system wide electronic medical record will be deployed to all system-owned physician offices in incremental phases during 2011. This will result in a more comprehensive patient picture for outpatient and inpatients seen within the system as all diagnostic testing is housed within one continuous record.

Benefits of offering outreach specimen testing to system-owned physician offices and community physicians in close proximity to the hospital laboratory stand to strengthen the relationship with physicians in the area. One electronic medical record with inpatient, outpatient and the non-patient specimen information for laboratory testing supports the continuum of care concept and leads to better control utilization and elimination of duplicate tests, reducing costs to deliver healthcare. Providing quality results with consistent methodology between office testing and inpatient testing to the physician is beneficial for patient management. The opportunity to reduce duplicated diagnostic testing orders improves when results can be viewed and compared. Utilization of healthcare services can be better managed through integrated delivery.

Access to managed care contracts can be complex when negotiating laboratory services with inpatient hospital reimbursement schedules. Laboratory services specifically are negotiated on a regional hospital laboratory network by Frontline Network (FLN). FLN members have access to major contracts such as Cigna, BlueCross Blue Shield and Aetna through membership. Membership considered for the system would be as an affiliate with Frontline Network. Affiliate membership allows the system to choose the managed care contracts that would be beneficial to participate in to enable outreach business to be profitable. While the system has inpatient contracts with most major payers, billing outpatients at the inpatient pricing creates dissatisfaction due to the larger co-pays associated with hospital billing. Billing can be accomplished with the hospital information system but the recommendation is to interface with a third-party billing company. To lessen the impact on hospital billing departments, third party billing companies are beneficial. The benefits also include easy reporting options, fee schedules based on collected and not billed revenue, compliance of regulations and patient satisfaction with billing outcomes based on tax identification separation from the hospital.

Financial analysis indicates a positive contribution margin generating revenue for the hospital by billing at network reimbursement with current usage data. Competitive pricing can be structured for routine testing based on direct costs. Volume would increase significantly but not exceed capacity based on test utilization information from existing system owned clinics. Financial analysis of system clinic utilization records indicate positive revenue generation, increased productivity and lower cost per test with no additional expense for personnel or equipment.

Competing on service level with the national laboratories can be matched with training and a solid implementation plan. The national laboratories have a considerable portion of the market but according to survey results when asked to rate on a scale of one to five, one being least satisfied and 5 being most satisfied the clinic staff is currently rating a three or four indicating satisfied with the service, leaving an opportunity to capture market share for the hospital clinical laboratory.

Risks of not implementing specimen only testing through outreach services would include physician dissatisfaction because of the inability to make use of on campus laboratory services. Competition would capture the business and the potential for additional revenue for the hospital would be lost. Excess capacity goes untapped in the laboratory and cost per test remains stable with the potential to increase if volume remains the same or decreases. The opportunity to offer patients an integrated health system model through the continuum of care concept with one electronic medical record would also be lost.

The recommended solution for hospital outreach services is to implement the service line with community physician offices in close proximity by installing the web based Atlas software option. Allowing the laboratory information system (LIS) and the Atlas software to interface will enhance the options for electronic integration for the independent community physician practices. It would be worthwhile to implement the Atlas software and bring on board the community physicians that are within close proximity to the hospital laboratory because this is an unmet need and would benefit the hospital inpatient, outpatient and non-patient. System owned clinics will be set up concurrently with the hospital hosted EMR in incremental phases.

Access to managed care is a consideration and entering into an agreement with a regional network of laboratories to gain access to insurance plans in the area is recommended. Based on leadership's decision membership could be either affiliate or full member. The community physicians are a concentrated group of potential customers, the service must exceed the competition on quality, patient satisfaction regarding billing and strengthening the relationship between the physician and hospital. Meeting the needs of our community will project positively on the hospital and core services. Asking for business a second time would be devastating for all objectives.

Alternately another option is to maintain the current system with the ability to accept specimen only testing from physician practices on site. Business would not be solicited. Specimens submitted from physician offices would be registered through registration into the hospital information system, all demographic information would be provided by the physician office. No courier system would be available to outlying clinics implying this solution would likely service physician offices on the hospital campus. Any courier cost would be at the obligation of the requesting party. This process by which specimen only requests could be handled and resulted is a workflow that needs to be addressed in some capacity at the very minimum.

While not implementing the service line poses a risk for the system there are risks that exist with implementation. The uncertainty of healthcare reform may change how managed care contracts and reimbursement structures will be coordinated in the future. Information technology is sophisticated and unforeseen issues are not uncommon. The acceptance of the proposal and willingness of laboratory staff to participate in the implementation and

development of the outreach services must be planned and communicated to perfection. Poor customer service and lack of relationship development with physician customers would be damaging to the success and longevity of the program. Laboratory leadership in conjunction with senior administrative staff will need to clearly communicate expectations and support of the program, removing barriers and assisting in timeline deadlines if necessary.

Analyzing the potential to add outreach services to the community hospital can be implemented at a single facility or as a system depending on the cooperation and collaboration of interested groups. Moving the recommendations to implementation would require capital start up costs, offer a service being requested by the physicians practicing in close proximity and better serve patients that chose to receive their primary care and acute care services in one system. Cost efficiency, access and high quality services with improved patient outcomes, integrating the delivery of services via one EMR while generating revenue through adding a laboratory non patient specimen testing outreach service line are considerations that will require creative and collaborative efforts amongst sectors such as system facilities, senior leadership, managed care department, billing resources, clinical laboratory and materiel management.

Consultants

Table 1. Consultants	
Name	Title
Beth Forsyth	Vice President Ancillary Services
John Higgins	Chief Financial Officer
Lisa Varga	Manager of Physician Services
Katie Paganucci	Director of Physician Services
Dr. Cobb	Physician- System Clinic
Dianne Beesley	Laboratory Director
Bart Young	Laboratory Manager
Cindy Swank	Point of Care Testing Coordinator
Tricia Fox	Senior Financial Analyst
Susan Donahue	Director Physician Network

Name	Title
Doug Paschal	Managed Care Department
Rich Fey	Managed Care Department
Lisa Wetherbee	Vice President Physician Network Services
Joyce Ludwig	ARUP Laboratories
Sandy Richman	ARUP Laboratories
Joe Miles	ARUP Laboratories
Diane North	ARUP Laboratories
Daryl Bohlender	Frontline Network
Nancy Ewing	Materiel Management
Michael Snyder	Consultant Laboratory Management Services
Gary Stansbury	Laboratory Information System Manager
Donna McCoy	Laboratory Information System Analyst
Sara Bresee	Laboratory Information System Analyst
Karl Wagner	Director Information System Technology
Tara Delockroy	Senior Director Patient Care and Business Development
Sharon Root	Decision Support Analyst

Strategic Content

Business Environment

Table 2. Hospital Statistics 2009		
Beds	ED Discharges	Laboratory Tests
234	11,000	450,000

Table 3. Population Projections				
2008	**2009**	**2010**	**2011**	**2012**
612,000	632,250	642,998	653,929	665,046

Figure1. Market Share Laboratory Industry
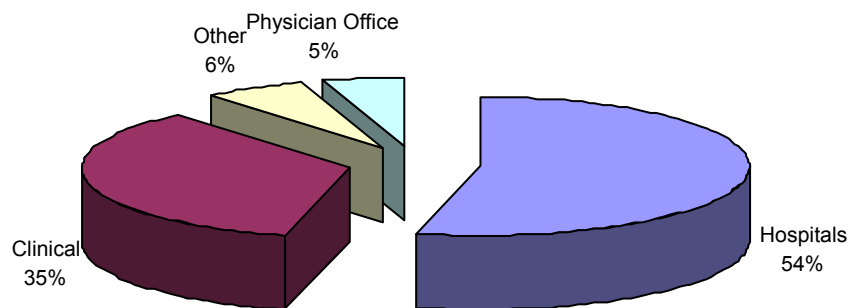
Clinical laboratories represent 35% of the market, which leaves opportunity to extend

hospital outreach services to the patients the physician office is currently routing to the

commercial laboratory (Bohlender, 2010). Survey of physician network clinic directors and

managers was conducted. Three directors oversee 28 clinics along with 22 managers. 11 surveys

were returned. On a scale of one to five, one being least satisfied, 5 being most satisfied, the

majority of respondents indicated a satisfaction level between three and four. Technical

knowledge by accessing laboratory staff and medical staff for consultation was an area the

surveyed laboratories felt service could improve. Billing issues were indicated as being handled

efficiently at the time of survey and a clear indication for the best outcome for the patient was

evident in the responses.

Figure 2. Service Area

10 mile radius of community hospital includes 19 zip codes

Table 4. SWOT Analysis	
Strengths • Consistent quality results/methodology • Utilize excess capacity • eSummit implementation • Gain access to MC contracts through affiliation with Frontline Network • Minimal direct costs allow for competitive pricing • Pathology consultative support • Quicker turnaround time • Computerized physician order entry • Educational opportunities for physician office staff provided by pathology	Weaknesses • Customer service in laboratory under developed • Competing IT projects • EMR implementation timeline • Maintaining patient satisfaction with regard to deductibles and co-pays • Employee buy in • Capital investment for start up
Opportunities • Community provider request • Increase physician engagement • Proximity to clinics • Increase efficiencies by reducing duplications in tests/utilization management • Market services as an integrated delivery system • Meet meaningful use guidelines by 2015 • Employment opportunity- support staff position	Threats • Managed care contract negotiations • Competition: other hospitals are developing programs; national laboratories are still a presence • Patient satisfaction with regard to co-pays and deductible structures • Increased uninsured patients/increase in self pay patients

The opportunity for laboratory outreach exists because physicians have requested the service. Identified strengths promote the investigation of feasibility into the non-patient specimen testing options. An issue of concern is the competing priorities for capital within the organization's various departments, weakening the possibility and potential for success. High level leadership may see the project as worthwhile but at present time has not allocated resources

to move the outreach service program to implementation. Serving area clinics through laboratory testing is a service that ties in with one of the systems strategic goals to collaborate with physicians and partners to improve access and grow volume. Laboratory employees are reluctant to embrace the new service line in concept and view the project as additional work with no addition of staff.

Managed care contracting with regard to accessing to the major payors is an issue identified as a threat. Short contract terms and the need for continual negotiations raises reluctance with the system managed care department to tackle the difficult aspect of negotiating for outpatient laboratory services with the various insurance organizations. Through an affiliate membership with a regional network of hospital laboratories the insurance contracts for outpatient laboratory services are handled by a messenger model frame and remove the hospital managed care department.

Patient specimens tested and resulted in the laboratory information system can be viewed and accessed in the hospital information system that clinic physicians as well as hospital physicians have access to. Physicians treat based on a more complete patient story when using the same electronic record platform from clinic to hospital setting. Utilization of healthcare resources, in particular laboratory tests can be managed better to reduce duplication leading to more efficient flow of the patient through the system potentially reducing length of stay.

Information management is the third strategic issue that emerges in the SWOT analysis. Cost can be difficult to contain when information technology is developed. Interfacing between systems can involve varying software platforms which may or may not operate as expected. It is not uncommon to see extended timelines due to learned information as information is managed

electronically. Competent support is expensive and timelines for starting and completing a

project are not consistently defined. As healthcare moves toward electronic charting in all

modalities competing project priority across the system becomes a real issue. Personnel

resources are raided for talent from competitors and enticed away from the system at key points

in projects that will impact the implementation timeline.

Healthcare systems that operate as an integrated delivery system largely dependent on an

electronic medical record can offer managed care organizations the benefit of monitoring

efficiency and controlling cost. The hospital may be in the position to leverage the electronic

medical record between all modalities to increase efficiencies. Outreach testing is a department

level project but ties in with the overall strategic goals of the organization to achieve clinical and

operation excellence along with collaborating with physician partners to improve access and

grow volume.

Managed Care/Payer Mix

Payer mix can vary by demographic area. Managed care is a major consideration to the

implementation of specimen only testing. The highly tailored insurance plans vary making

contracting for laboratory services an undesirable venture for hospital managed care

departments. The focus of this managed care department is with the inpatient population and

high dollar payment structures. Laboratory reimbursement is significantly less in comparison.

Clinical laboratories have recognized the challenges of gaining access to major contracts for

laboratory testing. Hospital laboratories have formed regional networks to compete with the

commercial laboratories. If there is reluctance on the part of the contracting department to

negotiate laboratory services into a contract, a messenger model network may provide the means

to access major insurance contracts. This possibility was explored in depth for this project. This

model offers a membership of clinical laboratories across a region that determines what contracts

to participate in and negotiate acceptable reimbursement figures that all members agree on.

Table 5. Managed Care Insurance Market	
Health Plan	Members
Anthem Blue Cross Blue Shield	754,000
United Healthcare	690,000
Aetna	542,000
Kaiser	483,000
Cigna	280,000
Great West	207,800
Rocky Mountain	156,900
Humana	105,700
Denver Health	41,500
CO Access	26,500

Figure 3. Colorado Managed Care Insurance Market
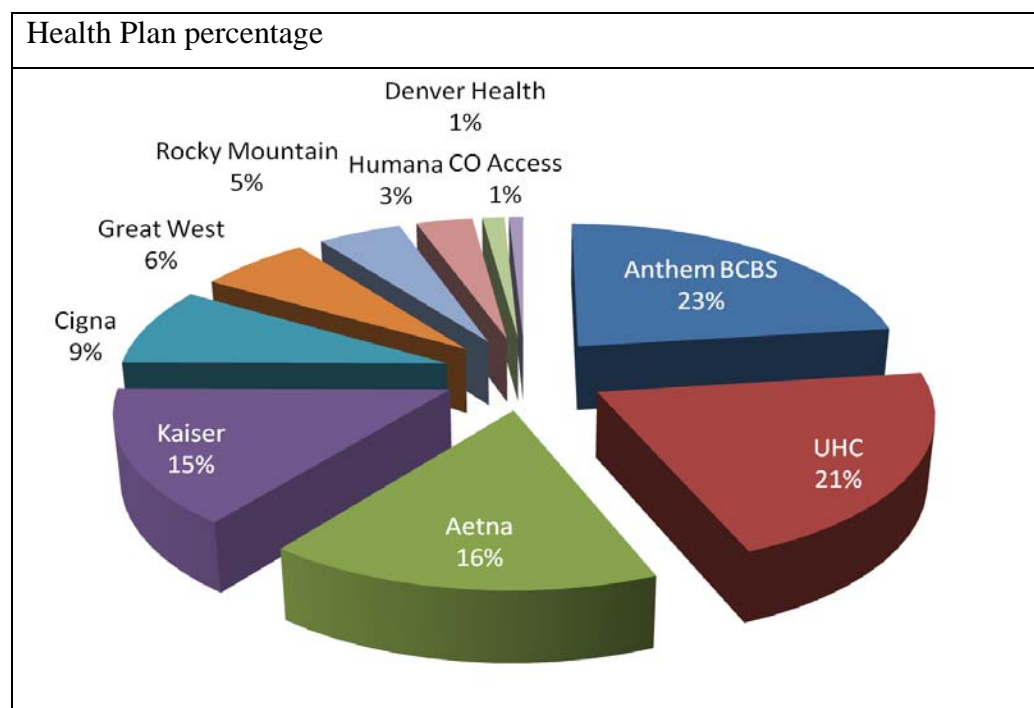
Frontline Network (FLN) was established in 1995 by a group of laboratory managers in northern Colorado with the goal of creating a network to enable participants to access managed care contracts in the region to compete with large commercial laboratories. Their solution is to create a lab network utilizing existing staff, equipment, and locations of a collection of hospital sites across a geographically significant footprint for the purpose of securing payor contracts to provide outpatient lab services. A messenger model is a type of integrated delivery network (IDN) that acts as a messenger between an MCO and the providers participating in the IDN regarding contracting terms. The network does not have the power to collectively bargain, thus avoiding antitrust violations (Kongstvedt, 2009). What it can offer members is the information exchange between payors and members, alliances that offer broad geographic coverage and the potential for test sharing. This model creates competition with each other to take market share from the national laboratories. Several membership levels are offered. Frontline Network members currently have 8% of the market share (Laboratory Management Services).

Table 6. Frontline Network Contracts
Managed Care Plans
Anthem BCBS PPO/POS/Indemnity
Anthem HMO Colorado
United Healthcare
Aetna
PacifiCare
Humana/Choice Care
Multiplan
Great West
Cigna
Cofinity

Each FLN contract was verified by the managed care department. The validation

document confirmed contracts and raised questions regarding geographic restrictions that

prompted further information gathering. The managed care department did find pockets of

geographic restrictions that require further clarification.

Billing

Several scenarios exist for billing. Billing the outpatients through the hospital billing

system is possible but could mean higher deductibles for patients based on how the insurance

company processes the claim. Based on the results of the survey, if the impact to the patient was

financially unfavorable the outcome of testing being done in the hospital laboratory would have a

negative impact. Third party billing allows patient testing to be billed under a non hospital tax

identification number, preventing the managed care company from initiating hospital billing

rules and subsequent deductibles. Table 3 provides a breakdown of frequently ordered tests.

The molecular testing charge is higher in price and explained in more detail in Table 4.

Table 7. Patient Billing			
Scenario 1: Patient responsibility routine tests			
	Hospital Claim Deductible-$1,000	Network Claim Deductible-$250	Commercial Claim Deductible-$250
Patient responsibility: Complete blood count Basic Metabolic panel Lipid Panel Thyroid Stimulating Hormone Hepatitis C Antibody	$305.26	$56.27	$44.20
Patient responsibility: Enterovirus PCR	$338.37	$43.78	$43.78
Total Patient responsibility	$643.63	$100.05	$87.98

It can be difficult as a consumer of healthcare services to know where laboratory specimens are being sent when paying a visit to the doctor's office. Part of the responsibility of the hospital system is to be knowledgeable about plans and the impact to the patient, adopting the correct billing option for laboratory non-patient specimen testing when negotiating with physicians to service their clientele. Should the patient require additional laboratory testing they will continue to pay the hospital negotiated prices until the deductible is met. Patients could be negatively impacted financially when deductibles are considered. The outpatient deductible for outpatient services is significantly less and with repeat testing will be met sooner and with fewer out of pocket expense to the consumer.

As managed care plans become more tailored to the needs of the customer there may be testing that is excluded from the plan entirely. It would not be uncommon for plans to exclude high dollar molecular testing. Molecular tests are reimbursed at higher dollar amounts because they may not be included in the contracted pricing structures. This is "pass through" testing. Commercial laboratories anticipate capturing pass through tests to offset the routine tests paid at lower reimbursement. National laboratories have come to rely on the tests with more revenue as a means to compensate for the low prices offered on high volume tests.

A patient that presents for molecular testing may have out of pocket expenses similar to the scenario outlined in Table 5.

Table 8. Patient Billing						
Scenario 2: Patient responsibility molecular testing						
	Hospital Claim Deductible-$1,500		Network Claim Deductible-$500		Commercial Claim Deductible-$500	
HepC PCR	Charge $398		Charge $398		Charge $398	
	Allow $398	Pt. Paid $398	Allow $398	Pt. Paid $398	Allow $241	Pt. Paid $241

The allowable contractual charge is typically negotiated higher for hospital services. Since the deductible is higher than the outpatient deductible, the patient will be responsible for all laboratory tests billed through the hospital until the $1000 deductible is met. The network will charge what the hospital charges, the difference being the contractual allowable charge that can be generated and the patient's responsibility. The network typically negotiates rates with the payors just slightly higher than the commercial laboratory price. The commercial lab competitors have not negotiated the cost of more expensive molecular testing. If pre-authorization of high dollar testing is passed with healthcare reform this will decrease ordering and force reevaluation of revenue generating tests on the part of commercial labs.

Billing third party is beneficial to the organization and the end user of the laboratory services. Managed care plans are becoming more specialized and customized specifically for employers to include and exclude healthcare services as a mechanism to accommodate the cost of insurance premiums. To a patient, the laboratory services they receive should be seamless. A clear benefit being billing office resources can maintain current operations without additional workload. Third party billing companies will collect missing information, although with the entered demographic data the electronic version should capture most. Compliance with Medicare 72 hour rule is met by holding the claim for 5 days before submitting. Reports can easily generate financial information specifically for laboratory specimen testing. Competing hospitals use third party billers.

Billing Medicare patients for laboratory testing must be done direct. The network or physician office does not have the option to generate a bill for the government reimbursement

population. If the hospital was not interested in taking on the added government claims the

hospital can enter into a contract with a third party billing companies to complete the process.

Advanced Beneficiary Notice (ABN) is required to meet compliance for Medicare patients and if

a hospital is going to seek reimbursement for charges not covered by Medicare from the patient.

If the ABN is not filled out properly, including signature and indicating the patient's cost for the

test the hospital cannot bill the patient to capture any services that are not reimbursed. To

minimize lost reimbursement dollars, any electronic order entry system that is utilized should

consider automatic checking of ABN criteria based on diagnosis codes.

Marketing

 Considerable growth is expected in the geographic area near the community hospital.

The following physician networks would be considered. A competitive consideration is the

patient service center's locations for patient convenience in specimen collection offered by Quest

and LabCorp. In the high volume clinics the emerging practice is to staff a commercial

laboratory phlebotomist in the physician office to process orders, collect the specimen and

prepare it for transport. Whether a system approach is taken or a single facility, an account

representative would be necessary to manage the program, working closely with physician

offices and the clinical laboratory to maintain positive relationships and outcomes and growth.

Marketing would be initiated with the hiring of an Outreach Services Account

Representative. Territory management tools would be used to enhance sales success and monitor

the potential customer prospects, upgrade opportunities amongst clients, and communicating

with customers in jeopardy of leaving. Enhancing the brand image of the hospital can be a

marketing strategy developed around reliability and reputation to persuade physician loyalty to

the clinical laboratory. A joint marketing campaign can be launched in conjunction with the business development team and liaison for physician recruitment.

Finance

Financial assumptions were made pertaining to volume coming from the system clinics. All eligible volume from each clinic would be routed to the hospital laboratory, including all payors with negotiated contracts through a network as well as government work. Test utilization records from each clinic indicating tests performed by the national laboratories for 2008 and 2009 provided the data to estimate volume as accurately as possible. Growth was calculated at zero for the first two years with a 1% increase thereafter. Supplies and direct costs were adjusted each year to account for a 4% inflation increase. Upfront capital expense is listed and can reflect a single facility or system approach. The potential remains to split capital expenses between laboratories if collaboration is pursued.

Laboratory is staffed on a fixed basis and not a flexed structure as seen on most nursing units. This type of staffing model creates idle time for technologists and processing staff. Although unable to control the flow of work in all situations, bringing outreach testing to the laboratory fills the downtime with revenue generating testing. The financial analyst was not convinced that all excess capacity should be allotted to the outreach program. Twelve percent annually was set aside for inpatient growth. Given the recent growth, however, 12% is very generous. The need to add technologic staff is a consideration if the program grows as anticipated. Since growth is stagnant, the 12% is left out intentionally but if economic conditions improve can be factored back in.

Excess capacity was calculated by annualizing the units of service (UOS) as well as the productive hours to calculate the productivity index. Looking at the tests per labor hour for the current staffing configuration with the calculated tests per hour, the difference was added to come up with 4,166 tests that could be accommodated per month over the inpatient testing that is done. The laboratory has the potential to run an additional 50,000 tests per year without the addition of any full time equivalents for testing personnel. Salary happens to be the costliest consideration for the financials.

Table 9. Five Year Financial Pro Forma						
	Year 1	Year 2	Year 3	Year 4	Year 5	
Physician Network Referred Volume:						
FLN Volume	17,125	17,125	17,296	17,469	17,644	
MC/MD Volume	6,196	6,196	6,258	6,321	6,384	
Total Test Count	23,321	23,321	23,554	23,790	24,028	
Net Revenue:						
Net Revenue per test- FLN Contracts	12.58	12.39	12.21	12.02	11.84	
Net Revenue per test - MC/MD	21.98	21.65	21.33	21.01	20.69	
Reimbursement Inflation		-1.5%	-1.5%	-1.5%	-1.5%	
Net Revenue - FLN Contracts	215,431	212,200	211,107	210,020	208,938	
Net Revenue - MC/MD	136,190	134,147	133,456	132,769	132,085	
Total Revenue	$ 351,621	$ 346,347	$ 344,563	$ 342,789	$ 341,024	$1,726,345
Operating Expenses:						
Direct Supplies/disposables and Reagents	49,670	51,657	54,260	56,995	59,867	4%
Direct Variable Labor	0	0	0	0	0	
New Salaries (Lab Non-Tech Support, Cust Svc)	47,320	63,201	65,097	67,050	69,061	3%
Courier Salary Expense	12,480	12,854	13,240	13,637	14,046	3%
Benefits	15,787	20,079	20,681	21,301	21,940	26.4%
Reference Testing	23,582	24,054	24,780	25,528	26,299	2.0%
IT Solution-MD Bridge Maintenance	4,056	4,056	4,056	4,056	4,056	
Transaction Rate Expense (paid to reference laboratory)	2,832	2,832	2,860	2,889	2,918	2.8
Miscellaneous/Computer-Printer per office	17,500	3,000	3,000	3,000	3,000	$ 1,450
Billing Fee	28,922	28,488	28,342	28,196	28,050	7%
FLN Affiliation Fee/Utilization Fee	16,580	14,854	14,777	14,701	14,626	7%
Market Assessment/Marketing	3,200	2,000	2,000	2,000	2,000	
System Svcs IT Operating Cost	7,985	8,304	8,637	8,982	9,341	4%
Depreciation	8,268	8,268	8,268	8,268	8,268	
Total Expenses	$238,182	$243,646	$249,997	$256,603	$263,473	$1,251,902
Contribution	$113,440	$102,701	$94,566	$86,186	$77,550	$474,443
Contribution Margin	32.3%	29.7%	27.4%	25.1%	22.7%	27.5%
Annual Cash Flow	$121,707	$110,969	$102,834	$94,454	$85,818	
NPV - 5 Year	$337,710					9%
NPV - 3 Year	$228,987					3%
Expense per Test	$10.21	$10.45	$8.29	$8.23	$8.18	12%

Table 10. Capital Request		
	3 System	1 Hospital
Gateway Server	667	2000
Atlas Software Upfront Capital	14,983	44,949
IT/LIS Capital	19,022	19,022
LIS Interface –SW	4,000	12,000
Billing IT Capital – SW	2,667	8,000
Total Upfront Capital	41,339	83,971

Operations

Internal Infrastructure

Part of the materiel management sector of hospital operations is an internal courier service. System owned clinics are serviced daily with the delivery of medications, linens, and various other supplies. The addition of an afternoon courier stop to pick up specimens would be easily accommodated. The capacity for more urgent specimen pick up requests would require further investigation and consideration to financial pro forma. All vehicles, maintenance and courier certifications for transporting diagnostic specimens are met and would not add expense to the system service.

Human Resources

Outreach Services Account Representative

Job Description:

Participate in active marketing to grow territory service area and financial growth.

Responsibilities will include development, management and organization of outreach services,

sales and support. Coordinate information technology, outreach and laboratory operations,

billing and finance. Expectation is for representative to build strong working relationships with

hospital, community, and system clinics physicians and staff.

Table 11. Job Duties
Offer and coordinate laboratory services with all clinics associated with hospital.
Develop and maintain outreach sales and marketing, including environmental scanning for new opportunities.
Coordinate with technology staff to implement ordering IT option, training and troubleshooting when necessary.
Work with laboratory operations lead to resolve any courier or testing issues.
Liaison between laboratory and client.
Maintains knowledge of regulatory requirements and meets standards with evidence of compliance to pass inspections.

A Client Service Representative was accounted for in the financial breakdown of the

program. Customer servicing training would benefit clients calling in for help with any aspect of

the referral testing process. The phone system services would require further evaluation and

modification. . Clients do not want to be routed around when dealing with the laboratory. One

option is to disseminate the calls from one location to various areas for assistance. Another

option is to provide the resources and training to resolve the issue on the first phone call. A

technician or pathologist could be consulted in the event the Client Service Representative or

Outreach Services Account Representative could not resolve the issue. Strong phone support

will be necessary to satisfy the clinic staff and physicians to meet and exceed the services offered

by the commercial laboratories.

Information Technology

Figure 4. Information Flowchart

Schematic of LIS to HIS exchange
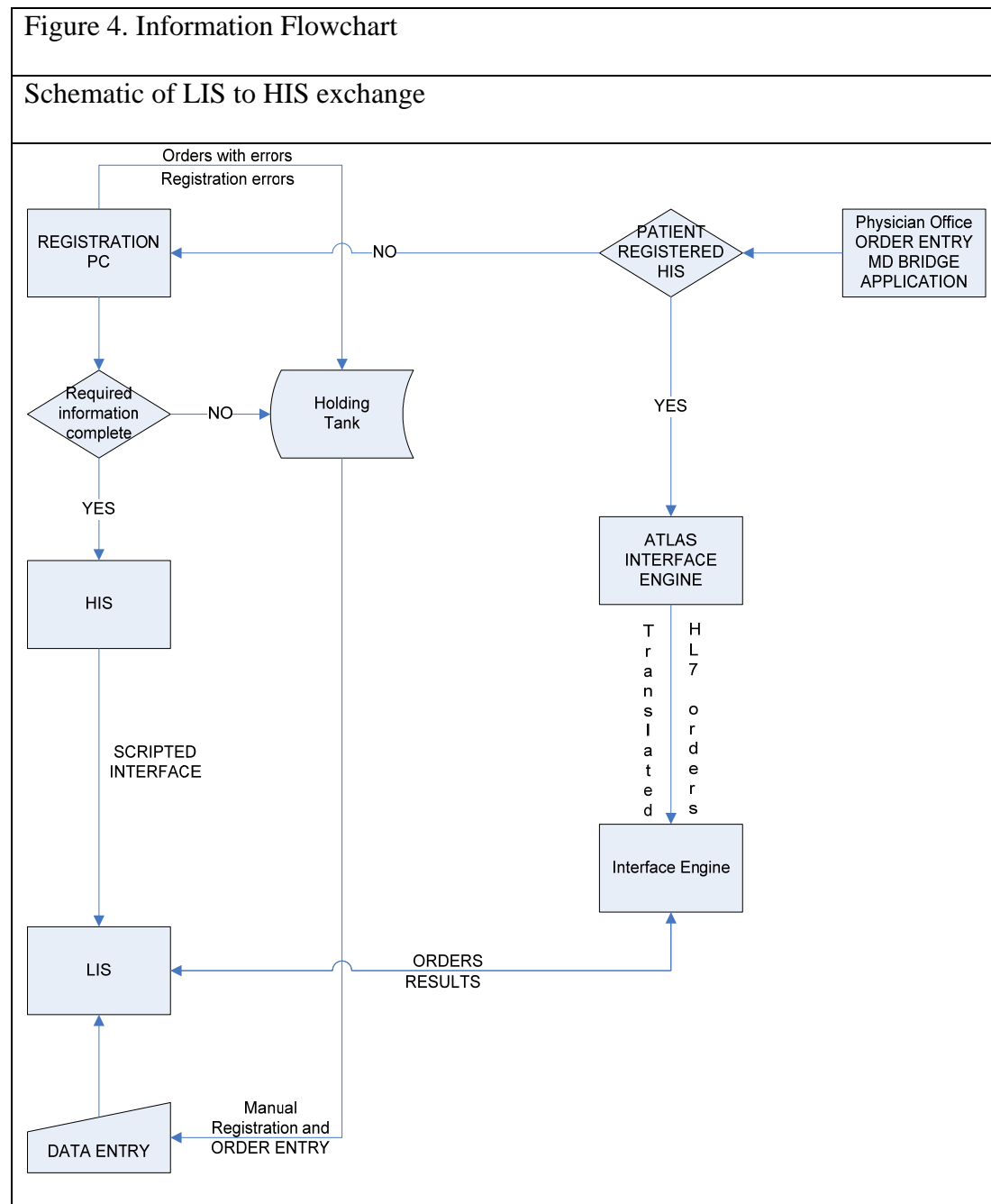
Holding Tank: A work queue in HIS that houses patient information regarding admission,

discharge, and transfer (ADT).

Order entry and results can go directly between Atlas software and HIS. Managing

and verifying the ADT information with the timing is the difficult part. Results are accessible in

HIS under that patient medical record identification number. Anytime that patient presents to the

hospital facility or physician office all laboratory data are available. Atlas Software is web based

and offers customizable reports for physician offices pertaining to utilization. Rules for

business, billing and clinical are specific to each office. Online ABN checking and test index are

included.

ABN's are generated and the process begins when the order is placed with tests and

diagnosis codes. A comparison between the CPT code and the diagnosis code is compared to the

local and nationals rules (LCD/NCD) to determine test coverage. If the test is not covered based

on the information entered an alert to exception and ABN is generated. The ordering user has

the opportunity to modify the diagnosis codes and re-run the check. Experimental testing will

also throw an alert and generate an ABN form with test cost indicated for patient to review and

sign.

Implementation of Atlas software will require cooperation and collaboration between

laboratory information system analysts and IT analysts on the hospital information team.

Table 12. Information System Deliverables	
Laboratory Information System	
1	Server setup to transfer order and result files.
2	Data file set up for Atlas software. ICD-9 codes, insurance information, LCD/NCD files physicians list, patient demographic data.
3	HL7 interface for result transmission from LIS
4	HL7 interface
5	Alpha test plan, used as beta start criteria

Table 13. Information System Deliverables:	
Laboratory Information System	
1	VPN tunnel established.
2	Need security to network and firewall/…..

Table 14. Information System Deliverable:	
Atlas Software	
1	Set up dedicated central server in Atlas data center for use in the dedicated database environment.
2	Create, requisition, report and label.

Table 15. Information System Timeline:	
Steps in 8 hour days	
Order server hardware, printers necessary for testing.	15-20 days
Establish hardware on network	5 days
Establish VPN –may already exist at time of project implementation	5 days
Test connectivity	3 days
Provide data files: insurance, test catalog, ICD9, NCD9	10 days
Testing of data files: Alpha test: insurance, test catalog, ICD9, NCD9 files	17 days
HL7 Transmissions	18 days
Interface preparation	15 days
Interface Testing –Results	6 days
Beta Site Preparation	6 days
Sample requisition and compliance requirements provided	5 days
Implementation Meeting Details of system set up and test preparation	11 days
Alpha Testing orders	10 days
Alpha integration testing	
Beta Testing	16 days
Go LIVE	

Solutions

Recommendations

Several scenarios were explored with regard to the financial feasibility of outside

specimens being routed to the hospital laboratory for testing. Entering into an agreement with a

regional laboratory network to gain access to three of the larger insurance companies in the region in conjunction with capturing the government work would prove profitable if implemented with the hospital system owned clinics.

Risks and Conclusions

An identified risk would be the reluctance of physician office staff to add an additional laboratory service. Staff would be required to familiarize themselves with another workflow for submitting specimens, ordering tests and retrieving results. Although the process would be similar, multiple reference laboratories are not preferred.

National laboratories have sophisticated systems in place to provide round the clock customer service. The hospital laboratory at this time lacks the infrastructure to compete without additional customer training. Minor changes to the telephone system, hardware and software would also be needed.

Outcome Measures

Increase in revenue

Increase in community physician involvement

Increase units of service

Physician Satisfaction

Project Estimates

With no growth projected in the first two years and minimal growth projected for years three through five the project has significant potential.

Quality metrics would be measured. Turn-around times, uptime of interfaced systems (system downtimes are a reflection of quality and customer service), incorrect or missed orders,

mislabeled or rejected specimens due to integrity, and ability of customer service representatives to resolve issues would all need to be measured. Courier services including stat pick up requests would also be monitored; missed pick up requests would be reported. Quarterly reports would be issued unless it was determined more frequent reporting is necessary. All monitors would reflect service issues, provide a mechanism for feedback and ensure the customer was receiving quality services.

Financial performance would include claims billed and percentage collected. A variety of reports are available through the third party billing company per client request and include daily sales outstanding, bad debt rate, denial and write off reports, revenue, margin, and utilization reports.

Staffing goals for the outreach program would include maintaining high retention and low turnover. Morale of the staff, historical knowledge and stability are considerations that contribute to a sustainable program.

Conclusion

Providing a service line that brings testing into the hospital laboratory has clear financial benefits. More importantly is the opportunity to manage a piece of the healthcare delivery through the use of diagnostic testing utilization. Physician and patients experience quicker treatment decisions, access to a complete picture of the patients' health with consistent, comparable methodology for results. Generating revenue, increasing volume to use excess capacity and driving down costs are products that promote moving forward with the next steps. An outreach service line stands to modify a common component of healthcare services to meet quality, cost and strengthen community and hospital relationships.

Chapter 4. Recommendations, Discussion, and Conclusion

Hospital laboratories and their communities can benefit from the service of a specimen outreach program. National laboratories entered the healthcare market because there was an unmet need in physician offices to which hospitals were slow to respond. Due to the state of healthcare and the pressure to provide quality care, while keeping costs low, it is time for hospital laboratories to forge relationships with physician offices and bring patient testing into clinical hospital laboratories. The recommendations below include programs for incremental growth to integrated systems connecting the physician office with the hospital electronic medical record (EMR) leading to better patient outcomes.

Analyzing the potential to add outreach services to the community hospital would require minimal start up costs, offer a service being requested by the physicians practicing in close proximity and better serve patients that chose to receive their primary care and acute care services in one system. Cost efficiency, access and high quality are considerations that will require creative, collaborative and integrated approaches. The significant criteria listed will require concentrated and focused improvement. Various scenario combinations were explored with regard to the financial feasibility, customer service and the connectivity aspect of specimen only testing being routed to the hospital laboratory. Below are the recommendations for laboratory outreach for a community hospital.

I. Implement the service line with a single hospital laboratory to include system owned clinics in close proximity. Entering into an agreement with a regional network of laboratories to gain access to insurance plans in the region in conjunction with capturing the government work should prove profitable. The hospital information system would provide the

order entry and result retrieval function necessary. Becoming operational with the process would be dependent on EMR rollout for each clinic.

II. Implement the service line with community physician offices in close proximity utilizing the referral laboratory web based Atlas software option. Allowing the laboratory information system (LIS) and the Atlas software to integrate will enhance the options for electronic integration for the independent community physician practices. It would be worthwhile to implement the Atlas software and include the community physicians that are within close proximity to the hospital laboratory since this is an unmet need. The system owned clinics will be set up concurrently with the hospital hosted EMR in incremental phases. Access to managed care is a consideration and entering into an agreement with a regional network of laboratories to gain access to insurance plans in the region is recommended. The community physicians are a concentrated group of potential customers. The service provided must exceed the competition on quality, patient satisfaction regarding billing and strengthening the relationship between the physician and hospital. Meeting the needs of our community will project positively on the hospital and core services. A comprehensive, well developed service that will exceed the expectations of the customers is the objective. Asking for physician business a second time would be devastating if the initial attempt failed, because rarely will they choose to use our services again.

III. Implement the service line in incremental stages system wide as each clinic is brought up on a shared electronic medical record. Outreach testing can come on board at a pace concurrent with electronic medical record rollout for individual physician offices. The level of commitment to implement a system wide EMR may prove to have a lengthy timeline to implement and then an additional adjustment period for end users. Targeting one practice at a

time is manageable for staff and the influx of testing to the laboratory can be phased in increments and workflow adjustments can be recognized and remedied before a problem becomes too large. Capital costs would be divided between the system laboratories. Implement the project as a system, sharing capital expenses with system owned clinics. This does not meet the objective of providing a requested service to the community but the financial risk is lessened.

IV. Implementing the outreach service line with paper requisitions to include patient demographic information and insurance information is possible but not recommended. The lack of an electronic solution for order entry or result retrieval puts the program initiative at a disadvantage when compared to the ordering and result retrieval offered by the competitor. As with most initiatives in healthcare, meaningful use guidelines have prompted competing national laboratories to move at lightning speed to implement integrated order entry and result retrieval software packages. High volume clinics have even built interfaces with physician selected EMR systems to satisfy the changing regulatory requirements. As systems become more entwined in operations, the dependency on electronic information increases posing a disadvantage with the community physician opportunities identified if an electronic solution cannot be presented.

Discussion

Growing the physician network is a strategic initiative for the system. Outreach will allow the system to brand itself and showcase the quality services the hospital has to offer. Linking the potential for a continuous medical record for the patient, either in the physician office or as an unexpected inpatient in an acute care facility, the management of the patient can be more closely monitored. Reducing duplicated efforts by ancillary services such as radiology and laboratory are certain to alleviate inefficiencies in the current system with an opportunity to save healthcare dollars. A limitation to this would be that physicians would not have the skills necessary to

thoroughly access the record to extract the information from the results to prevent an unnecessary reorder of an already completed diagnostic test. As sophisticated as health information management software becomes, it is still limited by the decision making health care provider at the key board. Behavior will have to be modified to capture the benefits of an electronic system with computerized physician order entry, promoting review of the chart, revision of existing information and ordering of new diagnostic testing.

Having a plan is critical to the success of projects. A significant number of hours, expertise and time have been put into the feasibility study of outreach specimen testing, although in the time to complete this environmental scan the healthcare environment has changed dramatically. Where it once started out as a good feature to offer managed care organizations to better control the costs of treating members, this option may now be necessity. Reform is transforming the delivery of healthcare beginning with insurance companies now being mandated to adhere to policy they lobbied to prevent. The insurance industry has proven to be very resourceful when forced to be and this will likely be no different. They have managed to adapt well in a volatile market, to maintain successful bottom lines and serve its members. Collaborating and cooperating with the managed care plans would be more beneficial than letting the managed care industry shape the new era of delivering healthcare services to the communities we serve.

A barrier to success of an outreach service line is the relationships with managed care companies. Common practice amongst payors has been to secure contracts with preferred vendors keeping the cost of routine testing minimal. Complications arise when comparing the negotiated laboratory services of the internal existing hospital contracts and unknown knowledge in the area of laboratory outreach options. While working with the managed care department the perception amongst the decision makers in the department was that this was nothing like any

network they had heard of in previous years. The group expressed an understanding that nearly all of the payors negotiated laboratory services as capitated agreements, exclusively with Quest or Labcorp being the national laboratories selected. The benefits and purpose of an affiliate membership with a network of laboratories solely to gain access to contracting was viewed with skepticism. It was difficult to convey the value of offering outreach services through the hospital clinical laboratory to the system owned clinics and community physicians practicing on campus. Capturing laboratory testing is not a novel idea and a number of laboratories that implemented a program to provide testing to the community are profitable. Scanning the environment for changes indicates the emergence of PAML part of the Providence Health and Services Catholic Health Initiatives as an organization that partners with hospitals to offer support in developing their outreach business. PAML has contracted with a competing health system in the market to provide this service.

Conclusion

Planning to plan, identifying stakeholders, scanning the environment and identifying the strategic issues are necessary to evaluate a project's effectiveness (Twinam, 2010). Leadership must make decisions based on facts and the group compiling the information should omit inserting bias. As a contributor in the information gathering process it becomes important to manage the facts and be willing to accept rejection of the proposal. Work in healthcare is never done and the environment presents opportunities continually. Timing of a project is critical and may not move to implementation immediately following completing the feasibility study but at a later date when success is more likely. A barrier to implementation after taking the feasibility to business development may be contributed to the stakeholder identification. Gathering the experts from each department requires effort and clear articulation of the venture being explored.

Identifying who the key stakeholders are begins in this phase, accessing them via email, phone or meeting is time consuming but achievable. Persuading stakeholders to offer their expertise requires even less effort. What is difficult is conveying clear information about the scope of the project to gain buy in for the project resource allocation. If the stakeholders are not convinced of the worthiness of the project their assistance to get to implementation may stall the efforts altogether. Competing information technology projects impacted the progress of information technology that was necessary for outreach to get a solid start.

Managed care, cost, quality monitoring and utilization analysis are pieces of the development of a highly organized integrated system. Managing diagnostic test ordering for patients using acute care services or primary care services to eliminate excess duplication is one way to contain cost, control utilization and capture efficiency in the face of changing reimbursement, managed care contracting and health care reform. As levels of integration emerge healthcare facilities have the opportunity to enter the competitive market with a more independent delivery system model involving hospital, physician and the health plan, meeting the needs of the patient and physician with one system. Outreach would remove the need for the commercial laboratory altogether, or impact its presence within the healthcare arena. A healthcare system's relationship with and ownership of community networks of care creates a strong alliance amongst physicians. Serving the community by offering laboratory outreach, if done well, aligns with the strategic initiative of expanding the network, moving the organization in the direction of the mission and vision of the institution.

The goal of generating outreach business in a hospital laboratory is not to operate in the capacity of a commercial laboratory. Leave large scale operations to Quest and Labcorp, and have the hospital offer a continuum of the services provided to the inpatient population.

Pathology consultation, quick response times, and consistent methodology offer collaborative, coordinated service that benefit patients receiving care within the organization's network of providers. This proposal is less about promoting the laboratory rather; it is about the benefits to the patient and the hospital by providing this service to the providers in our community. Integration of all services will require more resources and planning moving forward if we are to meet the efficiency, quality and cost challenges reform will bring. As future healthcare leaders there is an immediate challenge to provide better quality services, with incredible efficiency while containing costs. Healthcare systems that operate as an integrated delivery system can offer managed care organizations the benefit of monitoring efficiency and controlling cost. Hospitals may be in the position to leverage the electronic medical record between all modalities to do that. This program is a department level project but ties in with the overall strategic goals of the organization to achieve clinical and operation excellence along with collaborating with physician partners to improve access and grow volume.

Table 16. Clinic Testing-2009 Utilization

Estimated Average Government Reimbursement per Test: $21.98

Estimated Average FLN Reimbursement per Test: $12.58

Clinic	Quest Vol	LCA Vol	Total Vol	% Gov	% FLN	% Other	Est Gov Vol	Est Gov Potential	Est FLN Vol	Est FLN Potential	Avg Net Rev/ Test	Est Total Vol	Est Total Potential	UHC	UHC Vol
Family, Pediatric & Internal Medicine of Lafayette	8,783	6,020	14,803	13%	31%	56%	1,928	$ 42,387	4,612	$ 58,018	$ 15.35	6,540	$100,406	20%	2,897
Internal Medicine of Lafayette	5,121	1,489	6,610	28%	30%	42%	1,878	$ 41,277	1,976	$ 24,861	$ 17.16	3,854	$ 66,138	16%	1,066
Thornton Medical Group	_	23,918	23,918	5%	28%	67%	1,196	$ 26,286	6,697	$ 84,249	$ 14.00	7,893	$110,535	19%	4,544
Urgent Care of Westminster	104	50	154	7%	34%	59%	11	$ 251	52	$ 652	$ 14.28	63	$ 903	16%	25
Firestone Family & Occupational Medicine	1,135	673	1,808	13%	26%	61%	235	$ 5,166	470	$ 5,914	$ 15.71	705	$ 11,080	16%	289
Larkridge Family & Occupational Medicine	1,290	1,079	2,369	12%	24%	64%	284	$ 6,248	569	$ 7,152	$ 15.71	853	$ 13,401	20%	474
Northwest Family & Occupational Medicine & Phy Therapy	5,319	4,165	9,484	4%	22%	74%	379	$ 8,338	2,086	$ 26,248	$ 14.03	2,466	$ 34,586	12%	1,138
Rock Creek Family & Occupational Medicine & Phy Therapy	3,048	1,592	4,640	5%	13%	82%	232	$ 5,099	603	$ 7,588	$ 15.19	835	$ 12,688	12%	557
BlueStone Advanced Surgical Care	48	39	87	16%	25%	59%	14	$ 306	22	$ 274	$ 16.25	36	$ 580	18%	16
Front Range Cardiovascular Associates	184	5	189	20%	20%	60%	38	$ 831	38	$ 476	$ 17.28	76	$ 1,306	20%	38
Hospital	25,032	39,030	64,062				6,196	$136,190	17,125	$215,431	$ 15.08	23,321	$351,621	10	

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Appendix A

CLINICAL LABORATORY TESTING QUESTIONNAIRE

1. Do you currently order laboratory testing for your patients? (Check one)

   ☐   Yes: Please indicate primary reference lab:_____
                Please indicate secondary reference lab:_____

   ☐   No: Please skip to the end of the questionnaire and provide comments

2. On average, how many patients do you order laboratory testing for each month? (Check one)

   ☐ < 50/month   ☐ 50 – 200/month   ☐ 200 – 350/month   ☐ >350/month

3. Do you draw blood in your office or refer your patients to a local laboratory?

   ☐ Draw in office   ☐Refer to local laboratory

4. Do you have an on-site or practice-owned laboratory?

   ☐ Yes   ☐ No

5. Please rate your satisfaction with laboratory services you currently receive from your primary reference lab:
   1 = Least Satisfied, 5 = Most Satisfied (Check for each category)

	1	2	3	4	5	n/a
Customer Service						
Responsiveness to incoming calls						
Access to Clinical/Laboratory Staff Consultation						
Ability to Solve Billing Problems						
Access to Pathology Consultation						
Turnaround Times						
Routine Testing						
STAT Testing						
Courier Service						
Reliability: Consistent on time pickups						
Service for unscheduled pickups						
Product						
Full Service Test Menu						
Quality Test Results						
Interface to EMR						

6. How do you order laboratory testing? (Check any that apply)

   ☐ Computer interface to laboratory   ☐ Manual Requisition   ☐ Other

   ☐ Electronic orders   ☐ Prescription orders

7. How are your results communicated? (Check any that apply)
   ☐ Fax ☐ Remote printer ☐ Courier
   ☐ Lab Order Entry system ☐ Direct Interface to EMR ☐ Mail
   ☐ Other (please specify)_____

8. How important is it to **VIEW** your testing electronically in your office? 1=Not important 5=Vital (circle one)
   1 2 3 4 5

9. How important is it to **ORDER** your testing electronically in your office? 1=Not important 5=Vital (Circle one)
   1 2 3 4 5

10. Has your practice invested in Electronic Medical Record (EMR) software?
    ☐ YES ☐ NO

11. What is the most important factor when choosing a reference laboratory? Please list and describe why.

12. Would your practice use EGSMC if services meet or exceed your decision criteria? Yes/No

13. If no, please specify why: (Check any that apply)

    ☐Patient Preference ☐Physician Preference ☐Insurance/Managed Care
    ☐Proximity/Convenience ☐Satisfied with current laboratory ☐Other

14. What do you like best about your primary reference laboratory's service?

15. What would you like to see your primary reference laboratory do differently or better?

16. What are the top 3 managed care plans for your office?

Comments: