

Outsourcing of Academic Clinical Laboratories: Experiences and Lessons From the Association of Pathology Chairs Laboratory Outsourcing Survey

Academic Pathology
 Volume 5: 1–5
 © The Author(s) 2018
 Reprints and permission:
sagepub.com/journalsPermissions.nav
 DOI: 10.1177/2374289518765435
journals.sagepub.com/home/apc



Robert E. Mrak, MD, PhD¹, Tristram G. Parslow, MD, PhD²,
 and John E. Tomaszewski, MD³

Abstract

American hospitals are increasingly turning to service outsourcing to reduce costs, including laboratory services. Studies of this practice have largely focused on nonacademic medical centers. In contrast, academic medical centers have unique practice environments and unique mission considerations. We sought to elucidate and analyze clinical laboratory outsourcing experiences in US academic medical centers. Seventeen chairs of pathology with relevant experience were willing to participate in in-depth interviews about their experiences. Anticipated financial benefits from joint venture arrangements often eroded after the initial years of the agreement, due to increased test pricing, management fees, duplication of services in support of inpatients, and lack of incentive for utilization control on the part of the for-profit partner. Outsourcing can preclude development of lucrative outreach programs; such programs were successfully launched in several cases after joint ventures were either avoided or terminated. Common complaints included poor test turnaround time and problems with test quality (especially in molecular pathology, microbiology, and flow cytometry), leading to clinician dissatisfaction. Joint ventures adversely affected retention of academically oriented clinical pathology faculty, with adverse effects on research and education, which further exacerbated clinician dissatisfaction due to lack of available consultative expertise. Resident education in pathology and in other disciplines (especially infectious disease) suffered both from lack of on-site laboratory capabilities and from lack of teaching faculty. Most joint ventures were initiated with little or no input from pathology leadership, and input from pathology leadership was seen to have been critical in those cases where such arrangements were declined or terminated.

Keywords

academic medical centers, clinical laboratories, clinical pathology, joint ventures, outsourcing, resident education in pathology

Received November 20, 2017. Received revised February 11, 2018. Accepted for publication February 11, 2018.

Introduction

American hospitals face increasing cost constraints from declining federal and commercial reimbursement. Many hospitals have embraced outsourcing of services as a potential cost-saving measure. This trend began with nonmedical services such as food and laundry and has spread to medical services such as pharmacy, radiology, and clinical laboratory.¹ For clinical laboratories, 2 of the largest private laboratories offering such services are Quest Diagnostics and LabCorp.² Outsourcing may take several forms, ranging from full

¹ Department of Pathology, University of Toledo College of Medicine and Life Sciences, Toledo, OH, USA

² Department of Pathology and Laboratory Medicine, Emory University School of Medicine, Atlanta, GA, USA

³ Department of Pathology and Anatomical Sciences, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, State University of New York, Buffalo, NY, USA

Corresponding Author:

Robert E. Mrak, Department of Pathology, University of Toledo College of Medicine and Life Sciences, 3000 Arlington Ave, Toledo, OH 43614, USA.
 Email: robert.mrak@utoledo.edu



management of the hospital lab, in which all personnel are employed by the outside provider, to a lab management partnership, to an arrangement in which the hospital maintains all lab employees but sends all or part of its test volume to the outside provider. Such arrangements may include only inpatient testing or may also encompass outpatient and outreach testing.²

In recent years, a number of studies have examined the issue of clinical laboratory outsourcing. Many of these provide case studies or examine real or potential effects of hypothetical arrangements,¹⁻⁹ but very few provide a systematic analysis of outsourcing benefits or problems.^{4,10} Further, academic medical centers have mission demands beyond those of non-academic medical centers, and no study, to our knowledge, has specifically examined the experiences of academic medical centers with clinical laboratory outsourcing. We sought to survey chairs of pathology in academic medical centers to collect their experiences and impressions in this arena.

Methods

An initial, anonymous online survey (with SurveyMonkey) asked all chairs of pathology who are members of the Association of Pathology Chairs (APC) about their experience with laboratory outsourcing and about their willingness to follow-up with in-depth telephone interviews. The APC chairs' listserve includes 170 US medical teaching institutions, which represent virtually all of the 90 US academic medical centers who are members of the Association of Academic Health Centers (<http://www.aahcdc.org/About/Members>). There were 42 responses, representing approximately 47% of US academic medical centers. Of these, 25 reported some experience with laboratory outsourcing. Twenty of these respondents agreed to in-depth telephone interviews and provided identifying contact information. An additional 4 chairs later volunteered their experiences.

We were able to actually arrange interviews with 14 of these chairs, and received written comments from another 3 chairs, for a total of 17 surveyed chairs (68% of those with relevant experience in this area, identified in the initial SurveyMonkey study). The respondents represented major academic medical centers in the Northeast (9), Southeast (5), and Midwest (3). The in-depth telephone interviews were conducted by 2 of the authors (R.M. and J.T.). These generally lasted 30 to 60 minutes and were open-ended and wide ranging. This format was chosen to encourage respondents themselves to identify strengths and weaknesses arising from their experiences, rather than to focus on particular issues predetermined by the interviewers. The interviewers would occasionally ask questions to elicit clarifications and expansion of particular points raised. The authors took extensive and constant notes during the session, which were later reviewed, and points raised classified into various categories. Findings from the discussions were tabulated and analyzed by R.M. and J.T.

Results

Status of the Joint Ventures

Of the 17 surveyed chairs, 4 had current outsourcing arrangements at the time of the interview. Three had experienced outsourcing arrangements in the past that were subsequently terminated, and 1 was currently in the process of terminating such an arrangement. Six chairs reported that their hospitals had considered an outsourcing arrangement but rejected it. Two chairs reported outsourcing arrangements that had evolved over time through different partners as a consequence of mergers or acquisitions, and 1 chair had previously worked for a large private clinical reference laboratory.

Origins of the Joint Ventures

Most joint venture proposals and negotiations were initiated by the private laboratory and involved the health system CEO, without initial input from the chair of pathology. For 3 of the current joint ventures, there had been no input from pathology at all, and the arrangements were announced after most or all of the negotiations had been completed. For all 3 departments with previous arrangements that were subsequently terminated, the agreement had originally been put in place without the knowledge of, or input from, the pathology chair or before the current chair arrived.

Structure of the Joint Ventures

In most cases, the existing, past, or proposed arrangements involved outsourcing routine clinical laboratory testing to the joint venture laboratory, which was often geographically remote. Anatomic pathology services (surgical pathology and cytopathology) were generally not part of these arrangements. In 2 cases, the arrangement was for clinical laboratory outreach only and did not include hospital inpatients. In 1 case, the pathology department reported that it had benefitted from additional outside work in surgical pathology that was referred from the joint venture company to the pathology department. Two chairs cited the joint venture partner's tendency to focus on high-margin, high-throughput testing, leaving more esoteric and less lucrative testing as either local testing or send outs. Two chairs further stated that, in their opinion, the commercial lab's motivation for the agreement was to gain access to the inpatient book of business.

Input From Pathology

This was cited as critical in assessing and countering joint venture proposals in all cases in which no final agreement was ultimately reached and in the 3 cases in which an existing arrangement was terminated. Several chairs commented that a good working relationship with the health system administration had been a critical ingredient in gaining such input and in influencing the final decision. One chair cited a successful track record of laboratory utilization control as both a positive talking point and a positive trust building endeavor. In 1 failed joint venture negotiation, the inability to secure additional outpatient

volume for the joint venture partner ended discussions. Joint venture arrangements were reported to have had negative effects on clinician satisfaction with laboratory services (see below), and 1 chair was helped in achieving a decision to retain the hospital laboratory in part by enlisting support from chairs and chiefs of other services in the initial negotiations.

Impact on Finances

Monetary gain was seen as a (or the) major driving factor leading the medical center to consider an outsourcing arrangement in every instance. One respondent observed that the prospect of increasing efficiency as a pathway to improving finances was an additional motivation.

Initial financial results were generally reported to have been positive, both from 1-time cash infusions to the medical center (eg, from sale of the clinical laboratory) and from cost savings on outsourced tests due to favorable initial test pricing. Over time, however, the financial gains often fell short of expectations. This was the experience both of chairs with ongoing current outsourcing arrangements and of chairs under whom previous outsourcing arrangements had been terminated. Further, those chairs who had successfully argued against initiating such joint ventures based their arguments, at least in part, on insights gained from visiting other medical centers that had current joint venture arrangements involving the proposed partner and finding performance shortfalls and clinician dissatisfaction with those arrangements.

Two major factors were seen as having contributed to declining financial benefit of the joint venture agreements over time. First, cost savings eroded as initially favorable test pricing was followed in later years by price increases. Second, there was a lack of utilization control incentive on the part of the joint venture company, which facilitated excessive testing, excessive send outs, and excessive costs. This latter effect was cited as a major contributor to poor financial performance of joint venture arrangements. Indeed, 2 hospitals that terminated joint venture arrangements were reported to have realized US\$1 million to US\$4 million in immediate savings the first year after ending those agreements, and another hospital reportedly projected an estimated US\$21 million in extra costs for send outs with a proposed joint venture agreement that was ultimately not consummated. A more minor source of increased costs, cited by 1 chair, was the logistical difficulty and added expense of allocating anatomic (eg, surgical) specimens for anatomic pathology work to be performed in-house, while sending clinical laboratory studies (e.g., culture) to a separate, geographically remote laboratory.

Two chairs (one of whom had terminated a joint venture and one who had avoided such an arrangement) reported substantial growth in their own outreach efforts and earnings in the absence of a joint venture project and commented that those gains would not have been possible within the joint venture model.

Additional sources of dissatisfaction with joint venture arrangements were voiced by individual chairs. One chair cited the small size of the remaining on-site rapid response laboratory as being an obstacle to capital requests and negotiations, in

that the significance of this small residual laboratory was diminished in the eyes of the hospital administration. Another respondent noted that mandatory Medicare part A recognition of pathologist providers' effort went undocumented by the joint venture partner for years, engendering financial compliance risk on the part of the medical center.

Impact on Physician Satisfaction

Lack of clinician satisfaction was a commonly cited outcome. This was especially true for infectious disease clinicians, who lost direct access to culture procedures and results, with negative impact on their own teaching programs. Poor turnaround time for outsourced tests was a prime source of clinician dissatisfaction. In 1 hospital, the gastroenterology service opened their own gastroenterology (GI) pathology laboratory because of dissatisfaction with the test quality and turnaround times through the joint venture.

Lack of available expert consultation support for clinical laboratory testing was also a major source of dissatisfaction on the part of clinical faculty. This was generally a consequence of lost academic clinical pathology faculty, as noted below. One respondent also noted a negative effect on faculty retention that even extended to anatomic pathology faculty.

Impact on Clinical Pathology Faculty

Loss of clinical pathology faculty was cited by many of those with current joint venture arrangements. Faculty who became employees of the joint venture company often subsequently resigned, citing a lack of academic opportunities, or were fired as a cost-saving measure. Testing panel decisions, for instance, were made at the corporate (national) level rather than locally, precluding participation of clinical pathology faculty in test design, development, or selection. One chair also commented that there were no clear guidelines for handling raises and incentive payments for faculty employed by the joint venture and that coordinating these raises and incentives with those for other pathology faculty was difficult.

Impact on Test Quality and Turnaround Time

This was widely cited as problematic by chairs with current joint venture arrangements and was also cited by those who had considered but rejected such an arrangement. Molecular pathology, flow cytometry, and microbiology, in particular, were cited as areas with inconsistent or nonreproducible results, and turnaround times for nonrapid response specimens were universally cited as poor. For 2 long-standing agreements, there was a lack of compatibility between the laboratory information systems used by the joint venture company and by the hospital.

Impact on Teaching Programs

Education of medical students, of residents in pathology or other disciplines, and of other learners is a distinguishing mission of academic medical centers and engenders considerations beyond bottom-line financial analyses. Negative impacts on teaching programs were widely cited as a major problem with joint

venture agreements. For geographically remote joint venture clinical laboratories, resident travel proved to be an impediment to education, exacerbated further by scheduling difficulties for departmental conferences and teaching activities.

This was further complicated by the lack of academically oriented clinical pathology faculty (ie, those committed to teaching). In 1 current arrangement, the joint venture partner was reportedly trying to address this by making their technical personnel available to teach as part of the negotiated agreement, but proposed that the pathology department pay salary support to these technicians to compensate their teaching efforts. As mentioned above, other resident training programs, especially infectious disease, are also impacted adversely.

Discussion

Outsourcing of clinical laboratory services is increasingly seen as a potential source of cost savings by hospital administrators, and a careful analysis of the actual financial performance of such joint ventures is critical. Academic medical centers have missions that extend beyond patient care, and negative impacts on those missions must also be considered in evaluating any proposed outsourcing arrangement. Although there has been much discussion of clinical laboratory joint ventures with hospital clinical laboratories in general,¹⁻¹⁰ we are not aware of any previous survey specifically addressing the effects of such arrangements on the unique missions of an academic medical center.

In our survey of chairs of pathology at academic medical centers, respondents reported significant negative impacts of outsourcing arrangements on educational programs and on academic (teaching) clinical pathology faculty. We also found significant dissatisfaction regarding patient care, especially test turnaround time and test quality. The major findings of our survey are summarized in Table 1. In agreement with these findings, others have reported that poor test turnaround times are a prime source of dissatisfaction with outsourced clinical laboratory testing,^{2,4} and 1 study found significant numbers of medical errors resulting from laboratory outsourcing.¹⁰ Our survey found that these problems also led to considerable dissatisfaction on the part of clinicians, in accord with findings cited by others.^{5,8} Indeed, even the hoped-for cost savings often proved ephemeral, as price increases and management fees and lack of utilization-control incentives eroded initial financial gains. Although previous studies have frequently cited financial gains from outsourcing,^{2,5,7} at least 1 observer⁹ comments on long-term financial decrements similar to what we find here. Indeed, we identified academic hospitals that had actually realized substantial savings after terminating a joint venture agreement. We also found examples of increased outreach revenue after terminating or declining such arrangements; increases that would not have been possible under the joint venture arrangement.

A number of the existing or former joint venture arrangements were negotiated with little or no input from (or even awareness by) department of pathology leadership. The inclusion of pathology leadership often resulted in declination or termination of such agreements, presumably because potential

Table 1. Summary of Findings of the Survey.

Finances	<ul style="list-style-type: none"> • Monetary gain was a (or the) major driving factor in every instance. However, the financial gains often fell short of expectations.
In particular . . .	<ul style="list-style-type: none"> • There was increased test pricing after the initial contract period. • Lack of utilization control incentive on the part of the joint venture. • The small size of the remaining on-site rapid response laboratory rendered capital requests and negotiations much more difficult. • Outreach earnings: 2 hospitals reported substantial growth in their own outreach efforts and earnings that would not have been possible with the joint venture model.
Clinical pathology faculty	<ul style="list-style-type: none"> • Loss of clinical pathology faculty members was cited by those with current joint venture arrangements. • Faculty who moved to the joint venture company often subsequently resigned, citing lack of academic opportunities.
Test quality and turnaround time	<ul style="list-style-type: none"> • Both issues were widely cited by survey respondents. • Molecular pathology and flow cytometry, in particular, were cited as areas with inconsistent or nonreproducible test quality outcomes. • Turnaround times for nonrapid response specimens were universally cited as poor.
Physician satisfaction	<ul style="list-style-type: none"> • Lack of available CP consultation services was a major source of physician dissatisfaction. • Clinician satisfaction was especially low for infectious disease clinicians, who lost direct access to culture procedures and results, with negative impact on their own teaching programs. • Poor turnaround time for outsourced tests was another source of clinician dissatisfaction. • In 1 hospital, the gastroenterology service opened their own GI pathology laboratory because of dissatisfaction with the joint venture.

Abbreviations: CP, clinical pathology; GI, gastroenterology.

negative effects of such ventures were identified and brought to the attention of the negotiating parties. For those instances in which joint venture arrangements were terminated, or negotiations terminated without an agreement, the following points were cited as important in reaching these decisions:

Finances

These should be extrapolated beyond the first few years, with consideration of possible price increases, proposed management fees, and the consequences of lack of utilization control, especially for expensive send out testing. Foregone outreach efforts should also be considered.

Test Quality, Turnaround Time, and Physician Satisfaction

These should be considered carefully. Other clinical services that commonly experience negative effects from such arrangements,

Table 2. Anticipated Benefits Versus Considered Risks of Commercial Outsourcing of Clinical Labs for Academic Medical Centers.

Anticipated Benefits	Considered Risks
One time infusion of cash	Escalation of laboratory costs for purchased services in the out-years
Access to outpatient test volumes and new growth	Exclusion from regional growth opportunities
Access to a broader range of field services	Loss of local control over test menu and utilization
Cost efficiency in purchasing	Conflict between system goals and laboratory goals
Lab quality management at a national level	Clinician dissatisfaction with access to professional consultation services in laboratory medicine
	Selected quality concerns
	Turnaround time
	Loss of educational resource/access at all levels
	Recruitment and retention of laboratory professionals

especially internal medicine and infectious disease, should be brought into the discussion. The attendant implications for patient satisfaction and hospital expenses should be highlighted as well.

Education

Even with a cooperative joint venture company, geographic distance and lack of academically oriented faculty compromise this mission. Loss of academically oriented clinical pathology faculty, with consequent loss of research effort and research funding, was a commonly cited problem. These anticipated benefits and considered risks are summarized in Table 2.

Study Limitations

This was not a structured survey and hence is not subject to statistical analysis and testing. This format was deliberately chosen to enable the respondents, rather than the interviewers, to determine the scope and focus of the interview. We believe that this format has minimized potential author bias in selecting topics and questions and that the findings are thus of greater potential importance and relevance than might be the case with a questionnaire designed by the authors based on preconceived issues and concerns. As our study has now identified relevant issues and experiences as defined by the respondents, a more focused, question-based survey might be appropriate as a follow-up study. Further, the respondents to this survey were self-selected. We note that there was a very high response to our initial survey (47% of US academic medical centers) and participation in our follow-up survey (68% of respondents with relevant experience). Nevertheless, possible study bias resulting from such self-selection is possible.

Summary and Conclusion

In conclusion, a quality relationship between pathology leadership and hospital administration and a thorough analysis of the

downstream consequences of the proposed arrangement both on finances and on other missions of the hospital are essential elements in successfully assessing a joint venture proposal. Pathology input has been important in terminating preexisting joint venture arrangements, in influencing or ending negotiations in progress, and in obtaining good outcomes for new negotiations. A track record of cooperation, for instance, in laboratory utilization control efforts and general good relations between pathology and hospital administration can be very helpful in this regard, as can a financially successful laboratory outreach program. Consultation with, and on-site visits to, other medical centers that have joint venture agreements similar to the one under consideration can also be very helpful in identifying potential problems.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

References

1. Lee J. Evaluating lab outsourcing: hospitals seek savings but have to consider quality, service and staff issues. *Mod Healthc.* 2014; 44:22-24.
2. Scott K. *To Outsource or not to Outsource. Hospitals Face Tough Decisions When it Comes to Lab Services.* Clinical Laboratory News (AACC); Web site. <https://www.aacc.org/publications/cln/articles/2017/april/to-outsource-or-not-to-outsource-hospitals-face-tough-decisions-when-it-comes-to-lab-services>. 2017.
3. Forsman RW. Joint venture versus outreach: a financial analysis of case studies. *Clin Leadersh Manag Rev.* 2001;15:217-221.
4. LaBeau KM, Granade S, Steindel SJ. What do you want from your reference laboratory? A report card on send out testing in the Pacific Northwest. *MLO Med Lab Obs.* 2002;34:24-26.
5. Feinberg B, Kaden PA. Pros and cons of outsourcing laboratory services. *J Oncol Pract.* 2006;2:162-163.
6. Borchardt JK. *Outsourcing.* Lab Manager; Web site. <http://www.labmanager.com/business-management/2009/10/outourcing#.WqK8nnxG3RY>. 2009.
7. De Jesus J. *Outsourcing Lab Diagnostics Is Cost Effective.* Infnit Healthcare; Web site. <https://www.infnithealthcare.com/resource-center/author/jeff-de-jesus/page/3/>. 2013.
8. Friedman B. Value based healthcare will drive outsourcing of hospital diagnostic services. *Lab Soft News*; Web site. http://labsoftnews.typepad.com/lab_soft_news/2016/01/value-based-healthcare-will-drive-outsourcing-of-hospital-diagnostic-services.html. 2016.
9. Osborne J. *Outsourcing vs. Insourcing.* Medical Laboratory Observer; Web site. <https://www.mlo-online.com/outourcing-vs.insourcing>. 2016.
10. Chasin BS, Elliott SP, Klotz SA. Medical errors arising from outsourcing laboratory and radiology services. *Am J Med.* 2007; 120(9):819.e9-819.e11.