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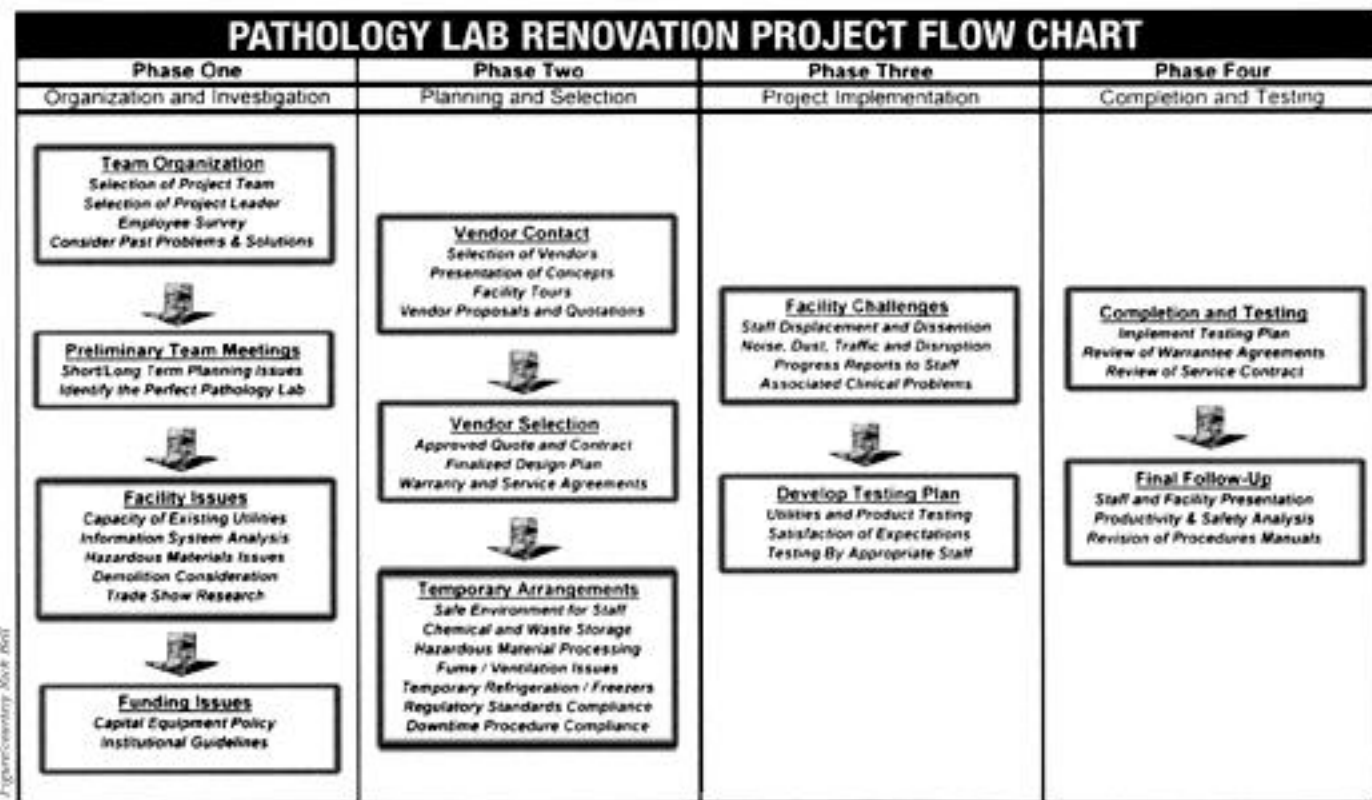
A microscopic analysis of renovating your pathology lab

By Rick Bell

After complaints from the medical staff, e-mails from angry technicians and rash notes from residents, you've decided to seriously consider redesigning your pathology lab. Though the slightest mention of this type of ordeal can unnerve even the most seasoned laboratory professional, following a basic, step-by-step guide will help navigate you through the pathology lab renovation process. The keys to a successful project are extensive research and project organization. Fig. 1 illustrates the phases your lab should go through during the process to ensure success. What follows is a detailed explanation of each phase.

main coordinator and control figure throughout the entire process. He/she should establish primary telephone and fax numbers, and mail and e-mail addresses for efficient collection of all project correspondence and should be responsible for subsequent distribution of material to other team members. The project leader need not be the team member with the highest ranking authority, but should be delegated to the individual who is willing and able to dedicate the most time to this project. Once established, a significant pathology lab redesign project can average up to five to 10 hours per week for the project leader.

As a vital step of the investigation and interrogation process,



PHASE ONE: ORGANIZATION AND INVESTIGATION

A dependable project team must be selected to take full responsibility for the renovation. The team should consist of adequate representation from the medical, technical, administrative staff and the institution's facilities department. Be certain to exchange phone numbers, e-mails and establish common meeting areas and scheduling times. Meetings should be scheduled at a time and location convenient for all team members to encourage full participation in the project.

In addition, a project leader should be selected to serve as the

the project team should develop and distribute an anonymous employee survey. This survey should provide all staff members with a rare opportunity to identify existing problems with the current pathology facility, along with suggesting possible design and product solutions. Ensure that all staff members participate in the survey to help generate a team atmosphere surrounding the project. Quite surprisingly, some of the best and most practical suggestions can sometimes come from the most unsuspecting people.

The project team should give serious considerations for short-

and long-term planning goals for the department and institution. If your pathology program is considering expanding your resident training program for example, one may consider a centrally located island-style dissection area, which will permit more circumferential viewing areas for additional students and trainees. Handicap accessibility, employee comfort and safety must always be of utmost concern for any modern day lab redesign project.

After compiling the facility goals and collecting the most valuable suggestions from the employee survey, the project team should then generate a rough visual concept for the "perfect" pathology lab. At this point, it would be worthwhile to examine the condition and capacity of the facility's current utilities. Ensure that the location and capacity of existing lighting, electrical service, plumbing and ventilation will accommodate the newly proposed lab redesign.

Of equal importance, a qualified facility information systems representative should review the location and capacity of all computer, printer and information technology equipment. Since today's renovation projects usually incorporate state-of-the-art data networks, communication and audio-visual peripheral cabling, it's essential that any proposed designs are closely coordinated with an information systems specialist. A failure to consider or evaluate information system capacity could prove to be a costly error once the renovation project is complete.

Significant planning and consideration must also be given to the proposed processing of hazardous waste, fume control, decontamination and cleaning. Determine the exact location of chemical storage areas, waste chemical carboys and biohazardous waste receptacles in the proposed design. Carefully plan the location of floor drains, safety and ventilation hoods, and water spigots to allow for safe chemical storage, waste removal and decontamination of work areas.

The project team also must determine if demolition of existing facility structures are necessary prior to starting the renovation project. In most instances, a facility architectural expert can provide vital structural and cost information regarding subcontracted demolition projects.

Depending upon the timing of the project and the possibility of attending a regional or national conference, it would be wise for a designated team member to attend a pathology-based trade show. An afternoon in a vendor exhibit hall can provide invaluable information regarding new products and designs, competitive features and pricing. The team member will undoubtedly establish solid vendor contact, which is essential for the success of the project.

The most crucial aspect marking the end of the investigation and interrogation phase of the redesign project is funding. Unless funds are readily earmarked and available (which is often a rare occurrence!), the administrative representative of the project team should be well aware of the capital equipment policies for the respective institution. If the project is to be considered for capital funding, estimated costs for the entire project should be submitted as necessary to meet appropriate institutional guidelines.

PHASE TWO: PLANNING AND SELECTION

The next phase of the lab renovation project should be initiated by the selection and contact of possible vendors. Selected vendors should be invited to team meetings where initial concepts can be proposed and evaluated. Identical concepts should be submitted separately to several vendors to allow effective comparative design, installation and pricing perspective.

Undoubtedly, each vendor will request the opportunity for an extensive tour of the facility and specifically the area to be renovated to obtain measurements and necessary utility location and information.

Each vendor should be afforded equal time frames to generate concrete design sketches and layouts along with pricing quotes. Typically, the vendor will have to spend considerable time interacting with the designated architect and the project team to finalize and agree upon equipment specifications, new products and design proposals. Remember, a qualified vendor can offer a wealth of knowledge and information based upon numerous previous similar projects. The project team should inquire about the opportunity to visit a recently completed project(s) that may be similar to your renovation.

Closely compare the finalized proposals and quotes from each of the respective vendors. Ensure that all proposals include written financial terms, warranty information, service agreements and project start and completion dates. Providing funding is available and confirmed, the project team now has the dubious task of selecting the appropriate vendor to complete the project. The selected vendor will typically require a signed purchase order to confirm the contract, along with a final design that's agreed upon and signed.

At this point in the process, the project team must digress from the exciting future project and concentrate on the temporary arrangements and staff displacement during the allotted time period for demolition and construction. Even during these provisional periods, all staff members must be provided with a safe and healthy work environment.

In addition, individual institutions may have "downtime" protocols, which must be adhered to during computer or facility shutdowns. Closely examine temporary dissection areas, interim fume handling and ventilation arrangements, chemical storage and hazardous waste collection and removal practices. Also, ensure that your temporary work area(s) accommodate any and all infectious cases and that adequate refrigerated and freezer storage is available. Remember to be absolutely certain that any and all temporary work areas comply with all federal, state and local regulatory and safety standards. A helpful suggestion would be to contact your facility safety officer to discuss and finalize the design of the temporary working arrangements.

PHASE THREE: PROJECT IMPLEMENTATION

Though the subcontractors and renovation teams will initially be warmly greeted by laboratory personnel, it is likely that the added noise, dust and disruption caused by the renovation will create some dissension among some of the staff. It is also quite common that the generally decreased efficiency of the temporary work areas will generate a few complaints from clinicians who are experiencing slower specimen or procedure turnaround times.

Staff members should be continuously informed about the ongoing progress of the renovation project. The project team members should exploit the many benefits gained when the laboratory renovation is complete. For example, a pathology assistant who is inconvenienced by temporarily dissecting specimens in the morgue may be encouraged to see new state-of-the-art grossing stations.

The project team should also determine a definitive plan for testing all aspects of the new pathology laboratory, and the testing process should include each new utility service and

product. Testing should be conducted by the staff member who will routinely utilize the product under normal clinical conditions. Occasionally, a staff member may discover a design flaw or new product problem that can easily and cheaply be rectified while the vendor representatives or renovation teams are still on the premises.

PHASE FOUR: COMPLETION AND TESTING

Upon completion of the project, the project team should immediately implement the testing plan to determine if all aspects of the newly renovated laboratory are in good working order and meet the standards of the renovation contract. Test all utilities and ventilation systems under normal working conditions and immediately address and resolve any problems. Review the warranty and service agreements with the vendor and the exact plan of action to follow if a problem arises. Quite often, the vendor may utilize a different subcontractor to perform service agreement, preventative maintenance and warranty work.

Given the time, effort and dedication invested by the project team, your newly renovated pathology laboratory should meet all design, construction and product expectations. Remember to thank and congratulate all of the department staff members who had endured difficulties associated with displacement and temporary work areas. The project team should consider a department and/or facility presentation to showcase the increased efficiency, productivity and/or safety

features of the new laboratory.

To suffice many regulatory agencies such as JCAHO and CAP, documentation of in-service education and training will be necessary for all staff members who will use new equipment or procedures. Department procedure, training and safety manuals should immediately be edited to accurately reflect the clinical and administrative changes that will accompany the new laboratory. ■

Rick Bell is from MOPEC Corp., located in Detroit.

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