Pilot Study of Quality and Standards in Filling Spectacle Prescriptions

HAROLD L. LIGHT, M.S.S., A.C.S.W., and JESSE ROSENTHAL, O.D.

COMPLAINTS of patients of the Gouverneur Ambulatory Care Unit of New York City about new spectacles led personnel to question the quality of care supplied by community resources filling patients' optical prescriptions. After casual observation of patients' complaints from December 1, 1961, to January 31, 1962, in February 1962 the optometric staff undertook a study of such care in conjunction with the social service division of the unit.

The Gouverneur Ambulatory Care Unit is a facility supported entirely by city funds but administered and staffed by Beth Israel Hospital, a voluntary institution. It provides outpatient care to a designated community within New York City from the site of a public clinic approximately 2 miles distant from the hospital. The facility was established on December 1, 1961, as a result of an affiliation between the hospital and the New York City Department of Hospitals. Unencumbered by tradition and fixed patterns and attitudes, the unit has been able to experiment freely in methods of bringing high-quality care to the medically indigent.

Study Methods

For study purposes, after the patients who came into the Gouverneur Ambulatory Care Unit for refractions were examined, prescriptions were written in duplicate. The social service division retained the duplicate prescription. The prescriptions included, besides the usual data, certain other detailed specifications: (*a*) patient's interpupillary distance for far and near vision, (*b*) corrected curve lenses, (*c*) case-hardened lenses, if needed, (*d*) type of bifocal, if prescribed, (*e*) type of absorptive filter, if needed, and (*f*) any additional specific instructions required.

The patient was referred for spectacles to one of the three resources the Gouverneur unit was using at that time. One of these was a private organization with whom the clinic had an agreement as to costs and quality of care. The second source was a municipal agency with a statutory obligation to fill prescriptions by contractual arrangement with a dispensing optician. The third source was a voluntary agency which provided funds to pay local opticians for spectacles needed by school-age children unable to purchase their own glasses. A patient was also free to obtain spectacles at a source of his own choosing. Before the patient left the unit, he was given an appointment to return as soon as he received his spectacles.

During the return visit, the patient's spectacles were compared to specifications indicated on the duplicate copy of the prescription. Lenses and frames were inspected for imperfections, and adjustment and size of frame were rated as "good," "fair," or "poor." Calipers, a rule, lensometer, and polariscope were used for the inspection. The optometrist recorded all inspection results. The social service department also interviewed the patient during the return appointment about the treatment he had received at the optical dispensing source and

Mr. Light is director of the social service department of the Gouverneur Ambulatory Care Unit of Beth Israel Hospital, New York, N.Y. Dr. Rosenthal is senior optometrist of the Gouverneur Unit with specific supervisory responsibility assigned by the Optometric Center of New York.

noted the waiting time for receipt of the spectacles.

A heating unit was obtained so that errors of adjustment and lens orientation could be rectified. Staff optometrists performed the inspections and alterations of fit. Spectacles with errors which could not be corrected in the clinic with its limited instruments were returned to the dispenser.

To determine whether a pair of spectacles was to be designated as acceptable or unacceptable, the standards and tolerances of the American Optometric Association and the department of purchase of the City of New York were used. If standards and tolerances of the two agencies did not agree, the higher tolerance was used. Specifications of the two agencies varied little. Since these organizations gave no specifications for center thickness for case-hardened lenses, the standard of the American Standards Association was used. The clinics did not supply copies of the standards and tolerances it used to the dispensing agencies. These standards were as follows:

Lens power (diopters)	*Power tolerance (diopters)*
0–3.00	±0.06
3.25–11.75	±.12
12.00–15.00	±.18
More than 15.00	±.25

Cylinder power (diopters)	*Axis tolerance (degrees)*
0.12–0.25	±5
0.37–0.62	±3
0.75–1.12	±2
More than 1.25	±1

Prism power	*Power tolerance (prism diopters)*
Vertical	±0.25
Horizontal	±.50

Surface inspection. No waves, pits, scratches, grayness, watermarks, striae, or bubbles visible to the naked eye.

Size. To be within 1 eye-size of proper eye size and to be proper bridge size.

Fit. Accepted spectacles to have fit judged as good, fair, or poor by inspectors.

Case-hardened lenses. Must show maltese cross when viewed between crossed polaroid lenses and have center thickness of 3.0 to 3.8 millimeters except in high plus powers.

Bifocal segments. Must be symmetrical upon visual inspection while patient is wearing spectacles.

Table 1. Results of inspection of spectacles dispensed in fulfillment of prescriptions written at the Gouverneur Ambulatory Care Unit, New York City, February–August 1962

Spectacle source	Spectacles inspected	Spectacles rejected	
		Number	Percent
Total	123	64	50.4
Source A	25	17	68.0
Source B	18	14	78.0
Gouverneur source	80	33	41.0

Results

During the period of study, February to August 1962, 500 prescriptions were issued and 123 inspections made; spectacles of 377 persons were not checked because the patients failed to return for recall visits.

Table 1 shows the distribution of prescriptions filled under the auspices of three agencies. The greatest number was filled through the Gouverneur unit's spectacle resource. From all three suppliers the percentage of unacceptable prescription service was high. None of the patients who received spectacles through private sources returned for a recall visit, a result probably reflecting their confidence in their dispensers.

Table 2 shows the basis for rejection of spectacles. Many spectacles were rejected because of more than one error. Thus the rejection figures in table 2 exceed those in table 1. Some of the more significant results not shown in tables 1 and 2 are:

1. The large percentage of spectacles not case-hardened although so ordered indicates laxity by the dispensing agents. This laxity was justified by the dispensing agent on the grounds that the allowances provided by source B were insufficient to provide what was ordered. (During 1963 source B increased its allowances. This increase may have resulted in part because Gouverneur representatives called this shortcoming to the attention of source B's administrative personnel.)

2. While not documented, per se, dispensers evidently often used outmoded frames. Inevi-

tably this practice brought the patient physical and emotional discomfort.

3. A number of glasses were dispensed without being fitted or adjusted by the dispensing source.

4. Spectacles made by all three of the dispensing agencies investigated in this survey fell short of accepted standards. Results of the study led the Gouverneur Ambulatory Care Unit to sever its connection with the private source it had been using and employ a different dispenser.

5. The Gouverneur source and source B uniformly provided spectacles within 1 week's time after receiving the prescription. Source A, on the other hand, averaged a 6-week waiting period—with some delays of 2 months—in direct violation of their own contractual agreement. This fact was called to the attention of the dispensing sources.

Conclusions

A clinic issuing prescriptions for spectacles cannot consider its patients properly cared for merely by that issuance. The clinic's responsibilities continue, especially when it recommends a dispensing agency for the spectacles. Judgment as to adequacy of the lenses prescribed cannot rest with the patient since errors in filling the optical prescription may not cause him any immediate discomfort or difficulty. On the other hand, a poor fit can render a prescription worthless or result in a patient's not wearing glasses at all. When other agencies are responsible for supplying or paying for spectacles, the clinic has an obligation to keep these agencies informed as to the quality of prescription fulfillment. This responsibility includes notifying the agencies of any long periods of delay between initial frame measure and final dispensing which violate contractual agreements.

Table 2. Basis for rejection by the Gouverneur Ambulatory Care Unit, New York City, of spectacles supplied patients through three sources, February 1962

Errors	Total	Gouverneur source	Source A	Source B
Power	16	10	6	0
Cylinder axis	37	18	13	6
Vertical prism	10	4	4	2
Not case-hardened	9	1	0	8
Wrong size frame	9	1	3	5
Poor fit	7	4	3	0
Segment height	1	1	0	0
Base curve	5	4	1	0
Distance between lens centers	8	2	4	2
Total	102	45	34	23

Services of all three spectacle dispensers studied fell short of existing standards, but our results suggest that existing standards may be too stringent or unrealistic. Although the dispensers became aware that their work was being inspected, no improvement in quality was observed during the course of the study. The results show that continuing investigation of the quality of optical services given the indigent is necessary. They also point up the need for a fuller study of such services than this pilot effort represents.

Recommendations

In the light of this study, we recommend that existing standards for spectacle dispensing be reviewed and that prearranged standards be agreed upon between clinics and dispensers before patients are referred. Following such a review, some continuing evaluatory process needs to be established and maintained if high-quality service is to be provided. Other health facilities, whether their arrangements are similar to those of the Gouverneur outpatient unit or not, would do well to examine, from the standpoint of their own standards, the quality achieved in dispensing the spectacles they prescribe.

Summary

A study was conducted of the quality of spectacle prescriptions dispensed to indigent patients of the Gouverneur Ambulatory Care Unit, Beth Israel Hospital, New York City. An optometrist checked the spectacles against a duplicate of the prescription, inspected lenses and frames for imperfections, and rated adjustment and size of frame.

During the 6-month study period 123 inspections were made. More than 50 percent of all spectacles supplied through three different

sources were rejected. Errors included cylinder axes, power, vertical prisms, size of frame and distance between lens centers. Frequently spectacles were not case hardened as specified.

In general, the results indicated an incompatibility between the spectacles dispensed and the conventionally accepted standards which were applied in checking them. This would seem to indicate a need for revision of the standards or assumption of increased supervisory responsibility by the health agency supplying the prescriptions, or both.

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