CHAPTER 15

Controlling Cost of Goods

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Don't be penny wise and pound foolish.
Benjamin Franklin *Poor Richard's Almanac*

IN-HOUSE LABORATORIES

At the time Benjamin Franklin wrote the often-quoted words above, the predecessors of modern optometrists were laboring in optical shops. In these shops run by opticians, the need for vision testing became apparent, and during the 19th century the "refracting" optician emerged. At the end of the 19th century, these individuals sought legal recognition as an independent profession, thus they separated themselves from "dispensing" opticians. Through the years, a guiding principle of clinical optometry has been that the practitioner who performs the examination is the best individual to determine the suitability of the eyewear prescribed. For this reason, the fabrication of eyewear has been a consistent part of optometric practice. Even though optometry has continued to evolve into a primary eye care profession, the fabrication and dispensing of ophthalmic materials have remained important parts of an optometrist's service to the public.

Surveys of practice patterns conducted during the 1980s and 1990s indicated that optometrists were increasing fabrication and dispensing services so that they could provide the quickly produced, cost-efficient, high-quality eyewear demanded by today's consumers. An essential part of the effort to provide these services is to establish an in-office finishing laboratory. The 2001 American Optometric Association (AOA) Scope of Practice Survey revealed the following:

- About 50% of practitioners edge their own lenses
- Almost 60% tint lenses themselves
- Nearly 50% provide coatings (e.g., ultraviolet, scratchresistant)

It seems likely that these numbers will only increase in succeeding years.

There are several considerations regarding patient care, equipment needs and costs, staffing, lens inventory maintenance, space requirements, and liability issues that influence the use of in-house laboratories. Perhaps the most important consideration, however, is the improved service that can be offered to patients. Optometrists who would require several days to deliver eyewear to patients can reduce the period to 1 to 2 days or even a matter of hours if necessary. The "1-hour" service promoted by large chains and optical corporations is not demanded by most patients. In fact, patients often are skeptical of immediate service and worry that the quality will be inferior to eyewear that requires more time to fabricate. Optometrists in private practice can assure patients of quality service, and they also can control the timing of orders. If there is a need for a particular order to be completed rapidly, it can be given priority. Patients are particularly grateful for timely service during emergencies. This capacity can assist greatly in the effort to maintain a patient's loyalty to the practitioner.

There also is marketing potential in having an in-house laboratory. Even without promotion, most patients perceive an in-office laboratory as being an asset. Patients assume that the practitioner has become more up-to-date and that a more efficient service will be provided. Optometrists who have inhouse laboratories might find that the quality of ophthalmic materials is more consistent than when materials are obtained from outside laboratories. Certainly, the level of responsibility for eyewear increases when there is an in-house laboratory. The same strict tolerances for lens powers, lens centering, and finishing work must be provided by the in-house laboratory as would be expected if the work were done independently. This means there will be a "spoilage rate" as part of the cost of doing business. In well-run laboratories, this rate should be no more than 2% to 4%. To maintain a low rate, there must be a commitment by the individuals performing the laboratory work to the delivery of high-quality materials. If work is produced that does not meet accepted tolerances, however, it must be rejected and remade. In fact, this work is more rapidly performed and better controlled if it is performed in-house; reinspection and dispensing can more likely be provided within the time frame expected by the patient than if an outside laboratory has to remake, reinspect, and redeliver the order.

Cost also is a factor in deciding to install an in-office laboratory. The escalating fabrication cost for eyewear obtained from outside laboratories is cited by many optometrists as a key reason for establishing an in-house laboratory. When using outside laboratories for all fabrication work, the cost of ophthalmic materials averages 23% to 33% of gross income. This expenditure is obviously sizable but is the effort to reduce laboratory costs "penny wise and pound foolish"? The costs of maintenance for machinery and of ophthalmic materials can cut or even eliminate profits, especially in practices with low lens volumes. The number of lenses that will be finished inhouse is an important factor in determining whether a laboratory will be worth the financial commitment. Careful recordkeeping will be necessary to determine whether profit is being realized. Sound financial management demands that the optometrist determine the costs of operating a laboratory and make an effort to control those costs. There will be capital outlay for equipment, expenses related to maintenance, costs related to the purchase of materials, additional expenditures for utilities (e.g., electricity, water), and wages to be paid for labor.

Even after taking into account all the aforementioned factors, many optometrists have found the operation of an inhouse laboratory to be highly successful, although profitability is directly tied to the number of lenses finished per week. For example, in practices that finish 40 to 60 pairs of lenses per week, optometrists report savings of $6 to $8 per pair on stock single-vision lenses and $10 to $12 per pair on bifocals. These savings also can make the optometrist more competitive in terms of prices for ophthalmic materials.

Labor costs will affect economic projections considerably. In practices with a low volume of orders, it might be appropriate to use the “unfilled” time of office staff for the finishing work or to have the optometrist perform it rather than to hire another employee. Optometrists just beginning a practice will most likely not have the patient volume to justify setting up an in-house laboratory. As the practice becomes established, however, the viability of a laboratory becomes more certain. In fact, there are cases in which optometrists in young practices have found that working in their own laboratories contributed to availability, service, and cost containment more than working for other practitioners outside the office 1 or 2 days a week.

In a multipractitioner office, an in-house laboratory can be quite successful. The per-unit cost can be competitive, not only with the costs of outside laboratories but also with those of buying cooperatives composed of groups of optometrists. A full-time employee, often an optician, will probably be necessary because of the volume of orders. Overhead costs should be computed so that the “break even” volume can be determined. For example, if it can be calculated that 300 pairs of lenses must be finished per month to break even, all orders greater than that figure represent profit. The effect of a financially successful in-house laboratory will be to lower the cost of ophthalmic materials to less than the 23% to 33% of gross income that is typical for most practices; in fact, material costs can drop considerably when volume is high. Optometrists successfully using in-house laboratories routinely report savings of up to 25% to 35% of laboratory costs. The availability of these laboratory services, when combined with a quality product, will inevitably contribute to practice growth.

The usual interest is in finishing laboratories, but with newer available equipment that allows a practitioner to control the entire service, the surfacing function of lens fabrication has been added to some in-office laboratories. The use of surfacing equipment requires a higher volume to break even or generate a profit for the practice.

EQUIPMENT NEED AND COSTS

There is considerable variance in the cost of equipment needed to set up a finishing laboratory (Figure 15-1). Costs will depend on the functions to be performed—edging, tinting, coating, or all three—and whether new or used equipment is purchased (Figure 15-2). A practitioner must consider whether it is wise to spend the money required to purchase modern high-tech equipment. At optical shows for optometrists, at least one out of eight exhibitors will display new optical laboratory equipment. Patternless edgers can be purchased with computer memory and different types of finish; such an item can be the centerpiece of a laboratory. Much of this equipment does not require the skills of a trained laboratory optician to operate and can be a good investment. Surveys of optometrists with inhouse laboratories indicate that the cost of finishing-laboratory equipment ranges between $7,000 and $20,000. A list of basic equipment needed to start a finishing laboratory and a brief description of the function of each piece of equipment can be found in Box 15-1. With more than 80% of the ophthalmic lenses sold today being made of plastic (including polycarbonate), many practitioners choose not to fabricate glass lens orders and thus do not invest in chemical treating units. Box 15-1 does not include a heat treatment or chemical hardening unit.

FIGURE 15-1 View of an in-office laboratory.

FIGURE 15-2 Lens-tinting device.

BOX 15-1

Basic Equipment for an In-House Finishing Laboratory

Edger: Cuts the unfinished lens to the shape of the frame. An extra set of diamond wheels is suggested, for use when the regular wheels must be sharpened. Many edgers are available that dry edge CR-39 and polycarbonate lenses with all types of finishes—groove, facet, bevel—in about 40 seconds.
Lens groover: Used for nylon suspension frames.
Layout marker: Marks the optical center of the lens.
Layout blockers: Holds the lens in place during layout marking.
Blocker: Holds the lens in place during edging or grooving.
Frame warmer: Available with many different types of heat conductors; some also have coolers.
Lensmeter: Internal-reading models and projection- type models are available.
Lens clock: Measures the base curve of the lens.
Dying tank/tinting unit: For tinting lenses.
Coating machine (open): For special lens coatings.
Drop ball testing apparatus: To verify impact resistance.

If a practitioner decides to include glass lenses, a chemical treating unit should be considered. A realistic projection of the number of glass lenses that will be fabricated should be undertaken before investing in this equipment.

The cost of a surfacing laboratory also depends on the range of equipment purchased. Most optometrists put this cost at between $40,000 and $80,000. A surfacing generator, two-cylinder machines, computer, and layout blocker make up the largest part of this investment. When put into operation, the surfacing laboratory will realize savings of up to 70%, as compared with outside laboratory costs for bifocal, progressive, polarized, and high-index lenses. To break even, approximately 25 to 30 pairs of lenses must be surfaced each day. There are a number of injection mold systems for plastic lenses on the market. The same thing also can be said of wafer systems. The optometrist considering these two methods should explore the equipment currently on the market and before making a purchase, visit the offices of optometrists who already are using the equipment.

As of 2000, approximately 9% of optometrists performed lens surfacing themselves (Figure 15-3). About 75% of these practitioners did the work in the office; the other 25% sent the work to a separate facility. Nearly half of all optometrists offered lens-coating services. Of these practitioners, a little more than half did the work in-office and the remainder sent the work to a separate facility that they own. No matter what equipment is purchased, if something goes wrong with it, a service representative should be available right away.

The ability to troubleshoot and operate equipment is usually acquired with experience. Optometrists who are novices at working with laboratory equipment should probably purchase it new. Often, when new equipment is delivered, it is set up by the seller, who also will provide instruction to the practitioner and the staff.

FIGURE 15-3 Hand-polishing of lens edges.

LABORATORY STAFF

The first step in human resource management is to have a plan. The economic aspects of quantifying the personnel needs of a practice are discussed in Chapters 17 and 18. If an in-house laboratory is to be a service and profit center for the practice, economic planning is critical. A full-time employee might not be necessary for this service. The employee's status usually depends on the size of the laboratory. When adding a laboratory, if a technician or optician currently employed by the practice has the necessary technical background or is interested in running a laboratory, this individual can be assigned part-time laboratory duties. This person should possess good organizational skills and be able to run the laboratory as an assembly line, keeping several jobs in progress at one time. This person also should be orderly and efficient and take as much pride in the work produced as the practitioner. The time devoted to laboratory functions should be charged to optical supplies to run the laboratory as a separate profit center. The time charged to optical supplies should be equal to the time actually spent on laboratory work. It is best to have the laboratory person be responsible for ordering uncut lenses and maintaining stock lenses (Figure 15-4).

FIGURE 15-3 Hand-polishing of lens edges.

In some practices, workers from other offices or optical laboratories can be chosen to “moonlight” when the laboratory is first started. If the optometrist does not have the time or background to train a staff member, an experienced optician can serve as a teacher for a staff member who wants to learn laboratory work. Equipment manufacturers and distributors usually offer optometrists an in-office training program for the staff. Training can include instruction on how to use the equipment and pertinent nomenclature. Knowledge of parts facilitates repair, especially when that repair must be performed via telephone, because the technician can precisely describe the part or function that requires repair.

If there is enough work to keep an employee busy full time and the practitioner is fortunate enough to hire a trained laboratory optician, it might be necessary to orient this person to the private practice environment. Most successful optical laboratories are very production oriented. Although skilled and efficient, a laboratory optician might have a factory attitude toward work. It is hoped that a practice will be service oriented; desired work patterns and practice goals should be discussed at the time of hiring.

Finding trained laboratory technicians can be a problem, especially in smaller communities. Some larger cities will have optical laboratory technician programs that are taught in trade schools. These schools are good sources for employees. Often, individuals working in large laboratories want to move into a clinical environment. An in-house laboratory will provide an opportunity to make this move, and an offer for the individual to participate in dispensing can prove to be an additional inducement. A “help wanted” advertisement or an advertisement offering to train a qualified applicant will often bring additional individuals into the applicant pool. The ophthalmic industry is a relatively small community, and a conversation with local optometrists, frame sales representatives, or employees of the practice can result in the recommendation of qualified individuals.

LENS INVENTORY

To intelligently develop a plan for lens inventory, it is necessary to know what materials will be prescribed and the relative frequency with which they will be used. Many in-house laboratories limit inventory to plastic and polycarbonate lenses because glass lenses must be hardened to impart impact resistance to the lenses. Lenses purchased for stock can be bought in quantity at a lower price than on a per-lens basis. Usually an optical supply house will offer the best price on quantities of 75 pairs or more. When the initial order is made and continuous reordering for stock is anticipated, the practitioner can usually negotiate with the seller to obtain the same per-unit price on reorders for stock or for lenses out of the stock range. As stock is taken from inventory, lens envelopes should be used to place reorders, which can be daily, or at least weekly, based on volume. Practitioners in metropolitan areas may consider ordering all lens blanks from a local laboratory. Delivery of stock can be assured on the same day it is ordered, in many cases. This has the advantage of saving the cost of inventory management and the expense of the tax burden on property in some states.

Most in-office laboratories start with two pairs of lenses for each parameter stocked. In plastic, stock should be maintained up to plus or minus 3 diopters for spherical lenses and up to 2 diopters for cylindrical lenses. If scratch-resistant coatings are frequently used in the practice, coated blanks should be considered because they are the least expensive method to offer coated lenses. Pricing should be investigated for various size lens blanks. Because the minimum thickness of minus lenses is in the center, using larger blanks than needed will not affect the quality of the work. With plus lenses, larger blanks will affect quality because smaller lenses are needed for smaller eye sizes. Depending on the number of lenses that will be needed and the variables chosen, the cost of a plastic lens inventory can vary somewhat from practitioner to practitioner.

If polycarbonate and high-index plastic lenses are not used frequently, they should be ordered on a per-case basis. Because of safety considerations, many practitioners routinely prescribe polycarbonate lenses for all children, monocular patients, active adults, and patients who need them for athletic use. If polycarbonate materials are frequently prescribed, they should be stocked in the same manner as other plastic lenses. Polycarbonate and other high-index materials used for high prescriptions are usually ordered on a per-case basis since they are often beyond stock range and need to be surfaced. Because of the higher unit cost of polycarbonate lenses, a polycarbonate lens stock will require a slightly higher investment.

If a practitioner decides to fabricate glass lenses, stock should include spherical lenses up to plus and minus 2 diopters and up to 2 diopters of cylinder for each power. All compound multifocals are surfaced lenses. Stock multifocal spherical lenses usually are available in plus powers only. Most in-house laboratories do not stock these lenses. Practitioners must know the ranges stocked by optical supply houses and use them when patients require this type of lens. Stock multifocal spherical lenses usually are less expensive than surfaced bifocal blanks. When buying uncut surfaced lens blanks in multifocals or single-vision lenses beyond stock ranges, laboratory representatives should be asked for their volume uncut price list. Many full-service laboratories have a small differential in price between uncut blanks and complete prescriptions to maintain the same profit margin on both. Laboratories with greater surfacing capabilities and an awareness of the market niche of in-house fabricating practices are considerably more competitive in pricing uncut lens blanks.

These considerations should be explored and the practice volume should be realistically evaluated before investing in a lens surfacing operation. Another practice may have invested in a surfacing or lens molding system and may have a surfacing capacity beyond its needs; this situation could be a good source to explore.

SPACE REQUIREMENTS

The location of the laboratory and its space requirements will vary considerably, depending on volume and how fabrication is perceived as part of the optometric product. Ideally, the laboratory should occupy a separate room, at least 10 × 10 feet, with adequate ventilation (for chemicals). The laboratory will require several countertop electrical outlets, and these outlets should be on two or three different circuit breakers to prevent blowing fuses. Since a finishing laboratory tends to be noisy, it should be located as far from the examination rooms as possible.

For a busy practice with a full-time employee performing both glass and plastic lens finishing and a second employee performing the ordering, there should be at least 400 square feet of space. If lens surfacing is included, 1,000 square feet will be needed. In computing the cost of materials sold, the expense of this space (and maintaining it) must be considered.

When planning an office that includes a laboratory, these location and space requirements should be discussed with the designer. Some practitioners might plan the location of the laboratory adjacent to the frame room, with a window that allows patients to look into the laboratory; this emphasizes the image of a "complete" eye care facility. In such cases, the laboratory can even be located in the front of the office and enclosed with a soundproof glass window so that, on entering the facility, patients can see that eyewear fabrication is part of the service. Other practitioners might want the laboratory placed out of sight in the back of the facility to maintain a more "professional" image. This function of optometric practice often polarizes practitioners who want optometry to be accepted as a primary eye care profession while continuing to meet the needs of patients for quality eyewear. Only a realistic assessment of the marketplace will lead to the appropriate decision for any one practice.

LIABILITY ISSUES

The advantages of having an in-house laboratory are affected by the added legal responsibility of fabricating lenses that are sold directly to patients. From a liability standpoint, the most important consideration is impact resistance.

Federal regulations regarding impact resistance, which have been incorporated into American National Standards Institute (ANSI) standard Z80.1–1999 (use of 2005 standards may depend on individual state law), state that all dress lenses shall be capable of withstanding a drop ball test. The standard provides, however, that plastic, laminated, and raised-edge multifocal lenses can be tested in statistically significant samples by the manufacturer. Therefore only glass lenses have to be tested individually for impact resistance by the fabricator of the eyewear.

If prescription safety eyewear is provided, a different set of requirements must be met. The requirements for safety lenses, which are described in ANSI standard Z87.1–1998, are a drop ball test; a minimum lens thickness (3 mm); and the use of a logo, which must be placed on the lens edge by the lens fabricator. Safety lenses must be placed in a safety frame (identified by the Z87 logo) to constitute "safety glasses."

All optometrists should have adequate professional liability insurance. Practitioners who dispense eyewear should have coverage for both negligence and product liability claims. Because assistants or opticians are commonly involved with the fabrication and dispensing of ophthalmic materials, the policy should cover claims arising out of their actions (see Chapter 23). Coverage also should provide for instances in which these employees are injured (e.g., from accidents occurring during the fabrication or dyeing of eyewear). Worker's compensation coverage should be provided when available. All optometrists who fabricate materials in the office should be sure that liability insurance covers these eventualities. The best way to check insurance coverage is to review the policy with an insurance agent and to have the agent identify the specific language that provides coverage.

Liability claims involving the fabrication of eyewear are not common because optometrists are required to inspect eyewear to ensure that it meets legal standards for impact resistance. Optometrists who establish in-house laboratories should make certain that these obligations are met before eyewear is dispensed.

MEETING WITH OPTICAL SALES REPRESENTATIVES

Whether starting or buying a practice, it is necessary to establish a board of advisors: an attorney, an accountant, a banker, a financial advisor, and similar individuals with technical expertise. Another important advisor will be a trusted representative of the ophthalmic industry. To a considerable degree, financial success in practice will depend on that tangible aspect of the optometry product, the glasses dispensed. Approximately one-third of the revenues generated in an optometric practice are used directly for the payment of ophthalmic materials.

Experienced laboratory representatives are familiar with the ophthalmic marketplace and can be used for advice on subjects as diverse as the tentative location of a practice, the demographics of eye care providers in an area, how to design and furnish a dispensing area, and how to budget for an initial frame inventory. It is a representative's business to know the current trends in the eyewear field and what has been successfully received by the public.

Once a relationship with a representative has been established, the representative becomes a source for the practice's eyewear, since he or she will bring new products to the office, as well as products that the practitioner has seen advertised in journals. These representatives also become the individuals who must be contacted regarding quality of work, laboratory services, and cost of materials. As a practice grows, representatives can provide an important service by educating staff members on the advantages of specific lenses and frames to patients. Many laboratories and suppliers will offer in-office, after-hours seminars to teach staff members how to present specific ophthalmic products to patients.

Controlling time spent with representatives is important to smooth business operations. Doctors may want to consider limiting relationships to two laboratories and seven to ten frame lines.

SELECTING AND USING OPTICAL LABORATORIES

Although most optometrists have accounts with many laboratories and frame companies, in the majority of practices, one source is used for more than half of the laboratory work. There are several factors that lead to the selection of a primary laboratory, including communication with sales representatives and laboratory managers; sources of frames; availability, service, and quality in obtaining frames; turn-around time; insurance provider status; inventory control of frames; quality lens control; laboratory service; pricing of materials; laboratory policies; and the facility to expedite laboratory work and materials.

SOURCES OF SPECTACLE FRAMES

Until the late 1960s, most spectacle frames were sold through wholesale distributors or optical laboratories. These companies were referred to as "full-service laboratories" and usually supplied frames from an in-house frame inventory while providing lenses and lens services from their surfacing and finishing laboratory. In addition, these companies usually sold full lines of ophthalmic equipment. During this era, it was possible to deal with one optical laboratory. If all the frames in a practitioner's dispensary were from the same company that provided the lenses, orders for completed glasses could be phoned or mailed to the laboratory. Logistically, there is still a sizable advantage to working this way, and laboratories that maintain inventories of frames should be considered whenever they can satisfy the need for good service and price. Throughout the years, however, imported frames have become a bigger part of the ophthalmic market, and direct sales of frames by manufacturers have become very common. Many of these products are high-fashion frames or are provided to fill specific market niches. Imported frames have greatly expanded the frame market and also have changed the way frames are distributed.

Companies selling imported frames have their own sales representatives, and these individuals call on private practitioners for orders just as they call on national chains. These companies bill practitioners directly and often offer discounts on quantity orders or provide contracts to use a specific number of frames per month, quarter, or year. Most optometrists work with a number of these direct sales manufacturers so that a wide variety of eyewear can be offered to patients; the number of representatives usually is limited to 3 or 4 individuals. Such an arrangement increases the opportunity for greater volume discounts and decreases the time spent reviewing products.

Because of the financial advantages of ordering ophthalmic materials and contact lenses in large quantities, private practitioners have formed "buying groups." Originally these groups consisted of optometrists, ophthalmologists and opticians who pooled their buying ability to negotiate with suppliers for the purchase of materials and supplies at discounted prices that approximated those being offered to national chains or very large practices. These buying groups have been quite successful, and some have expanded to regional size; a few have even been able to distribute their services nationally. Some are associated with optometric management consulting firms or national franchisers of ophthalmic materials. As an example, one of the largest, VWI, with over 5,000 members across the US is endorsed as a preferred buying group by many state optometric associations. Buying groups are differentiated by their vendor selection and amount of discount offered members who usually enjoy significant savings on items purchased for their practices. A few of the larger, more progressive "full-service" optical companies and laboratories are now negotiating with direct frame distributors to have the frames shown and sold by company representatives and billed at the lowest possible price to optometrists who order the frames through their laboratory. As single frames are needed for patients' orders, they are sent and billed to the laboratory, and the discounted cost, with a minimal handling charge, is passed on to the optometrist. The advantages of this process to optometrists are that the service is faster, there are fewer accounts to deal with, and frame materials can still be obtained at the lowest possible cost.

FRAME QUALITY, SERVICE, AND PRICE

Quality, service, and price are three principal concerns when purchasing frames for a dispensary. Since frames vary considerably with regard to material, style, and features, quality is related to the suitability of the product for the specific type of patient for whom it is intended to serve. For example, a child's frame used for a Medicaid patient would need to be more durable than a fashionable, rimless mounting because eyewear for Medicaid patients must typically last several years before it can be replaced. Since most frames are ordered to fill a patient's immediate needs, service in getting frames promptly when ordered is critical to patient satisfaction. If frames can be sent directly from the frame display to the laboratory, production time is decreased; likewise, service to the patient is increased. Patients do not understand back orders, whether for initial orders, parts, or replacement frames. Most frame manufacturers provide a warranty for frames, with the minimum period being 1 year. The manufacturer's policy should be understood before putting a new frame in the dispensary. Availability of frames must be satisfactory for both the initial dispensing and any follow-up services related to the frames.

There is a difference in the way that frames are priced by manufacturers. It is necessary to monitor what is paid for frames on a total and a per-unit basis to maximize value to patients, maintain fees for materials at a competitive level, and still have the dispensary make a financial contribution to practice overhead and income.

INVENTORY CONTROL OF FRAMES

Demographics of the practice population will dictate the makeup of the frame inventory. To obtain demographic data, both the current or projected patient base and the market area must be analyzed. Statistics on age, sex, and income provide a guide for the frame styles and price ranges that should be stocked. Optometrists (or their ophthalmic assistants) commonly make the mistake of purchasing products they like instead of what demographics tell them. Laboratory or frame representatives can help practitioners better understand the preferences and practices of a given patient population or practice area. This information and the anticipated volume of frame sales should serve as guides to inventory control.

It is necessary to have a plan for inventory control. The plan might be to achieve the goal of an inventory that turns over 4 times a year (although many optometric practice consultants support a seven times turn as a goal, which will require diligent and active management), an accepted industry goal for a reasonable return on the investment made in this part of a practice. Therefore, if the practice dispenses or plans to dispense 1,200 frames a year, the ideal inventory would be 300 frames. This number might be too low, however, to allow presentation of a satisfactory variety of styles to patients. It can be necessary to accept a three- or even 2 times turnover rate until the patient load increases to reach this 4 times turnover goal. Depending on where the practice is located, the competition from other ophthalmic providers, and the demographics of the practice, 400 to 700 frames might be necessary. Considering all of these factors, the inventory plan should establish the total number of frames that is appropriate for the practice.

Having established the inventory number, frames must further be divided by sex and age. If the total number of frames is to be 500 and 60% of the patients in the practice are female, 40% are male, and 15% require child-sized frames, frames should be stocked as follows: approximately 250 women's frames, 175 men's frames, and 75 children's frames. Approximately 60% of the frames should be in the "stable" category—frames that are basic to the market, have long-range stability, and consistent turnover. "Fads" or frames that are momentarily popular should be monitored closely. These frames are often shown and recommended by frame representatives. They usually are demanded by some patients but for an abbreviated period. Fad frames can prove not to be popular in a particular practice, and therefore it is wise to inquire about return policies before purchasing them. The dispensary should offer some frames for sports and avocational use. These frames help to meet the various ophthalmic needs of the patient population, which is the primary goal of having a dispensary in the office.

The selecting and purchasing of frames is often delegated to the person responsible for the fitting and dispensing of ophthalmic materials. Selecting and purchasing frames can be best performed when a plan is in place and the person assuming the responsibility understands the plan, the goals of the dispensary, and the need for inventory control.

Frame display management systems are critical, allowing staff and doctors to concentrate on patient care without overlooking the investment in product. Computer systems should be able to produce an aging report to track frame stocking. Most frame companies offer exchange of product that is not selling within 6 months of purchase, making this report vitally important to managing merchandise.

Most offices need an inventory log book or computer file to record the name or number of the frame, vendor, style, colors, sizes, price, and date received of all frames in stock. A log can be maintained on a rotary file and kept on or near the styling table. It allows the dispenser to have frame information at hand and also to determine which frame styles and types are being used most frequently. Computer files also may be used to maintain a frame stock inventory, but there must be a commitment by all staff members handling frames to keep the information up-to-date. The use of bar codes on frames also is used in some practices. This system works best when frames are being directly dispensed from existing coded stock.

In the past, because the variety of frames, styles, and colors was often limited and the investment in frame "samples" was much less, many optometrists ordered all frames from the laboratory rather than using frames from inventory. Since changes in the "samples" were much less frequent, as these frames became shopworn they were disposed of, with the loss being considered as a cost of doing business. In today's market, which requires a large number and variety of frames in most offices, if the frame selected by the patient is the proper size and color, it is usually removed from the display and dispensed to the patient. Dispensing from stock not only eliminates the cost of worn-out samples but also allows for replacement with newer frames, thereby providing a better service to patients. In addition, there is never a delay in obtaining a frame in stock. When dispensing from stock, frames should be available to replace those being sold. This reserve of frames can be as little as 10% of the frame stock, if the plan is to alternate the frames being shown. Some offices will obtain more depth in stock, particularly in the "stable" category, to replace frames removed for sale. There can be a cost advantage to buying some of these "stable" frames in quantity. If there is an in-office laboratory, a larger frame stock also can be required.

To obtain an ongoing control of inventory, it is necessary to compare what has been purchased to what has been sold. This process requires periodic review of the records of frame orders and sales. A computer makes the task easier, but it will still be necessary to take the time to make the comparison and take corrective steps as needed. A yearly count of the frame inventory certainly tells whether the buying plan has been followed, but the inventory can be out of control if not checked more frequently. Plans to stock inventory are based on dispensing patterns, which can and should be reviewed at least annually. The primary goal for the dispensing function of a practice is to meet the ophthalmic needs and wants of patients. The frames bought for this purpose are a critical part of providing total eye care and eyewear for patients.

The following "purchasing tips" should be kept in mind when buying frames:

- Practitioners should work only with vendors who will work with them.
- Practitioners should buy what sells rather than what they like.
- Purchasers should stick to a buying plan rather than buy the plan of a sales representative.
- Although a buying plan should be consistent, it should be periodically reviewed to determine whether results (e.g., returns, cancelled orders) might require a revision.
- If revisions are required, an alternative plan should be devised, followed, and monitored.

A method of acquiring frame inventory without having to invest business capital is through "consignment". Some frame manufacturers and distributors allow consignment in order to encourage the use of their particular brand. Payment is not made until and unless the item actually sells. The consignor retains title to the frames and can end the arrangement at any time by requesting their return. A specified period of time is commonly arranged, after which time if the frames do not sell the owner can reclaim them. The consignment process can be further facilitated by the use of VMI (Vendor Managed Inventory) and CMI (Customer Managed Inventory) applications. VMI is a business model that allows the vendor in a vendor/ customer relationship to plan and control inventory for the customer, while CMI allows the customer in the relationship to have control of inventory.

Supplying ophthalmic frames and lenses to patients is an important part of the optometric service. The use of quality materials and efficient laboratory service will help satisfy patients' expectations. Careful pricing of materials will keep the practice competitive.

QUALITY CONTROL

Standards for prescription dress eyewear have been promulgated by ANSI; impact resistance standards for dress lenses have been adopted by the Food and Drug Administration (FDA). Accepted lens tolerances can be found in ANSI Z80.1– 1999, the current version of the dress eyewear standards (Tables 15-1 to 15-4).

To ensure the quality of lenses being dispensed, in-office lens (and frame) inspection and verification must be performed. The most important considerations are lens power and centering. Attention also should be given to surface lens defects and the edge finish. Lenses at the tolerance limit should be rejected if they could cause a problem for the patient. Lenses beyond the tolerance limit should be routinely rejected. Procedures for the return of rejected lenses should be discussed with the laboratory, which should be willing to correct defects promptly. With the state-of-the-art, high-tech

TABLE 15-3

ANSI Z80.1–1999 Tolerance on Addition Power for Multifocal and Progressive Addition Lenses

Nominal Value of Addition Power	Up to 4.00	>4.00
Nominal value of the tolerance on the addition power	±0.12 D	±0.18 D

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TABLE 15-4

ANSI Z80.1–1999 Tolerances on Prism Reference Point Location and Prismatic Power

Vertical Prismatic Power (Prism Diopters)	Tolerance (Prism Diopters)
0.00 up to 3.375	±0.33
3.375 or over	1 mm difference

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TABLE 15-1

ANSI Z80.1–1999 Tolerances for Single-Vision and Multifocal Lenses *

		Tolerance on Nominal Value of the Cylinder (B)		
Meridian of Highest Absolute Power	Tolerance on Each Meridian (A)	0.00 Up to 2.00 D	>2.00 to 4.50 D	>4.50 D
0.00 up to 6.50	±0.13 D	±0.13 D	±0.15 D	±4%
>6.50	±2%	±0.13 D	±0.15 D	±4%

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* The distance refractive power imbalance between a pair of lenses in each meridian shall not exceed 2 / 3 of the sum of the tolerances for each lens for that meridian.

TABLE 15-2

ANSI Z80.1–1999 Tolerances on the Direction of Cylinder Axis

Nominal Value of the Cylinder Power	Up to 0.37 D	>0.37 Up to 0.75 D	>0.75 Up to 1.50 D	>1.50 D
Tolerance of the axis	±7°	±5°	±3°	±2°

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equipment most laboratories use to lay out and edge lenses, quality should not be a problem. If it is, another laboratory should be considered.

LABORATORY SERVICE

Patients expect a reasonable delivery time on their eyewear. The time required for an individual order will depend on the efficiency of the laboratory fabricating the eyewear and the method of delivery to the office, as well as lens features ordered by the patient. Assuming the laboratory has a good lens blank inventory, all orders should be ready to deliver within 48 hours. Lenses requiring special treatment or a coating that cannot be provided by the laboratory are the exception.

Surveys of laboratories reveal that the most common methods of delivery are United Parcel Service, the United States Postal Service (USPS), another overnight express, and the laboratory’s own delivery service. The best method for any one practice will depend on where the practice is located. Delivery of orders should be discussed with the laboratory representative, and the method providing the quickest and most consistent delivery time should be used. Alternative methods for “rush jobs” also should be explored. Considerable cost can be attached to the delivery of orders, and this cost will be passed on to the patient either directly or indirectly. This factor should be considered and discussed when meeting with a laboratory representative.

Availability of frames is an important measure of service to patients. The inability of a laboratory or frame vendor to provide frames on a timely basis can be measured by the number of “back orders” or the length of time needed to complete orders. The use of frame lines that cannot be obtained in a timely manner should be discontinued. Patients should not be shown the frames of suppliers who do not have a stock of frames adequate to service the account.

COMPARING PRICES FOR FRAMES

Quality of materials and service from laboratories should be the most important factors in obtaining eyewear for patients. However, price also is a consideration. There is competition between quality laboratories, and there is often a difference in how they price their materials.

Basic lens charges among laboratories are easy to compare because laboratories publish price lists. Add-on costs for certain lens powers, special base curves, oversize lens blanks, specific lens centering, prism, tints, coatings, and similar considerations are harder to compare. When these additional charges are added to the order by the laboratory, they must be passed on to the patient. Thus the practitioner must know how much these charges are and when they apply because they must be built into the fee schedule used for patients. If two or more laboratories provide services, the practitioner should compare the invoices for similar prescriptions and determine the most reasonable fee for services.

It is standard practice for laboratories to award discounts to practitioners who pay their laboratory bills promptly. Many laboratories also offer different prices based on the volume of orders. These business practices encourage optometrists to use a single source for all laboratory work. These advantages always should be discussed and explored with laboratory sales representatives.

Use of discounting techniques can make a big difference in the pricing of ophthalmic materials and in the contribution of the sales of materials to practice income and profit. Ideally, an internal accounting system (e.g., computer program) should be able to identify profit and cost centers in the practice. Comparing the cost for materials in the practice to average costs for the profession is one method of evaluating fees for materials and laboratory bills. Surveys of laboratory costs usually report their findings by comparing the cost of materials to the practice gross income. Over the years, surveys of optometrists have shown that laboratory bills (cost of goods sold) constitute 23% to 33% of gross income (11% frames, 11% laboratory bill, and 11% contact lenses). If the cost of materials exceeds $33,000 for every $100,000 of gross income the practice produces, the material costs are too high or the fees for materials are too low (see Chapter 28 for a further discussion).

UNDERSTANDING LABORATORY PRACTICES

Many laboratories have policy statements regarding the management of practitioner accounts. These policies should be reviewed with the laboratory representative. Some manufacturers will guarantee patient satisfaction—often in the form of warranties—to encourage the prescribing or dispensing of new products to patients (e.g., progressive addition lenses). The laboratory is given the responsibility of ensuring that these policies are properly administered. Does the policy mean the laboratory will remake an order in another lens material at no charge? Will a credit be given to the account if the new lens material is more expensive? Will a voucher or certificate be issued by the manufacturer? Practitioners should understand laboratory policies before using any products being presented.

Laboratory policies vary on remake orders and doctor errors. Any remakes that are necessary because the ophthalmic materials do not satisfy ANSI tolerances should be performed on a no-charge basis. Some laboratories will charge 50% or less on the remake if an order is transmitted incorrectly by the practitioner. The same policy often is offered if it is necessary to modify an order after the spectacles have been dispensed to the patient because of doctor error. These policies should be clarified when a practitioner first establishes a working relationship with a laboratory. They can make a difference in satisfaction with the laboratory and also in the cost of doing business.

PLACING LABORATORY ORDERS

Transmission of orders in an expedient, accurate, and complete manner is a joint responsibility of the practitioner and the laboratory. Before the advent of toll-free telephone numbers and facsimile transmission and in the days of dependable mail service, laboratory orders were mailed at the end of the day. The use of mail was more likely if the optometrist was in a different city or state than the laboratory. Many laboratories still encourage the use of mail since written orders can be processed as they are received, when personnel are available. Mail delivery also reduces the expense of needing staff to take phone orders. The advantage of telephone orders is that they enable the laboratory to maintain personal contact with the optometrist or office staff while ensuring that all information to fabricate the eyewear will be received. In addition, laboratories with a computer inventory of frames can alert the caller to any possible delays in the order or can request that the frame be sent if it is not in stock.

Currently, the preferred method for communicating laboratory orders is by facsimile transmission and Internet access. Although the use of facsimile transmission saves staff time at both the office and the laboratory, it also requires that orders be complete and legible. Ordering by the Internet avoids legibility issues, and the transmission is virtually immediate.

There are times when UPS, the US mail, or an express service might be required for an order, for instance, when using a laboratory that does not supply frames or when using a large number of frames from other vendors. In these instances, the most expedient way to get the order completed is to send the frame, from stock, to the laboratory. Ordering the frame from another vendor and having it sent directly to the laboratory also might be necessary. However, if the frame received is the incorrect color or size, the error cannot be recognized by the fabricating laboratory. A practitioner must inspect and verify orders before the eyewear is dispensed to patients and the inoffice inspection by the staff should detect any error before the eyewear is dispensed to the patient.

CONCLUSION

The dispensing of eyewear has been the basis of optometry's unified service to the public. Although there are many challenges in carrying out this important professional function, the selection and use of efficient laboratories and ophthalmic suppliers will contribute greatly to making this a very satisfying part of practice.

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