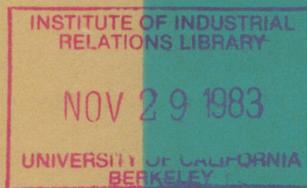


Statistics of Labor-Management Relations:

*Proceedings of a Conference Held at
Asilomar, Pacific Grove, California
May 12-13, 1955*



Sponsored by

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Social Science Research Council

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FOREWORD

1

The Pacific Coast Committee on Social Statistics was established in 1941 and undertook the following functions:

1. To serve as a clearing house for statistical projects on the Pacific Coast and for proposals for collecting new data and reorganizing old data.
2. To pass on to the appropriate agencies suggestions for making their data more serviceable to the social statisticians.
3. To serve in an advisory capacity, when requested, to agencies and individuals working on problems in the field of social statistics.
4. To call conferences to consider problems in specific segments of the field.

The Committee has sponsored numerous conferences and has devoted much attention to bringing together university personnel and representatives of public and private agencies concerned with the compilation and use of social statistics. Formal conferences previously held have dealt with such subjects as population trends, measurement of postwar socioeconomic trends, sampling procedures, intercensal population estimates, problems of response error in income surveys, morbidity statistics, social welfare statistics, and problems in the measurement of regional income. To help bring about closer working relations on the Pacific Coast between mathematical statisticians and social scientists using statistical tools, the Committee from time to time has held informal conferences on statistical techniques.

To provide research workers, administrators, and others interested in social statistics with information concerning recent and current work in the field, the Committee prepared two inventories of source materials and research projects. The first inventory was published in 1944 and the second in 1952.

The Conference on Statistics of Labor-Management Relations was co-sponsored by the Institute of Industrial Relations, University of California, Berkeley. The Committee is indebted to the Institute for making the printed proceedings of this conference available.

MAURICE I. GERSHENSON, *Chairman*
Pacific Coast Committee on Social Statistics
Social Science Research Council

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The developments of the past decade in the field of industrial relations have created a host of new problems for the statisticians. With the coming of age of mature collective bargaining, and the enormous growth in the number and complexity of union contracts, the need for reliable statistics relating to the provisions of these contracts has become acute. The spread of fringe benefits has meant that indices of wage rates or earnings alone provide only a partial picture of what is happening to workers' incomes. Furthermore, representatives of labor, management, and the general public who are increasingly involved in the negotiation of health and welfare plans and other specialized provisions of collective bargaining agreements need reliable and up-to-date information summarizing prevailing practices.

The literature relating to statistical problems in this specialized field is very scanty. For this reason the Institute of Industrial Relations welcomes the opportunity of making available in published form the valuable group of papers presented at the *Conference on Statistics of Labor-Management Relations* held at Asilomar in May, 1955. The conference was sponsored by the Pacific Coast Committee on Social Statistics of the Social Science Research Council and co-sponsored by the Institute of Industrial Relations.

Pioneering work in the development of reliable statistics relating to union membership and collective bargaining agreements has been carried out on the Pacific Coast, especially in the Division of Labor Statistics and Research of the California Department of Industrial Relations under the able leadership of Maurice Gershenson. The papers describing this work include a great deal of material that is not available elsewhere in published form. But the experts participating in the

conference were not drawn exclusively from the Pacific Coast. There are papers on the experience of the United States Bureau of Labor Statistics in developing data on union membership and wage supplements and on the efforts of the New York State Department of Labor in connection with mediation statistics. The publication of this highly useful collection of material should make a valuable contribution to the improvement of statistical techniques in a new and rapidly developing field.

ARTHUR M. ROSS, *Director*
Institute of Industrial Relations
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CONFERENCE ON STATISTICS OF LABOR-MANAGEMENT RELATIONS

Asilomar, Pacific Grove, California

May 12-13, 1955

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1

STATISTICS OF UNION MEMBERSHIP

Chairman:

MAURICE I. GERSHENSON, California Department of Industrial Relations, San Francisco

Papers:

National Statistics of Union Membership

H. M. DOUTY, United States Bureau of Labor Statistics, Washington, D.C.

Estimating Union Membership in California

HELEN NELSON, California Department of Industrial Relations, San Francisco

Measuring with a Broken Yardstick

IRVING BERNSTEIN, University of California, Los Angeles

NATIONAL STATISTICS OF UNION MEMBERSHIP

H. M. DOUTY

Bureau of Labor Statistics, United States Department of Labor

Statistics of membership are useful as one indication of the strength of the trade union movement. Over periods of time, membership, particularly in relation to the size of that portion of the labor force "susceptible" to union organization, provides a measure of the trend of union growth.¹

This paper deals primarily with the experience of the Bureau of Labor Statistics in recent years in obtaining membership data from national and international unions and in estimating the total membership of unions with headquarters in the United States. Some attention should first be directed, however, to certain problems of concept and definition.

Dues Payment as the Membership Criterion

Trade unions are voluntary organizations and make their own membership rules. The basic unit of union organization is the local. Most unions are anxious to recruit members, and requirements for admission, as set forth in union constitutions, are usually simple. In union shop situations, the process is virtually automatic, since union membership within 30 days is usually stipulated as a condition of employment. The membership records of national unions are necessarily based on the reports of the secretary-treasurers of the local unions or other subordinate bodies.

A basic condition for the maintenance of union membership is the payment of dues. Most unions, however, will continue to count as members those who, for specified periods, are in arrears in dues pay-

¹Leo Wolman, "Concentration of Union Membership," *Industrial Relations Research Association Proceedings* (1952), pp. 214-219.

ments. For example, the constitution of the Textile Workers Union provides that any member "four months or more in arrears in payment of dues, fines, or assessments may be expelled and dropped from the rolls . . .," unless the local union, joint board, or subordinate organization provides a shorter period. A member is not dropped from the rolls of the Carpenters until he is six months in arrears. The period is three months for the Machinists and twelve in the Mine Workers. Clearly most unions at any particular time have some members in good standing who are delinquent in dues payment. It was stated some years ago that the average number of members in good standing in the Machinists' Union exceeded average dues-paying membership by 14 per cent.²

In addition to temporary dues delinquency, there are other situations in which union members may be counted in good standing without paying dues. For example, most unions make special provision for unemployed members and for members on strike. Thus, the Steelworkers exonerate from the payment of dues members who have not worked five days in any one month through no fault of their own. The Machinists make provision for unemployment and strike stamps. In some unions, such as the Miners, unemployed members are required to pay dues, but at a reduced rate. The secretary-treasurer of the United Automobile Workers (CIO) reported to the 1955 convention that the average number of dues-paying members during 1954 was precisely 1,239,171.³ It was stated that actual membership, including unemployed members and members on strike, was in excess of 1.5 million.⁴ On the basis of the 1.5 million figure, it would appear that actual or good-standing membership, in the union view, exceeded dues-paying membership by approximately 17 per cent.

There are a number of other membership categories for which special treatment with respect to dues is provided. For instance, retired and disabled members of the Miners, who receive aid, including workmen's compensation, are expected to pay nominal dues. Retired members of the Machinists receiving pensions or annuities may be issued retirement stamps at nominal rates, thus preserving their death benefit rights.⁵ In general, unions providing welfare benefits usually make some provision for maintaining retired members in good standing.

² Albert S. Epstein, "Union Records as Statistical Sources," *American Statistical Association Annual Meeting* (1948).

³ UAW-CIO Convention, *Report of Secretary-Treasurer* (1955), p. 5. For 1953, average dues-paying members numbered 1,418,117.

⁴ UAW-CIO Convention, *Proceedings*, sixth day (1955), p. 4.

⁵ Retired members of some unions are maintained in good standing without pay-

Union membership, in simple terms, is not considered by most unions to be identical with current dues-paying membership, but rather with the number of members in "good standing." At the same time, membership can almost always be brought into relationship with the obligation to pay dues. That is, a member may be in good standing even though he is in arrears in dues payment, but only for some limited period determined by the union. He may be in good standing even though, temporarily, his obligation to pay dues has been waived by the union, as in the case of out-of-work members or members on strike. He may be considered in good standing even though he has been granted a special dues status or has been exempt from dues, as in the case of retired workers in some unions.

This brief review of the relationship between union membership and the obligation to pay dues seems worthwhile, since the determination of "dues-paying" membership is what most studies in this field seek to achieve. Some definition of membership is obviously necessary; in the case of unions, the dues test is a useful and objective criterion. For the reasons noted above, however, the interpretation of "dues paying" as applied to membership may well vary among unions. Account needs to be taken of the rules the unions have established for themselves as to the relationship between dues payment and the "good standing" of members.⁶

Other Factors Affecting Membership Reporting

Membership statistics are, in a sense, union property. They are often viewed as having value in the internal politics of the labor movement and as affecting the prestige and influence of unions in their relations with employers and with the community at large. For these reasons, "the reported figures of membership are often quite other than prevailing conditions and general knowledge would lead one to expect."⁷

This situation is generally associated with inflated reports from unions experiencing declining membership. However, expanding unions may, for some purposes, understate their membership. Both tendencies affect the AFL per capita series. The American Federation of Labor publishes annually figures on the average number of members for

ing dues. It was reported to the 1955 UAW-CIO convention that 42,800 members were retired and that "these members enjoy full membership privileges and are exempt from paying dues."

⁶ A simple division of aggregate per capita payments to a national union by the normal per capita tax would appear typically to result in an understatement of membership in the sense in which the union understands that term.

⁷ Leo Wolman, *Ebb and Flow in Trade Unionism* (New York: National Bureau of Economic Research, 1936), p. 5.

whom its affiliated unions paid the stipulated per capita tax.⁸ An examination of the Federation series will show that many unions pay on the same number of members for considerable periods. Since the membership of a union, however defined, will almost inevitably show some year-to-year fluctuation, the precise accuracy of these reports to the Federation is open to question. In terms of membership statistics, such reporting is not serious as long as the reported figure is close to the actual figure. There are instances, however, in which unions appear to have paid per capita on grossly inflated membership. The example usually cited is the United Mine Workers during the 1920's. On the other hand, unions may pay per capita on less than their paid-up membership. The Teamsters increased by more than half a million the number of members for whom per capita was paid between 1953 and 1954. It seems unlikely that there was an increase of this number in actual Teamster membership during this one-year period.

At least in recent years, the Federation's per capita series appears to have understated the combined membership of its affiliated unions. Unlike the Federation, the CIO has not published a comparable series on the average number of members for whom its affiliates have paid per capita. Over-all per capita figures can be computed from national CIO financial statements. It is not possible, of course, to derive individual union reports from these statements.

It seems clear that both the Federation's per capita series and a corresponding series computed from CIO financial data have to be used with great caution in assessing either the actual membership of the constituent unions of these two trade union centers or membership trends. In addition, the membership of unaffiliated national or international unions is not reflected in any way in these series.

BLS Work on Union Membership

The Bureau of Labor Statistics became involved in the regular collection of union membership statistics less than a decade ago through its *Directory of Labor Unions*. The *Directory* lists trade union centers, national and international unions, and state labor bodies. The first *Directory* appeared in 1943; it is now issued at approximately two-year intervals, with one supplement between issues. The 1953 *Directory*⁹ has been out of print for several months; the 1955 edition will go to the Government Printing Office within the next few weeks.

⁸ The constitution of the Federation provides that "a per capita tax . . . be paid upon the full paid-up membership of all affiliated bodies. . . ."

⁹ *Directory of Labor Unions in the United States, 1953*, Bureau of Labor Statistics Bulletin no. 1127 (Washington: 1953).

The *Directory* seeks to list every national or international union.¹⁰ A questionnaire is sent to each such union, whether affiliated with one of the major federations or independent, of which the Bureau has record. Information on union membership was first requested in 1948. For both the 1948 and 1950 *Directories*, the questionnaire asked simply for a figure representing average dues-paying membership.

The questionnaire for the 1953 *Directory* was sent out in 1952 and requested dues-paying membership for the calendar year 1951. A number of additional items of information were solicited, however, to aid in the interpretation of the membership data. Specifically, the unions were asked to check whether the following categories were included or excluded from the membership count submitted to the Bureau: (1) unemployed; (2) involved in work stoppages; (3) armed forces; (4) apprentices; (5) retired and inactive workers.¹¹

The membership items in the questionnaire for the 1955 *Directory* were designed to elicit some additional information. The unions were asked for an "annual average dues-paying membership count" for two years: 1953 and 1954. As in the previous questionnaire, the unions were asked to check whether specified categories (unemployed, etc.) were included or excluded; in addition, if excluded, an estimate of the average number of members in each excluded category for 1954 was requested. The questionnaire stated that these estimates would not be shown for individual unions. For the first time, the unions were asked to indicate the approximate number of members in areas outside of the continental United States: Canada, Hawaii, Puerto Rico, Alaska, Canal Zone, or other.

About 80 per cent of the more than two hundred national and international unions entered membership information on the two most recent questionnaires. A somewhat smaller proportion checked whether the specified membership categories were included or excluded from the reported figure for average annual dues-paying membership. It is clear that many unions included members in a special dues status, as described earlier in this paper. For the 1953 *Directory*, for example, 53 unions indicated that retired and inactive workers were included; 79 that they were excluded; 83 made no response to this point. Seventy-one unions reported that unemployed members were included; 64 that they were excluded; 80 made no reply. The fact must be emphasized

¹⁰ Independent or unaffiliated unions were included in past *Directories* if they met modest standards as to number of locals and collective bargaining agreements. In 1953, 73 such organizations were listed. For the 1955 *Directory*, an interstate test was added.

¹¹ *Directory of Labor Unions, 1953*, Appendix A, p. 42. Information was also requested on women as a proportion of total membership.

that union policy on these membership categories is by no means uniform. Some unions, for example, make no special membership provision and presumably have no records of retired or inactive members. With respect to some categories, union situations will differ markedly. Thus, unemployment among post office clerks must be comparatively rare; with coal miners it appears to be endemic.

In the 1953 *Directory* and in the forthcoming edition, the membership shown for individual unions is that reported by the unions.¹² Estimated membership is not shown for unions failing to report membership, except for the few AFL unions in this category for which per capita payments to the Federation are used.¹³ The figures shown include any membership a union may have in Canada or in United States possessions. For the forthcoming *Directory* we will have estimates on the number of United States unions outside of our continental boundaries.¹⁴

Preparation of National Membership Estimates

The Bureau estimates of the total membership of unions with headquarters in the United States are based largely on the reports of the national and international unions for *Directory* purposes. The process substantially is as follows:

1. The membership reported by each union is scrutinized and is typically used in the total estimate unless other sources—AFL per capita payments, union convention reports, statements of union officials, our own knowledge of developments affecting the union—strongly suggest that revision should be made.

2. For the comparatively small number of unions that do not report membership, estimates are made. For our forthcoming *Directory*, only 12 of the 140 AFL and CIO unions failed to report membership figures for 1954. A greater problem was presented by the independent unions, since 17 out of 51 refrained from reporting membership. In these cases, all possible sources of information are utilized in the preparation of estimates, including again what knowledge the Bureau itself possesses of the activities and organized strength of the individual unions in question.

The 1953 *Directory* contained a union membership estimate as of

¹² For individual union listings in the *Directory*, a minimum of editing of the membership figures is undertaken.

¹³ No figures were shown in the 1953 *Directory* for unions that evidently reported collective bargaining coverage rather than membership and failed to submit a revised report.

¹⁴ The Canadian Department of Labour for years has issued statistics on the number of Canadian members of unions with headquarters in the United States.

the beginning of 1952 of between 16.5 and 17 million. The membership of AFL unions was estimated at approximately 9.5 million, substantially in excess of the number of members on whom the affiliated unions paid per capita. Subsequent developments suggest that per capita payments did, in fact, materially understate AFL membership. We estimated the membership of CIO unions at approximately 5 million. The membership of independent unions was estimated at between 2 and 2.5 million.

We are still working on the 1954 estimates to be incorporated in the forthcoming *Directory*. Our preliminary count of total membership, including Canadian membership, of all national and international unions with headquarters in the United States indicates that the final figure will fall between 17 and 18 million.

The Bureau's membership estimates are probably in excess of dues-paying membership strictly interpreted. For many unions, categories of members in "good standing" but temporarily in arrears, exonerated, or subject to reduced dues are included. As pointed out earlier, unions usually make specific provision for one or more of these several categories of membership and each category can typically be brought into relationship with the obligation to pay dues. There is one area of union membership about which very little is known; that is, the membership of unaffiliated unions confined to single establishments or companies. We hope to begin a study of the extent of such organizations in the near future.

The Bureau believes that its work in the field of union membership estimates is maturing and that continued cooperation from the labor movement will permit further improvements in the estimates.

ESTIMATING UNION MEMBERSHIP IN CALIFORNIA

HELEN NELSON

*Division of Labor Statistics and Research, California Department
of Industrial Relations*

Although California's program of collecting and issuing information on union membership may be unique, it is not new. We are now preparing to distribute the sixtieth annual Organized Labor Questionnaire to all union locals in California and analysis of these returns will

be the basis for our estimate of union membership in California in 1955.

To the best of our information, only one other state has a program in any way similar—Massachusetts.¹

It would be interesting to stop here and speculate on why no other states conduct a similar program, but perhaps it will be more purposeful to describe how and why California measures union membership in the state each year. The answer to why was given in 1900 by F. V. Meyers, Commissioner of what was then the California Bureau of Labor Statistics, when he wrote,

. . . in no State in the Union are wage earners more alive to the importance of intelligent organization as a highway to better things for the wage workers; and this prompts me to believe that the data regarding labor organization in California, lacking in completeness though it may be, will in some degree fill a heretofore marked vacancy in the economic and vital statistics of the community.²

Mr. Booth also tells us, in one paragraph, how union membership in California was estimated in 1900.

It has been noted that of the 217 labor organizations in the State, 136 gave returns. Of the 136, it appears . . . that 120 reported membership as of May 31, 1900. For the number thus reporting, an aggregate membership of 17,090 is given, which, roughly approximating, justifies a belief that there are, in round numbers, not less than 30,000 wage earners within the State who are members of labor organizations.

As statistical procedures became more refined, apparently Commissioner Booth's successors, instead of using more refined methods of estimating, became more cautious, and for the next fifty years did not venture any estimates. The aggregate membership of those locals which reported was published, but no attempt was made to estimate total union membership in the state on the basis of the incomplete returns.³

Present Method of Estimating

Our present system of estimating total union membership for California began five years ago, in 1950, and last year we made our first real estimates for local areas within the state. This accomplishment is less of a tribute to the statistical estimating techniques which had been de-

¹ *Directory of Labor Organizations in Massachusetts*, Department of Labor and Industries, Part I of *Annual Report on Statistics of Labor*.

² *Ninth Biennial Report*, California Bureau of Labor Statistics (1899-1900), p. 84.

³ *Union Labor in California, 1949*, Department of Industrial Relations.

veloped in the intervening years than to the confidence and interest this program engendered among the union locals. Our success in estimating total union membership in the state and measuring its annual change rests primarily upon our success in getting reports from union locals. Last year we mailed questionnaires to more than 3,400 union locals and received replies from 94 per cent. We were required to estimate for only 6 per cent. According to our estimates, 98 per cent of the total union membership was actually reported by the responding locals. Of the total figure of 1,566,000 union members in California in 1954, our estimates accounted for only 35,000.

No other mail questionnaire we know of, in any field of information gathering, has achieved such a high response.

As you can see, we have approached the problem of estimating union membership by maximizing the number of returns. In 1950, when we set out to make our first estimate, we redesigned the questionnaire form and deleted every question not absolutely essential to identifying the local and its membership, until only a half dozen simple questions were asked. But we retained enough of the appearance of the previously used questionnaire to give it continuity in identification with those of earlier years and to make it readily recognized and familiar.

We sent announcements of our effort to obtain total membership figures to all central labor councils and issued a press release to all labor papers. These announcements were timed to precede, by a few days, the mailing of the questionnaires to union locals.

We mail the questionnaire on July 1 of each year and then send two follow-up requests to those that have not responded—one three weeks after the first request and another after three more weeks have elapsed.

Last year we received replies from about 50 per cent of the locals on the first request; 30 per cent on the second request; and 10 per cent on the third. By telephone calls and letters to international unions and regional representatives, we were able to obtain replies for an additional 4 per cent, leaving the membership of only 200 locals to be estimated.

We estimate membership for each of the nonreporting locals individually. We base our estimate on the most reliable information about their membership available to us, such as the Convention Proceedings of the California State Federation of Labor and the California State Industrial Union Council. We sometimes get an estimate from a conciliator, a deputy labor commissioner, or a central labor council official in the community who might have knowledge of the approximate membership of a local.

Area Estimates

Having the estimate of total membership for the state as a whole pretty well under control, we concentrated last year on improving our area estimates.

As you no doubt know, there is much variation among locals in their geographic areas of jurisdiction. Some unions, such as the Post Office Clerks, have a local in almost every city or town in the state. Other unions have a local in each large town, county, or county group. Some have one local for all members in northern California and another in southern California. Many times a local includes portions of other states as well as California. This situation makes it difficult to estimate the total number of union members in any given area of the state, even if the membership of each local in the state is known.

Keeping uppermost the need to get in a total membership report from as many locals as possible in order to make a reliable state estimate, we side-stepped this problem of area estimates for four years. In our area tabulations prior to 1954 we reported for each of the ten economic areas of the state the membership of those locals whose jurisdictions were confined to the economic areas. For example, in 1953 we reported "Los Angeles Metropolitan Area locals [those with jurisdiction confined to Los Angeles and Orange counties] accounted for 38 per cent of all union members in the State in July 1953—594,200."⁴

That year 12 per cent of California's union members belonged to locals with considerably wider geographic jurisdiction than any one of the ten areas. Of these, we reported as follows:

As it was not possible from the information provided to prorate the members of these locals by area, they are not included in the totals for the individual areas. There were 27 locals with 44,300 members which had jurisdiction extending over all or most of the State. Fifty-one locals with 72,500 members had jurisdiction over all or most of southern California, and 58 locals with 66,000 members covered all or most of northern California.⁵

The omission of these members from the individual areas, however, resulted in a serious understatement of membership in each particular area.

In 1954, for the first time, we tackled this problem of estimating for areas within the state. Since it was a small minority of all the locals which presented difficulties, we did not want to add to the questionnaire any questions that applied to only a few locals. Neither did we want to risk discouraging any of the large interarea locals from responding. Their membership reports are necessary for a reliable state

⁴ *Union Labor in California, 1953*, Department of Industrial Relations, p. 9.

⁵ *Ibid.*, p. 10.

total. Our strategy in getting an area breakdown of the membership figures was as follows.

We flagged each local which on the previous year's questionnaire had reported a jurisdiction that crossed the boundary lines of two or more of the ten economic areas and which also had reported more than 100 members. (Those with fewer than 100 were omitted since these small locals could not greatly affect the final results.)

As soon as a completed questionnaire was received from these locals, a follow-up letter was sent requesting a supplementary report of membership by area. The results were, on the whole, very good. One reason, possibly, is that the locals receiving the follow-up requests were usually large and had sufficient office staff to compile the necessary figures. Our objective was thus achieved by questioning only a relatively few locals for which we actually needed the data, without adding this question to the form sent to more than 3,400 locals.

As a result of securing the area membership breakdowns, we were able to publish an estimate of the total union membership in each area of the state. On this improved basis, the total membership estimate for Los Angeles Metropolitan Area, for example, was 688,300 in 1954, or 44 per cent of all union members in the state.⁹

Industry Estimates

The next improvement we would like to be able to make in our union membership figures is in *industry* data. We now publish figures for 17 very broad industry groupings. We lump together such broad groups as "metals and machinery," "petroleum, chemicals, and rubber," and all trade, both retail and wholesale. The reason for this has been, chiefly, that many locals have members in several different industries. Building trades locals very often have members in manufacturing as well as in construction. Teamsters and machinists cut across many industry lines. The best we have been able to do so far is to assign all of the members of each local to the one industry in which the *majority* of the members are employed. As a result, we undoubtedly overstate union membership in some industries, notably construction, and understate it in others.

The industry problem is similar to the area problem, but in many ways it is much more difficult to solve.

Definition of a Union

Only a few years ago we came to grips with the problem of defining a union. An employee organization which receives our Organized

⁹ *Union Labor in California, 1954*, Department of Industrial Relations, p. 11.

Labor Questionnaire and has its membership included in the annual estimate of union membership in California now meets one of the following criteria:

1. Unions affiliated with the A. F. of L. or the C. I. O. or having their origin in the A. F. of L. or C. I. O.
2. Independent railroad brotherhoods.
3. Unaffiliated unions having written collective bargaining contracts with *two* or more different employers.
4. An unaffiliated union having a written contract with a single employer, and having 1,000 or more members (either in California or nationally and covering the employer's operations in more than one locality in California).

Examples of organizations meeting the latter criterion are Western States Service Station Employees, Federation of Westinghouse Independent Salaried Unions, and the Federation of Women Telephone Workers in Southern California.

These criteria differ in some respects from those used by the United States Bureau of Labor Statistics,⁷ though we are glad to see that the differences between theirs and ours are narrowing. Our criteria also differ from those used by Massachusetts, at least in one respect. Massachusetts, according to their recent report, excludes locals of letter carriers and post office clerks since, according to an explanatory note, they "have no bargaining power in and of themselves."⁸

Definition of a Union Member

We accept each local's concept of membership. Concepts and practices vary among the internationals, and we do not inquire whether a membership figure reported to us represents "paid-up" members, "active" members, or members "in good standing." Nor do we inquire whether it includes members operating their own businesses or retired members. For example, we do not query the secretary who reports for the Bakersfield local of the Musicians Union to determine whether he includes in his count the Chief Justice of the United States. From some points of view, this lack of a sharp definition is a weakness in our data, but from the point of view of a state agency, we can hardly expect to impose one concept of "membership" upon 3,000 voluntary membership groups.

Summary

Statistics of union membership, even with the almost complete reporting we obtain, will always be rough approximations.

⁷ *Directory of National and International Labor Unions in the United States, 1953*, Bureau of Labor Statistics (Washington: 1955), p. 6.

⁸ *Directory of Labor Organizations in Massachusetts, 1954*, p. 129.

Nevertheless, and, recognizing their lack of precision, statistics of union membership are basic data in the field of industrial relations, in labor market research, and in wage analysis. They are no less essential to a full picture of the industrial and economic life of a community or a state than of the nation.⁹ Once they can be made available, their uses are readily recognized.

I hope by this description I have indicated that the development of state and area estimates of union membership is possible for any state. If so, perhaps good estimates will become available in more than two of the forty-eight states.

I shall leave it to our next speaker to discuss more specifically some of the uses for which these estimates are valuable.

MEASURING WITH A BROKEN YARDSTICK

IRVING BERNSTEIN

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That trusted pilot to precise knowledge, the *Statistical Abstract of the United States*, navigates with a sure hand on the tiller past the reefs and shoals of ignorance. We may learn with exactness, for example, the quantity (thousands of pounds) and value (thousands of dollars) of cod, mackerel, and flounder landed each year at the ports of Boston, Gloucester, New Bedford, and at Provincetown and Cape Cod. Further, it is possible to determine with precision the statistics of peanuts (picked and threshed); the *Abstract* supplies data on acreage harvested, production, farm value, yield per acre, and price. And we may obtain with certitude the number of freight cars in service on steam railways by type: box, flat, stock, gondola and hopper (open and closed tops), tank, refrigerator, and other. If our interest should be confined to the rear of the train, an equally exact figure is available for "cabeese."

When, however, we turn to the statistics of labor union membership, this aura of precision vanishes. At the outset the *Statistical Abstract* warns sternly: "Membership data are estimates, not to be construed as data verified by Government." This is no idle threat. The membership

⁹ Leo Wolman, *Growth of American Trade Unions, 1880-1923* (New York: National Bureau of Economic Research, 1924).

in all unions in 1950 is suggested as somewhere between 14 and 16 million; in 1951, as 16.5 to 17 million. Nor is this all. A footnote explains that even these loose estimates include "Canadian members of labor unions with headquarters in U. S." Finally, other footnote numbers spotted on the page are symptoms of that chronic disease, ignorance: "Not available."¹

Something, clearly, is wrong. With this audience it is hardly necessary to stress the importance of trade unionism and, therefore, the need for precise knowledge about it. Yet, we know in only the most general way how large it is, measured by membership, and where its centers of strength and weakness are concentrated by region, by state, by industry, by occupation, by union, and by affiliation. In short, trade union membership is in a state of statistical disorder.

This is illustrated—if I may be permitted a personal note—in my own work on union growth.² The problem that has challenged me is the explanation for fluctuations in the size of the labor movement. Is there a secular growth force at work? Does union membership reflect the impact of the business cycle? Are there a multiplicity of factors—economic, social, governmental—that shape the size of the union group? Is the prospect for the future growth, stability, or decline?

To answer these questions, obviously, it was necessary to start with a union membership series for the United States as a whole covering the longest possible time span. The virtual absence of long-term series for jurisdictions smaller than the United States eliminated that type of analysis at the outset. At the national level I surmounted the problem by combining imperfect statistical training with estimable impudence. Here is the way in which this essay in the gentle art of manipulation was undertaken:

As is well-known, there are no statistics at all for most of the nineteenth century. A reasonably consistent series for the years 1897–1934 is supplied by Wolman.³ It is fair to say that a good deal has happened to union membership since the latter date. Hence I wrote Professor Wolman for more recent statistics, which he supplied through 1948. Whether they will be the same or even approximately like those he will publish in his sequel to *Ebb and Flow* I do not know. For the years since 1948 Wolman offered no help, and it seemed quite improper to graft onto his series the quite differently constructed estimates of the

¹ *Statistical Abstract of the United States, 1953*, p. 221.

² See Irving Bernstein, "The Growth of American Unions," *American Economic Review*, XLIV (June, 1954), 301–318.

³ Leo Wolman, *Ebb and Flow in Trade Unionism* (New York: National Bureau of Economic Research, 1936). The data appear on p. 16; the formidable problems of measurement are discussed in chapter I.

Bureau of Labor Statistics. Hence I projected his terminal figure by applying to it the annual rate of growth in per capita membership reported by the American Federation of Labor. This had several shortcomings: the AFL certainly grew more rapidly than the rest of the labor movement in the period 1948–1953; some unions deliberately over- or understate membership for per capita purposes; and affiliations and disaffiliations—not reflecting membership changes—affect the per capita. This whole sorry process may be recapitulated in an expression of my own confidence in the figure for 1953—precisely 17,010,033. I would guess it accurate within a million union members either way.

There certainly can be no doubt that the process of measuring the size of the United States labor movement cries for drastic overhaul. Before turning to what should be done, I want to raise several questions that must be resolved. They may be grouped in two categories: first, those that are definitional and methodological in character, and second, those that involve facts. If we had the answers to all of them, there would be little left to learn. Since I do not foresee the immediate arrival of that happy state, my approach is tentative and exploratory.

The definitional and methodological questions may be framed as follows:

1. *What is a union member?* Should the definition hinge entirely upon dues payment or should it count delinquents as members? It seems to me that the latter is more meaningful. Many organizations absolve strikers and those temporarily out of work from the need to pay dues. The former, certainly, should be regarded as members and the latter should also be included for some reasonable period. People out of work constitute an especially difficult problem in industries characterized by intermittent employment. Precisely where the line should be drawn is a delicate question and the unions themselves will have to assist in answering it. That the definition is of critical importance is evident from a recent study of the International Association of Machinists, which showed that “good standing” membership exceeded “dues paying” membership by 14 per cent.⁴ The definition chosen, obviously, has an important bearing upon the correlation between employment and membership. One would expect that the number of people employed would have a closer relationship to the number paying dues than to union members otherwise defined.

2. *For what time interval should membership be measured?* The familiar series—Wolman, BLS, California, Massachusetts—are all on an annual basis. It would be preferable on several counts to have a monthly estimate. One is the problem of seasonality in such industries as construction, retail trade, agriculture, and canning. A second is that a final disposition of the relationship of

⁴ Albert S. Epstein, “Union Records as Statistical Sources,” unpublished paper delivered to American Statistical Association (December 29, 1948), p. 1.

the business cycle to membership must be based on at least quarterly or, better still, monthly data. This is because business fluctuations are too sensitive to be measured with a yardstick so crude as an annual series.

3. *How can membership statistics be restricted to the United States?* Many United States unions have some members, and in a few cases a large number, in foreign countries, particularly Canada. By obtaining data directly from the unions—federations and internationals—it becomes exceedingly difficult to eliminate the foreign contingent. This suggests that another source is preferable.

The second category of questions concerns the basic factual data needed for an understanding of the membership magnitudes of the labor movement:

1. *What is total union membership in the United States?*
2. *What is the extent of organization by region?* This is of particular importance at the present time to resolve the controversy over the degree of unionization in the South.
3. *What is the extent of organization by industry?*
4. *What is the extent of organization by size of community?* How good a job, for example, have unions done in gaining members in small towns?
5. *What is the extent of organization by occupation?* To raise a current issue, how well-organized are the white-collar trades?
6. *What is the extent of organization by international union? By federation?*
7. *How much turnover is there in union membership?* It seems clear that there is a good deal. It would be useful to know how much, where it tends to concentrate, and the reasons.

All these questions, obviously, cannot be answered at once; the inherent difficulties are too formidable and the cost is too great. It seems to me, however, that a good deal can and should be done soon.

At the state level it is both possible and desirable for jurisdictions other than California and Massachusetts to push on with the good work they are doing. Though it may be starry-eyed, it is certainly not absurd to hope that the major industrial states, at least, will develop programs within the reasonable future, preferably with representation from each region.

The larger issues, however, cannot be resolved by the states. Here the federal government must act. At this level I have two proposals to make. The first is that the Bureau of the Census should add the following question to its monthly sample of the labor force: "Are you a member of a labor union?" This would, of course, require a definition of membership in advance. Since the other questions in the survey relate to labor force status, a byproduct would be the relationship of membership to employment. Further advantages are that the series is monthly and that foreign membership is automatically excluded. The result

would be a statistic of national membership published in the *Monthly Report on the Labor Force*. The second proposal is to add a set of questions to the decennial census. They would yield, beyond the national figure, the number of union members by state, by region, by industry, by size of community, by occupation, by union, and by federation.

If these steps were taken, we would be in a position to assess with some authority the larger issues that many of us have raised concerning the growth characteristics of the American labor movement. And the union member would attain status alongside the flounder, the peanut, the hopper and gondola (open and closed tops) in our *Almanach de Gotha*, the *Statistical Abstract of the United States*.

2

ANALYSIS OF CONTRACT PROVISIONS

Chairman:

WILLIAM H. SMITH, Federated Employers of San Francisco

Papers:

Introductory Remarks

WILLIAM H. SMITH

**Statistical Problems in the Analysis of Collective
Bargaining Agreements**

MAURICE I. GERSHENSON, California Department of Industrial Relations, San Francisco

**Analysis of Collective Bargaining Agreements in the
Pacific Northwest**

WILLIAM S. HOPKINS, University of Washington, Seattle

INTRODUCTORY REMARKS

WILLIAM H. SMITH

Federated Employers of San Francisco

The wages, hours, and working conditions of seventeen million workers or more in this country are directly governed by the provisions of collective bargaining agreements. The terms of these agreements are in a constant state of change having the utmost significance to workers, unions, employers, arbitrators, and others who are directly concerned with the bargaining process. It is important, therefore, to know what provisions are in these agreements and the kinds of changes which are taking place.

Information based upon collective bargaining agreements is one of the most important primary source data for use in reaching labor relations decisions. This importance has grown as collective bargaining has become more widespread and as the subjects bargained for have increased in number and complexity. A wider variety of provisions is now covered by most agreements than ever before. Only a few weeks ago, for example, stock purchase plans were made mandatory subjects for collective bargaining by the National Labor Relations Board. These recent developments have complicated, but not changed the problem of organizing and analyzing the provisions of collective bargaining agreements.

Each of our three speakers this morning has had an interest in this subject for more than a decade. Twelve years ago when I came to my present position, my predecessor presented me with an extensive personal file entitled "Contract Analysis." In that file I found correspondence and other materials on contract provisions from each of our three speakers. In addition, there was a variety of similar information in his file accumulated over more than a decade—all dealing with various problems of organizing and analyzing the terms of collective bargaining agreements.

In our association we have reached certain conclusions based upon our experience in the past two decades. These are:

1. It is in the best interests of all concerned that collective bargaining decisions be made against a background of relevant facts. As factual materials are introduced into the bargaining process, many areas of disagreement can be reduced or eliminated. The remaining areas of disagreement can be more accurately defined as bases for compromise or dispute. It is as important to know the area of disagreement as it is to know the area of agreement.

2. Collective bargaining agreements constitute one of the basic sources of data for use in bargaining. The doctrines of prevailing practice, comparable rates and conditions, gross inequities, etc., are mere words unless based upon factual data which permit analysis and verification.

3. Membership in our association will require each company to furnish copies of its collective bargaining agreements for filing and analysis. This principle was extended in 1944 to cover all major employers associations in northern California, and in 1945 was voluntarily accepted by most of the major employers associations of the Western states. We act as a clearing house for them.

4. The accumulation of collective bargaining agreements is a waste of time, unless they are so organized as to permit analysis for the variety of needs which arise in collective bargaining. Our research files contain over 8,000 agreements classified by area, industry, and bargaining unit.

5. Accurate analysis of bargaining trends requires not only the careful stratification of contracts by union, industry, area, or other appropriate basis but also the weighing of such intangibles as time sequence, bargaining patterns, and bargaining leadership. Certain key bargaining units, both nationally and locally, carry a weight far greater than other apparently similar bargaining units. To be most useful our analyses will need to make these distinctions on a par with those made by the bargainers themselves.

6. Administrative efficiency requires a standardized procedure for obtaining and filing collective bargaining agreements and their provisions, but the informational needs of collective bargaining are so varied that flexibility should be maintained toward the problem of analysis. It is our view that to be useful a high proportion of the analyses that are made of collective bargaining agreements and their terms should be "tailor made" to fit the specific circumstances. The acceptability of an analysis depends in a large measure upon the extent to which the parties believe it to be applicable to their problems.

These conclusions and comments offer little that is new and unfamiliar to our three panel members. Each has been faced with the same general problems. Each has made definite contributions toward our need for organizing and analyzing contract provisions.

STATISTICAL PROBLEMS IN THE ANALYSIS OF COLLECTIVE BARGAINING AGREEMENTS

MAURICE I. GERSHENSON

*Division of Labor Statistics and Research, California Department
of Industrial Relations*

The collective bargaining contract sets the ground rules for a labor-management relationship. When labor and management propose to establish such rules for the first time, or to modify existing rules, they generally want to know what rules others in the same industry or area have adopted. There is need, therefore, for collective bargaining data prepared by an impartial agency and acceptable to both labor and management.

In California, the Division of Labor Statistics and Research of the State Department of Industrial Relations attempts to serve this need by maintaining a comprehensive file of collective bargaining agreements and by supplying data based upon analyses of provisions in these agreements.

This morning I would like to discuss some of the major statistical problems encountered in measuring the prevalence and characteristics of contract provisions on a given subject. The emphasis will be on finding the best ways to produce data which accurately describe current practices established by collective bargaining in an industry, or an area, or in the state as a whole.

The Universe

It is, of course, always desirable to have an accurate measure of the universe to be studied. Unfortunately, we do not have any means of learning of the existence of every single contract in California, and therefore we are unable to construct the precise universe of collective bargaining agreements in the state as a whole or in any particular area within the state. We must, nevertheless, try to approach it.

Over the years the Division of Labor Statistics and Research has

built up a comprehensive file of current California agreements covering all areas in the state and all industries. We have developed techniques for replacing agreements when renegotiated and for acquiring new contracts when collective bargaining relationships are established for the first time.

In addition to acquiring the individual contracts, we also ascertain the number of workers covered by each agreement. Knowing the number of workers covered by the agreements on file, we judge the adequacy of our file by relating this information to other data we have. We have excellent data on employment by industry and area.¹ In the last few years we have also developed what we believe are good statistics of union membership in the various industries and areas.²

By relating these three sets of figures—workers covered by the contracts on file, union membership, and employment—we can obtain a fairly reliable indication of the probable adequacy for analysis purposes of the contracts we have.

For example: Our agreements for the furniture and fixtures manufacturing industry cover around 15,000 workers. Union membership in the industry is approximately 17,000 and the total number of production workers employed is 20,000.

From these facts we can conclude that in terms of number of workers, the contracts we have will yield data representative of the conditions under which unionized workers in the furniture and fixture industry are employed.

We may not know how many contracts there are in this industry other than those we already have but we are confident that if there are other contracts they cover only a small proportion of unionized workers in this industry and the absence of these contracts does not seriously bias any of our compilations.

Take another example. In the lumber and wood products industry we have 22,000 union members. After very diligent search, we have been able to find contracts in this industry covering only 14,000 workers and have concluded that a sizable number of lumber workers who are union members are employed in plants not under union contracts. We believe the contracts we do have are probably representative of collective bargaining practices in that part of the industry operating under union contracts.

However, if there are lumber and wood products contracts in existence which we do not have and if they cover a large number of workers,

¹ See *California Labor Statistics Bulletin* (published monthly).

² See *Union Labor in California* (published annually).

their absence would bias our results to the extent that the terms of these contracts differ significantly from those we have.

Essentially our approach has been to use the figures of union membership as a sort of approximation to the universe of contracts and to see how close our contract coverage count comes to the membership count.

In general, we have concentrated our efforts on collecting as complete a file of contracts as possible for all important industries in the state, not only to make certain that the conditions established by collective bargaining in these industries are accurately described but also to insure the representativeness of any over-all totals we may publish.

Though I hope it is apparent from this discussion, I want to emphasize that, for this work, the universe is limited to that portion of employment which is governed by collective bargaining agreements. We make no attempt to report prevailing practices in an industry or an area on the basis of union contract analysis.

The extent to which collective bargaining provisions portray conditions in an industry depends, obviously, on the extent of union representation in the industry. The user of our contract analysis data also has available our current industry and area estimates of the total number of wage and salary workers in the state,³ and can always make an evaluation of the extent to which the contracts we summarize govern total employment in his industry or area. To aid him in this evaluation we also include from time to time in our publications on contract provisions a comparison of the varying extent of union representation among workers in the different industries.⁴

Sampling

Is it possible to develop reliable data on collective bargaining practices in an industry or in an area by analyzing a sample of contracts rather than the complete file?

In the absence of complete universe data we have no valid basis for developing a scientific probability sample. Another possibility—setting up a so-called “representative sample” of contracts or a sample of “key agreements”—we decided against because we were unwilling to be the judge of what is a representative or key agreement. It is also questionable whether any type of sampling would be practicable for area statistics, particularly if industry detail within the area were to be shown.

³ *California Labor Statistics Bulletin*.

⁴ See “Paid Vacation, Holiday, and Sick Leave Provisions in California Union Agreements—Scope of Analysis,” *Union Labor in California, 1952*, Department of Industrial Relations, pp. 15–16.

These considerations led to the conclusion that we should avoid sampling, and for a time we analyzed all the contracts on file. By 1952, we were carrying a load of more than 2,000 different contracts and that year we published an analysis of the vacation, holiday, and sick leave provisions in all these contracts.⁵

Then we decided to run some tests to see what would be the effect if we excluded the smaller contracts. We found that contracts covering fewer than 100 workers represented 42 per cent of the documents on file but only 3 per cent of the total number of workers. The contracts covering 500 or more workers represented one-fifth of all agreements on file but covered about four-fifths as many workers as all the contracts.

We next compared the results obtained on a variety of contract provisions by excluding the smaller contracts. When we excluded all contracts covering fewer than 100 workers, we found:

1. In none of the 43 industry groups for which we compile separate data did we lose more than 15 per cent of the covered workers.

2. For any particular contract provision we obtained about the same distribution as when we included all agreements. For example, for each industry, the relative distribution of paid holidays was practically the same, in terms of workers covered, with or without the small contracts.

When we excluded all contracts covering fewer than 500 workers, we found that for all industries combined, in the state as a whole, the relative distribution of number of paid holidays was the same as when we used all the contracts. For industry and area breakdowns, however, the results were not as consistent.

On the basis of our tests we concluded that we could develop satisfactory data if we confined our regular analyses to contracts covering 100 or more workers. Furthermore, where detailed industry or area data were not required and where information based on large agreements would be helpful, we decided that we could limit our tabulations to agreements covering 500 or more workers.

This has been the basis of our program since 1953. We analyze on a continuous basis all contracts received which cover 100 or more workers and publish the results usually for forty-three different industries and three major metropolitan areas.⁶ For special industry or area studies and for wage rate analyses, we include all pertinent contracts on file, regardless of the number of workers covered.⁷ For statewide

⁵ See "Paid Vacation, Holiday, and Sick Leave Provisions in California Union Agreements," *Union Labor in California*, 1952.

⁶ See "Selected Provisions in California Union Agreements," *Union Labor in California*, 1954.

⁷ See table 1, "Contract Wage Rates and Vacation Provisions, Construction Industry," *California Industrial Relations Reports*, December, 1954.

surveys in which industry or area detail is not needed, we may analyze only those agreements covering 500 or more workers.⁸

What Clauses to Analyze

To make the greatest contribution, we should be able to supply data on any contract provision on which parties in negotiation may seek impartial information. Limitations of budget and staff, however, compel us to confine our analyses to a limited number of contract clauses. This raises the question of what types of clauses to concentrate on. The answer is based upon the nature of the data requests we receive and upon our anticipation of needs that may arise.

For our continuous analysis (contracts covering 100 or more workers) we have confined ourselves to:

1. Provisions in which there is a continuing and widespread interest among parties in negotiation.
2. Provisions which by their content are susceptible to translation into a numerical coding system.
3. Provisions which are common to many or most agreements.
4. Provisions which are frequently renegotiated and for which there is continuing need for up-to-date information for comparison with earlier periods.

In recent years, wage supplement provisions have met all or most of these criteria and have been the primary subjects for our continuing analysis, e.g., vacation, holiday, sick leave, health and welfare, and pension provisions. From our continuing analysis we can publish timely data on these provisions for all industries and areas of the state. But possibly even more valuable is our ability to provide on very short notice to parties in negotiation up-to-date tabulations of data directed specifically to the points under discussion.

Apart from the continuing analysis program, we have made one-time studies of certain clauses because they were of great concern at the particular time. Examples are: (1) night shift differentials during World War II when two- and three-shift operations were common; (2) union security provisions just prior to the enactment of the Taft-Hartley law; and (3) wage escalator clauses following the outbreak of hostilities in Korea.

Among the recent one-time studies made in response to specific requests were scheduled hours of work, check-off, nondiscrimination clauses, rest periods, lay off, report pay, wash-up time, clothing allowance, mileage allowance, arbitration, safety committees, physical examinations, jury duty.

⁸ See "Amount of employer contribution for health and life insurance," *Union Labor in California, 1953*, pp. 23-25.

For an agency such as ours, the problem of what clauses to analyze is primarily that of determining what is of major current need, anticipating what may be needed in the near future, and of selecting from among the alternate means those that will develop the greatest amount of useful data with the limited resources available.

Analysis

Coding.—A good coding plan is essential if the analysis is to express accurately the characteristics of the contract provisions under review. (I use coding here in the broad sense of classification.)

In formulating the coding plan, a decision must be made as to how intensive the analysis of each particular clause is to be. What characteristics of the contract provision under review should be recorded and in how much detail? Again taking holidays as an example, the review can be limited to the prevalence of a paid holiday provision, reducing the coding job for each agreement to placing it in either a yes or no category. It might go one step farther and determine the number of paid holidays granted or it could also attempt to define holiday practice with respect to any or all of the following items:

1. The particular holidays named.
2. Holidays which occur during the worker's vacation.
3. Eligibility for holiday pay.
4. Attendance requirements before and after the day of the holiday.
5. Amount of pay for work on a holiday.
6. Holidays which fall on Saturday or Sunday.
7. Refusal to work on a holiday.
8. Extra work during holiday week.
9. Holidays falling on employee's regular day off.

To classify the characteristics of all contracts on each or most of the above items is a sizable coding assignment. We made such a detailed analysis in 1948, when after the abolition of wage controls many holiday provisions were being completely rewritten. We felt that the circumstances of the time warranted such an intensive survey and were aware that an important byproduct would be the tested methodology which would leave us in a position thereafter to analyze any of these items readily when needed for a particular industry or area.

Of course, a variety of compromises is possible. Analysis of any contract provisions may be set up so that some items are analyzed in detail and others are merely indexed. Frequency of analysis is also a factor in determining the amount of detail. If it is to be a one-time study, it may be desirable to incorporate a good deal of detail. For continuous measuring of a particular provision, however, we have

found that it is feasible to limit the amount of detail initially recorded and develop more detail later, when and if the need arises. Then it can be pinpointed to the specific need.

Having settled upon the extent of the analysis, we come to the problem of coding. In setting up codes for a specific clause, the most important consideration is to anticipate and make adequate provision for all of the important variations that may be found. When we are uncertain as to the range of variation, we make a pilot study and then revise the codes, if necessary, in light of the results of the trial run. We now make it a rule not to introduce a provision into our continuous coding program until we have first made a separate and successful analysis of the given provision as a one-time study.

Coding instruction.—As in all statistical work involving coding, it is essential that good coding instructions be prepared and that the analyst be properly trained.

In the field of contract analysis some of the major problems in writing coding instructions are: (1) anticipating the many variations to be found, (2) making clear to the coder how to make proper distinctions between statements that appear to be similar but actually represent different conditions, and (3) providing for the treatment of peculiar cases.

If several persons are analyzing the same contract provisions in different agreements, it is important that they work closely together to insure uniform interpretation of both the contract clauses and the coding instructions.

We arrange to have those who check the original coding follow closely behind the coders so that if any major differences of opinion develop, they may be resolved before too many contracts are coded.

This may be a good place to point out that the coders are instructed to note on the code sheets any unusual situations or any extreme items they may find. These notes are very helpful in writing the reports and in checking extreme items.

We interchange coding instructions with others who engage in contract analysis, such as the Industrial Relations Section at the California Institute of Technology and the United States Bureau of Labor Statistics.

To insure a high degree of comparability of the data based on contract analysis I would like to propose that organizations in this field get together on standardizing definitions, concepts, methodology, presentation, etc.

Interpretation.—An accurate statistical analysis of contract provisions rests upon a careful translation of text statements into numerical

terms. This involves reading and interpreting the specific provision *as well as related provisions* in the contract.

Most contracts are reasonably clear, and the analyst usually is able to interpret the intent of the parties. But sometimes the text of a particular clause is so ambiguous that it is very difficult to classify properly. In such cases we try to contact the parties to the agreement to secure an interpretation of the particular clause. Where this is not practicable it may be necessary to classify that agreement in the catch-all classification "other."

Sometimes a provision may have been incorporated by reference to company practice without spelling out what the practice is, like this: "The company agrees not to change its current practice in regard to rest periods without prior agreement with the Union." This is not very helpful for an analysis of length and frequency of rest periods. Recourse to the parties is desirable, if at all possible, to secure the detailed information on current practice necessary to properly classify the contract.

Unit of measurement.—As in other fields, the statistical analysis of contract provisions sometimes presents problems in developing a common unit of measurement. This is true when a particular item is expressed in different units in different contracts.

An example: The amount of the employer's contribution to the health and welfare fund may be stated as a flat sum of money per employee per day, per week, or per month or as so many cents per hour or as a percentage of the wage. To calculate an average of the contributions, it is necessary to convert these to a common unit.⁹

The problem of a common unit of measurement is especially vexing in the case of night-shift differentials. Here we have money differentials—sometimes in percentage terms and sometimes in money amounts. We also have time differentials—and these often in combination with money differentials. The variations are many. We have not been able to work out a satisfactory common unit, so we count each type of differential separately and make no effort to calculate totals or averages.¹⁰

These are but two examples of the many problems related to the development of a common unit of measurement.

Industry classification.—The classification of collective bargaining agreements by industry at times presents some knotty problems. I have already mentioned that we issue contract data for forty-three different industry groupings. In general these groupings follow the Standard

⁹ See "Average employer contribution," *Union Labor in California, 1953*, pp. 24-25.

¹⁰ See "Night-Shift Premium Pay Provisions in California Union Agreements, Selected Manufacturing Industries," *Union Labor in California, 1951*.

Industrial Classification. But within this framework we have had to make certain arbitrary adaptations.

We found it impractical to attempt to develop data on a finer industry breakdown than a two-digit basis, except for a few classes, notably canning and some industries in the transportation equipment group. In some industry divisions we found instead that it was best to combine two or more two-digit groups. The chief reason for this is that many individual collective bargaining agreements cross industry lines because they cover establishments in different industries.

What we have tried to do is to set up industry groupings which would accommodate most of the important multi-industry contracts. A good example is the California Metal Trades Association agreement with the Machinists' Union in the San Francisco Bay Area. This agreement covers machinists in plants classified in primary metals, fabricated metals, machinery, electrical equipment, and other metal-working industries. The best we have been able to do to accommodate this contract and similar ones has been to make a coarse grouping which we call "Fabricated Metal Products and Machinery, Except Transportation Equipment." On the SIC basis, this group includes industry groups 34, 35, and 36.

Among our forty-three major groupings, then, the individual groups are not of equal refinement, and even with coarse groupings we have difficulty classifying certain contracts. Take for example the two major contracts covering warehousing work in San Francisco, the agreement between the ILWU and the Distributor's Association, and the one signed between the Teamsters and the San Francisco Employers' Council. Each covers employees in several different industries but we arbitrarily classify both agreements in wholesale trade because the largest group of workers under these contracts are employed by firms whose major activity is wholesale distribution.

Another industry classification problem is exemplified by culinary workers' agreements which may cover both restaurants and hotels. The SIC classifies restaurants in Trade, and hotels in Service. We show data for these contracts opposite an industry caption which reads "Eating and drinking places, hotels, and other lodging places" listed in the major industry division Trade.

These we have found are the major problems of analysis—interpretation, coding, unit of measurement, and industry classification.

Weighting

The problem of weighting confronts us squarely in any statistical description of the prevalence and characteristics of contract provisions.

Whenever an inquirer wants to know how common a particular contract provision is, the answer must identify the basis of comparison. Common in terms of what?—number of contracts having the particular provision or number of workers covered by such a provision.

Number of contracts.—Originally, we used number of contracts as the basis of comparison. This may sound like a simple procedure, but even it involves a number of problems of methodology.

Take the case of one document signed by an employer association and a group of unions in several different internationals, such as the Associated General Contractors agreement with the six basic building trades. Should this be counted as one agreement or as a multiple? If as a multiple, how many? On the basis of the physical document, it can be argued, we have only one contract signed by a number of parties. On the other hand, it may be reasoned that the individual internationals are entering into separate agreements, even though they are printed in a single booklet and that the document should be given a count equal to the number of different international unions involved.

Then there is the document signed by a group of local unions all in the same international and by one or more employers, as in the case of culinary workers and restaurants. Should this be counted as one agreement or be given a count equal to the number of different locals? Another situation is the so-called "standard" agreement where separate but identically-worded documents are signed by individual employers with a single union. Should this contract be counted as one or a multiple equal to the number of different employers who sign the agreement? These are illustrative of the types of agreements which pose problems of counting.

Since the only merit of weighting by number of contracts is its simplicity, we took the simplest of these choices and counted each separate document as one regardless of the number of unions or employers signatory to the agreement. In the case of a "standard" agreement, we filed only one copy and discarded all duplicates thus counting it as one. Trailer, tandem, and supplemental agreements were counted separately from their respective master contracts.

While this was an easy solution so far as the mechanics of counting was concerned, we could never place confidence in a system where a contract covering 100 workers had the same weight as one covering 10,000. We were concerned as to what distortion, if any, might be introduced by this method of weighting and we had no way of knowing. It was conceivable that we could have a tabulation showing a large percentage of the contracts having a particular provision, although these contracts covered only a very small portion of the workers. Or vice versa.

Number of workers covered.—A few years ago, we succeeded in shifting to a more defensible system—one based on weights in terms of number of workers covered. Under this weighting plan, a contract covering 10,000 workers has 100 times the weight of one covering only 100 workers.

We have been able to collect data on the number of workers covered by each of the contracts on file. Usually we attempt to secure the coverage figure from the source supplying the contract. In most cases, it is the union local. In other cases it may be an individual firm or an association.

Union contracts generally cover all workers within a particular bargaining unit defined by the agreement—for example, “all production and maintenance workers.” If the contract does not make union membership a condition of employment, it may cover some workers who are not union members. For this reason, in securing coverage figures we attempt to learn the total number of employees in the bargaining unit covered by the contract, not union members covered. The union or employer sometimes gives us a single regional or national coverage figure for a particular contract. This poses the problem of estimating the California portion. Data from our employment statistics program have proven helpful for this purpose.

Contracts covering highly seasonal industries present a question as to what date to count the number of workers covered. For such industries we try to secure an annual average.

Where information on the number of workers covered is not available directly from the parties to the contract, we are forced to make the best estimate possible. For this purpose we check against employment data, union membership figures, reports of per capita payments, data in union publications, and any other source which may be helpful. Where the contract covers all production workers in a plant the problem is not very great, since we can use the employment figure for that plant. Where the contract covers a single craft in a plant or group of plants, it is sometimes extremely difficult to secure a reliable coverage figure.

Actually the number of contracts for which we do not have concrete coverage figures is very small. We believe that whatever error there may be in the estimates of coverage for this small group of contracts has little effect on the over-all figures.

Before leaving the discussion of number of workers covered by contracts, I would like to mention two more problems. In addition to statistics for the state as a whole, we compile detailed data for the three largest metropolitan areas within the state.¹¹ This presents some diffi-

¹¹ Los Angeles, San Francisco—Oakland, and San Diego.

culties where contracts cross or extend beyond area lines and where an area breakdown of the coverage is not available. A contract may cover "all northern California" or a group of counties some of which are in one of the metropolitan areas and others outside. We ask the source supplying the contracts to assist us in estimating area coverage and, on the whole, we have had reasonably good response.

The other problem is that of determining how long a coverage figure for a particular contract can be considered valid. In the case of contracts in industries subject to wide cyclical swings, it is necessary to have reasonably current figures. We try to review our coverage figures annually and make an effort to obtain an up-to-date figure where we have reason to believe a marked change may have occurred.

The statistics of workers covered are useful in giving each contract a more realistic measure of importance in the total than is possible under a system of weighting by number of contracts where each agreement is assigned the same weight.

However, the resulting figures require careful interpretation. For example, only a small proportion of all employees under a given contract may be working nights, but the weight assigned in the analysis of night-shift provisions is the total number of workers covered by the contract. Again, in the case of extended vacations for long periods of service, the number of eligible persons is less than the number of workers under the agreement.

Tabulation

Tabulation is the bridge between analysis and presentation. After the contracts are read, interpreted, coded, and weighted, they must be aggregated.

The methods of tabulating or summarizing contract data depend upon a number of considerations, including the nature of the contract provision, the number of contracts analyzed, and the amount of detail required. We have used a wide variety of methods, as follows:

1. *Straight listing of text excerpts from contracts.* Some types of contract provisions are difficult to summarize statistically. They can not be fitted into a formal coding or classification plan because of the great variety of conditions found, or because it is difficult to set up mutually exclusive categories. In this category are such items as grievance procedure and seniority provisions.

2. *Hand tabulations.* Where the number of contracts is relatively small and no great amount of cross-classification is required, a simple hand tabulation is quite satisfactory. This can be done in a number of ways. The contracts can be sorted into separate groups as they are

read and then each pile counted; or a tally sheet is set up and tally marks entered in the appropriate spaces as the agreements are read.

3. *Marginal punch card.* At one time we used the marginal punch card (key-sort) method of indexing and analyzing contracts originally developed by the Industrial Relations Section of the California Institute of Technology. This is an excellent method, particularly where the number of contracts is not large and where it is not necessary to weight by the number of workers covered. It provides for rapid and simple tabulation of data. Dr. Gray, who did the pioneering work on this method, will discuss this procedure later this morning.

4. *I.B.M. punch card.* For those provisions included in our continuous coding program and for many special studies, we use I.B.M. punch card procedures. This method is best for that type of contract provision which can be easily reduced to numerical items—number of holidays, weeks of vacation, etc., or where the number of variations is small and each contract can be easily classified into one of a small number of classes.

The I.B.M. punch card method has a number of limitations, but it also has many advantages. A certain amount of detail must be given up, particularly when it is necessary to classify some contracts in catch-all classes ("not-elsewhere-classified," "other," etc.). It should be pointed out that even in such cases, it may be possible to recover some of the detail by entries on code sheets or by reference to the contracts themselves.

The punch card method has particular advantage where the statistics of contract provisions are in terms of number of workers covered, because this procedure provides an easy means of aggregating the weights by mechanical means.

With the punch card procedure it is possible to derive easily a large number and wide variety of cross-classifications and multi-dimensional tabulations. The combinations are almost infinite and limited only by what is in the cards.

The punch cards themselves are useful not only in the statistical process but also as an index of contracts, and of individual contract provisions.

Another advantage of the punch cards is that it is possible to list mechanically the data in the individual cards. The listings can be made in any order and frequently two or more listings in different orders are made of the same deck of cards. These listings are useful for analytical purposes. In many cases the information can be quickly tallied directly from the listings.

Having the data on punch cards makes it easy to measure changes

from time to time on the basis of identical contracts. By collating a current deck of cards against a deck for a previous period, it is possible to select an identical sample and derive comparative data.

Another mechanical advantage of the punch card method is the ease of recording a revised provision. When a contract is renewed most provisions remain unchanged, but one or two items may be revised. The few revised items can be hand punched into a new card, and all the remaining items duplicated mechanically.

Presentation

To serve their purpose the results of contract analysis must be presented in a manner most useful to those who seek this type of information. The basic problem is how best to show the prevalence of a given type of provision, the range of variation, and pertinent detailed characteristics.

Form.—The form of presentation is usually dictated by the nature of the provision analyzed and by the particular characteristic of that provision to be presented

A simple table is sufficient to show number of workers covered by agreements providing for sick leave, classified by industry. But presenting data on the various types of sick leave plans (flat, graduated, etc.), the variations within these types, the number of workers covered, and all of these classified by industry, poses a good many problems.

Here the problem is how to show in a single table or even in a group of tables not only the amount of sick leave allowed but also such significant factors as eligibility, waiting period, full or partial payment, and cumulation. We know of no simple way of presenting the data in all of these dimensions.

In general our policy in complicated cases has been to include in our tabular presentations only those factors which seemed to be of greatest importance and which could be fitted into a statistical table. In the case of sick leave, our principal tables give number of workers covered by each type of plan (flat, graduated, etc.); allowances within the major type; these classified by industry.¹²

Other characteristics of sick-leave provisions are discussed in the text of the reports with appropriate text tabulations.¹³

Nearly every type of clause presents some special difficulty. The types which give us a great deal of trouble are those which are stated

¹² See *Union Labor in California, 1952*, table 11, p. 29.

¹³ See *Union Labor in California, 1949*, table 9, p. 34. Here we tried to show in a single table detailed provisions in graduated sick leave plans, such as minimum and maximum allowance, service required for maximum allowance, rate of sick leave pay, waiting period, prevalence of each type of variation, and industry.

in such different terms that they cannot be reduced to a common unit. Night-shift premium pay is a good example. We have no practical way of combining the different variations found, and so at times we show what amounts to a listing of the many variations with figures on the number of workers covered by each variation.¹⁴

Amount of detail.—Deciding the form of presentation raises the question of how much detail to show. The answer is usually a compromise between detail and summary.

The general practice we have followed is to show separately those characteristics of greatest frequency and to throw the remainder into the classification "other." Then, for each industry, we review the size of the "other" category in relation to the total for that industry and add descriptive footnotes as necessary to present the characteristics of provisions covering a large majority of workers in that industry. Accordingly, we usually carry extensive footnotes¹⁵ but, in this way, we can reduce the formal table to manageable size and meaningful totals, and yet present a complete analysis for each industry.

As contract provisions become more and more complex, the problems of analysis and presentation will become more difficult. The analyst will have to work out new methods of extracting the data and of summarizing the results.

It must be recognized that nearly all statistical presentations of contract provisions represent an arbitrary summarization of a set of practices which may vary widely. It is impossible to set down in one table or in a group of tables all of the variations and all of the qualifications which may be found without the table becoming an array of statements from individual contracts.

For many purposes, the summary tables prove very useful; for other purposes, it may be necessary to go back to the individual contracts. The limitations of most of the published statistics of collective bargaining should be clearly recognized by the users of the data, particularly the fact that the tables of figures do not tell the whole story.

One serious limitation of the statistics of contract provisions published today is that they do not present the data in a form which shows the relationship of the various clauses one to another. What we usually have are discrete tabulations relating to individual clauses—vacations, holidays, sick leave, etc.

In my opinion, we should now try to develop statistical presentations which will give the facts on combinations of clauses so that for a particular industry we have a clearer and more accurate picture of the

¹⁴ See *Union Labor in California, 1951*, part 3.

¹⁵ See *Union Labor in California, 1954*, table 6, p. 22.

practices in that industry. Borrowing a term from psychology, we need to develop techniques that will enable us to present the "collective bargaining profile." I realize this would mean that all of the problems I have discussed this morning would be multiplied many fold. I believe, however, the results may be worth the effort.

Summary

In this paper I have presented some of the more important problems we encounter in attempting to summarize in statistical terms the ground rules of labor-management relations as expressed in collective bargaining contracts. The rules are changing constantly. Some of the problems become simpler—others get more complex, and we can always count on new ones coming up to make life interesting for the statistician.

ANALYSIS OF COLLECTIVE BARGAINING AGREEMENTS IN THE PACIFIC NORTHWEST

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To a very considerable extent the problems arising in the statistical analysis of practical matters are a function of the budget of the analyst. If he had unlimited financial resources he could presumably collect all of the relevant data and could devise techniques for handling them. If this be correct, it follows that the more restricted the budget the greater the problems.

When, in 1950, the Institute of Labor Economics at the University of Washington first undertook to analyze labor-management contract provisions in the State of Washington, the available funds were small. We were able to contribute a minor part of the time of several professors, and half-time of two graduate students. The most immediate consequence was a rigorous limitation of the sample with which we worked.

In a proper statistical proceeding, the universe and the qualifications of an adequate sample are first determined. We attempted to do this, and then collect contracts within these specifications. In spite of heavy correspondence and countless telephone calls, the collection of contracts which reached our office bore only a partial relation to the

desired sample. And so we were obliged to recast our specifications. About 60 contracts were from manufacturing, and included the half-dozen largest firms in the state. Of the small firms, we could not be sure that our sample was really representative, but there were enough to justify a reasonable assumption that they were adequately random. At the same time we received data on all of the Teamster contracts in the state, numbering in excess of four hundred. But these were given to us with the stipulation of anonymity. Under the limitations imposed by the union, we could use very few of them. Indeed, if we had used them all we would have greatly unbalanced our final results. Further, it was not possible within our means to discover the number of workers covered by the individual Teamster contracts. Hence we could only surmise their possible significance.

In certain other areas, also, we were faced with the requirement of anonymity. When only one firm, or only one large firm, was represented within a given industrial classification, its terms would be readily identifiable by a reader and hence we could not use it if the firm required anonymity. It is true that this was not a serious or frequent problem, but it is most likely to occur when the sample is restricted by severe budgetary limitations.

Analysis based on mere number of contracts has a limited usefulness. To convey any clear idea of the collective bargaining picture of an area it is necessary to know the number of employees covered by each contract. It was in our attempt to secure this information that we encountered the greatest difficulty. There was, no doubt, a variety of reasons for this, ranging from a reluctance to reveal strategic information to mere indifference or apathy. In our second study, that of 1951, we collected 140 agreements. It was impossible for us to secure data on the number of workers covered in 20, or one-seventh of this total. The remaining 120 agreements covered a total of 113,481 workers, which is close to one-fourth of the total workers employed in all relevant industries in the area.

It is easier, and less costly, to collect agreements from large operations than from small ones. In most of the larger collective bargaining units the agreement is printed in booklet form and is readily available. But in small units the agreement usually never gets beyond typed form. Small employers and small union locals were often unwilling to retype a copy for us. As a result we collected an almost complete coverage of the large firms but a scanty representation of the small ones. We were troubled by this imbalance and carefully cautioned our readers. However, we did not believe that such an unbalanced sample lost much in significance. Collective bargaining patterns in the large firms tend to

set the patterns in the small ones, so that a study of all the large, and some of the small, firms would fairly indicate the trends.

Actually, our coverage of small firms was substantially represented by those which either sign a standard agreement or which delegate collective bargaining to an employer association. Out of 140 agreements, 51 (more than one-third) were multiple-employer agreements, and 37 (about one-fourth) were standard agreements. Eleven agreements were statewide in their coverage.

The significance of these latter might best be illustrated. The entire brewing industry in the State of Washington, including both inside and outside workers, is organized by the Teamsters. A statewide contract covering all breweries and all locals is in effect, so that identical contract conditions exist throughout the industry. The terms of such a contract are of obvious importance, and the small breweries have no choice but to follow the pattern of the large.

In our first attempt at contract analysis we converted the results into percentages. For the lay reader, this has the advantage of clarity. Industry and labor people like to see the results in percentage form. But in our small sample the results were sometimes ridiculous. For example, we received only two agreements from the metal mining industry. If the same contract provision occurred in each, we would have reported it as 100 per cent. Of course, having no other agreements we did not know that this provision existed in all cases. To report it as 100 per cent would have been seriously misleading. Partly for this reason, in our first study we lumped mining with manufacturing. Metal mining is not a large industry in Washington, and being closely related to smelting, this decision seemed appropriate.

The method of conversion to straight percentages proved so troublesome that we abandoned it in our second analysis, that of the 1951 agreements. It bore too painful a resemblance to the story of the statistician working for a firm which employed 100 men and 2 women. He reported that 1 per cent of the men had married 50 per cent of the women.

The task of breaking down the contract clauses into items susceptible of tabulation brought the usual problems. There are always trade terms which prove misleading if not actually baffling. There are always difficulties in the interpretation of contract phraseology. There are further problems involved in the tabulation of clauses which reveal only slight differences in substance, but which are not identical. These became especially critical when we discovered that two graduate students were occasionally interpreting clauses differently. No fixed yardstick for the fine points could be given them—we perforce relied upon

their judgment. The discovery that their judgment sometimes differed required a reappraisal of several contract provisions. These difficult coding problems have been well handled by Mr. Gershenson and Mr. Gray and I shall not discuss them further at present.

There is one problem, however, which we never did solve, and which, with limited funds, appears to be insoluble. This is the problem arising out of customary or conventional procedures in an industry which are taken so fully for granted by both industry and labor that no mention of them is made in the agreement. The contract is silent on a procedure which yet exists. For example, only 38 out of 140 contracts prohibit a split shift. None expressly permit a split shift excepting 12 which require premium pay for it. Of course it does not follow that all of the remaining 90 agreements represent establishments in which split shifts at regular pay are commonly found. In many firms a split shift never occurs, in others it occurs without premium. Without making a door-to-door personal canvass, we had no way of finding out. This is only one example of many such possibilities. The absence of a clause from a contract may mean either that the practice never exists or that it exists so commonly as not to be a source of dispute. An analyst with no data before him but copies of agreements can never know which is the answer. Unless he can afford statewide interviews, he can only report the written provisions of the agreements. And yet the written provisions may tell only half the story.

A variation of this problem is seen in the well-known impossibility of collecting data on actual wage rates from formal agreements. We discovered firms which used the top of the union scale as the minimum wage paid, with all employees progressing upward from that point. There are many instances in Seattle where actual wages are substantially higher than the contract provides. But without checking the payrolls, we cannot state how much.

Again, in many establishments there are perquisites such as free meals, uniforms, transportation, and so forth, which are *in lieu* of wages but which are not recorded in a formal agreement. These would not appear in the results of our analysis, and yet are significant items in the employment relationship.

After two years of strenuous effort we reluctantly concluded that we had been too ambitious—that we had been attempting a job too big for our budget. Instead of trying an annual analysis of all contract provisions, we decided to select one or two provisions at a time and to study them in greater detail. This has the advantage of not spreading our resources too thin, and also of enabling us to concentrate on clauses of special interest and timeliness. Further, it eliminates the pressure for

an annual study. Special studies are appropriate if they appear at highly irregular intervals, whereas a report on general contract provisions quickly becomes obsolete and calls for regular revisions.

Accordingly, in 1953 we undertook a study of health and welfare provisions in negotiated agreements. Because of the interstate character of the important lumber industry, we extended beyond the boundaries of Washington to include the more significant agreements in the Pacific Northwest. These included the following trades: culinary, longshoremen, woodworkers, metal trades, aeromechanics, bakery, and teamsters.

In part this study was statistical; in part it was historical and interpretive. We limited ourselves to health and welfare plans which had been negotiated and incorporated into collective bargaining agreements. These do not exist on a small scale. By their nature they are designed for broad coverage, and hence are usually industrywide in the area. Because of this we were saved the expense of trying to track down a mass of small, isolated agreements.

The subject of this investigation also eliminated the biggest problems which had beset our study of all contract provisions: vagueness and silence. The contract terms relating to health and welfare are explicit and detailed. Not only was the labor-management agreement available to us, but also the contract with an insurance company or medical service bureau. In addition to having these documents for analysis, we were able to conduct lengthy interviews with both labor and management representatives in each instance.

The plans which we studied covered about 140,000 workers, which, at the time, came close to constituting the entire statistical universe of our project. These were covered in about a dozen interviews, in each of which at least two of our staff members participated. Each interviewer took notes and these were later consolidated, checked against the documents, and thoroughly discussed. Follow-up information was always available by telephone. Specific contract provisions were easy to classify and to present in tabular form.

There were other questions, however, which did not lend themselves to statistical analysis. For example, we asked whether or not employer contributions had been negotiated in addition to or *in lieu* of wage increases. Since even the negotiators who had written the contracts could not always be sure of the answer, we could record only their impressions. Again, employers differed as to the effects of these plans upon absenteeism and none could give statistical verification of their impressions. Union leaders had general ideas about the effect upon membership loyalty but this, also, was in general terms only. We did not

try to tabulate the answers to such questions as these, feeling that we could only summarize impressions and notions.

The results of the study were more reliable than those of our earlier studies of general contract provisions, and, we believe, are more useful to our readers. This type of study constitutes a more satisfactory use of a limited budget.

At the present time, no study of contract provisions is under way at the University of Washington. Certain circumstances have diverted the attention of our staff to research of a very different type, which may occupy us for several years. When we return to this area of study, we shall undoubtedly continue with analyses of specific provisions similar to the health and welfare study.

There remain for discussion a few general observations suggested by our problem of budget limitations. I have said that our contract analyses of 1950 and 1951 were seriously restricted by our lack of funds and staff. The question still remains as to whether or not a much more complete and elaborate study would have been justified even if we had had unlimited financial resources. It is true that our two reports enjoyed the attention of a number of readers, and we are certain that they served a useful purpose. Whether they were worth what was spent on them, we cannot know. But we seriously doubt that they would be worth a much larger expenditure, no matter how complete and refined they might be. The cash value of research is not measurable, and there is no yard-stick to apply, but in our judgment we spent just about as much as the project could possibly have been worth. And we believe that the same budgeted sum spent on the more limited and specialized study will yield more significant results than the study of agreements in general. This, perhaps, is the really basic problem in analytical research.

STATISTICS OF HEALTH AND WELFARE PROGRAMS

Chairman:

EMILY H. HUNTINGTON, University of California, Berkeley

Papers:

THE CALIFORNIA STUDY

**Methodology of an Analysis of Labor-Management
Negotiated Health and Welfare Plans**

HELEN NELSON, California Department of Industrial Re-
lations, San Francisco

**Coding and Tabulating Procedures in Analyzing
Negotiated Health and Welfare Plans**

ALICE JOY MEHLING, California Department of Industrial
Relations, San Francisco

**The Analysis of Medical Care Benefits in Labor-
Management Negotiated Health and Welfare Plans**

CHARLES R. GARDIPEE, M.D., Stanford University Medical
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STATISTICS OF UTILIZATION AND COSTS

**Statistics on Utilization of Hospital and
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ARTHUR WEISSMAN, Kaiser Services, Oakland

**Statistical Analysis of Welfare Funds with Respect
to Health Insurance**

C. H. TOOKEY, Occidental Life Insurance Company of
California, Los Angeles

METHODOLOGY OF AN ANALYSIS OF LABOR- MANAGEMENT NEGOTIATED HEALTH AND WELFARE PLANS

HELEN NELSON

*Division of Labor Statistics and Research, California Department
of Industrial Relations*

For many years the Division of Labor Statistics and Research of the California Department of Industrial Relations has maintained a file of collective bargaining agreements negotiated between labor and management in California. At present we try to have a copy of every current collective bargaining agreement in California covering 100 or more workers. These contracts, placed on file through the voluntary cooperation of unions and employers throughout the state, have permitted the Division to make analyses and publish facts on current practices and trends as established by labor-management negotiations.

In 1950 the Division made its first analysis of health and welfare clauses in these contracts to determine the prevalence of provisions establishing health and welfare coverage for unionized workers.¹ We have since installed a system of continuous contract coding. Each contract covering 100 or more workers is coded immediately upon receipt in the office, for a wide variety of provisions, including health and welfare. Thus we have been able to measure the increase in health and welfare coverage annually. By the end of 1954 we were able to report that four out of every five employees under union contracts in California had provisions for health and welfare benefits in the terms of their contracts. This represented more than a million union workers in California—four times as many as we had found four years earlier.²

With the increasing number of workers and their dependents covered by negotiated health and welfare plans, the Division received

¹ *Health Plans, Life Insurance, Pension in California Union Agreements*, California Department of Industrial Relations (1950).

² *Labor-Management Negotiated Health and Welfare Plans, Northern California*, California Department of Industrial Relations (1954), p. 7.

many requests for information on the nature of the benefits provided, on the cost, on the extent of dependents' coverage, and on many other aspects of these plans.

Such information was not completely lacking from other sources. Two other organizations in California have made surveys in this field. In June, 1952, the San Francisco Labor Council published a study of health and welfare plans under collective bargaining among unions affiliated with the Council. The survey was thorough in its analysis of financing of the plans and benefits provided. It was limited in scope to a selected group though it covered a large proportion of the plans in existence in San Francisco at that time.³

Another organization which has made valuable studies in this field has been the Federated Employers of San Francisco. With the cooperation of the United Employers, Inc., of Oakland, it has surveyed the benefits provided by labor-management contracts in effect in the San Francisco Bay Area in each of the last three years. These reports summarize, for covered employees, the various types of benefits provided and the amounts allowed for each type of benefit.⁴

Each of these surveys was made for the use of members of the sponsoring groups: the first, for member unions of the San Francisco Central Labor Council; the second, for employer members of the Federated Employers of San Francisco. In both cases, therefore, distribution of the survey results, as well as the scope of the survey, was limited.

Nevertheless, they contributed a great deal to the body of knowledge about negotiated health and welfare plans in the San Francisco Bay Area and they contributed also to the methodology of surveying this rapidly growing and changing phenomenon—the labor-management negotiated health and welfare plan.

Purpose of Survey

When we undertook our survey of these plans we set as its purpose to determine:

1. What benefits are provided?
2. How are they provided?
3. How are they financed?
4. Who is eligible for them?

Our file of current collective bargaining agreements and our good working relations with labor and management in the state gave us a firm base for launching the project.

³ E. Richard Weinerman, M.D., M.P.H., *Labor Plans for Health* (San Francisco: San Francisco Labor Council, 1952).

⁴ Federated Employers of San Francisco, *Employee Health and Welfare Plans, San Francisco Bay Area* (April, 1955).

Our greatest handicap, a lack of knowledge of medical and hospital practices, was converted into an asset when we joined forces in this study with the Department of Preventive Medicine of the Stanford University School of Medicine.

In designing the study we were guided by a desire to provide information in the form most useful to employer and union trustees confronted with the decision of how best to use their available funds to provide health benefits for the members of their plan.

Ours was an inquiry into practices in a field which has come into existence within the last five years through a multiplicity of separate negotiations. At this stage of development either the innovation, the extreme items of the range, or the minority practice may be pointing the way of future development. They are items of interest to anyone who is responsible for negotiating changes in a given plan.

Throughout the study we were attempting to delineate and describe the wide variations encountered in every phase of these plans and still, through statistical summarization, provide a perspective for the reader against which each might be evaluated.

This objective presented dilemmas on every hand, and we are not at all certain that we have succeeded in achieving it.

Collection of Data

One of the first health and welfare plans established by collective bargaining in California was that of the California Metal Trades Association with the Machinists and other metal-working unions. All of the benefits to which the employee was entitled were spelled out in the body of the collective bargaining agreement itself together with all the other conditions of employment and wage rates. Had this practice become widespread our task might have been simpler. However, although this was one of the first plans in California, it did not set a precedent in the manner of negotiating health and welfare plans.

By 1954 the health and welfare clauses in the collective bargaining agreements received in our office read more frequently like this one: "A Welfare Program at a premium cost on eligible employees of not more than \$9.75 monthly will be paid by the employer."

The collection of the necessary information for analysis was therefore a major part of the project. The collective bargaining agreement served as clue and check list rather than basic document.

Because of the large amount of field work to be done, it became necessary to limit the number of plans to be surveyed. Sampling was not seriously considered because too little was known about the universe. Instead it was decided to depart from the Division's general

practice of analyzing data for the whole state and to limit this survey to health and welfare plans in effect in northern California. The northern half of the state was chosen for the practical reason that our offices are located in San Francisco.

The multiplicity of plans, the problem of locating them, the many variations in methods of administration, and the widely divergent methods of providing benefits, all led to an early conclusion that it would not be desirable to try to obtain the data by means of a questionnaire or schedule. Instead it was decided to try to obtain documents setting forth the benefits and eligibility requirements of each plan, to be analyzed by the project staff and to be available in the office for reference throughout the survey.

A plan booklet which outlines the benefits to the members in informal, nonlegalistic terms, is usually provided for each member. Copies of these, at least, could usually be obtained from the insurance company or health service organization, the administrative officer of the plan, or the union or employer.

As the plan booklets were obtained, they were checked against the collective bargaining agreements on file with the Division of Labor Statistics and Research which specified health and welfare contributions until all workers under those contracts were accounted for by a health and welfare plan.

The following definition of a "negotiated health and welfare plan" was applied:

A plan maintained by collective bargaining and financed either wholly or partially by the employer providing, by prepayment, a set of benefits including medical care for a group of employed workers and/or their dependents.

Altogether, 325 different negotiated health and welfare plans were identified and booklets concerning their benefits secured. This included all known negotiated plans in effect in northern California as of May 1, 1954, covering 50 or more workers.

Mrs. Alice Mehling will now tell you some of the techniques we used and some of the problems we encountered in analyzing this wide diversity of data. Then Dr. Charles Gardipee will discuss the analysis of the medical care benefits.

CODING AND TABULATING PROCEDURES IN ANALYZING NEGOTIATED HEALTH AND WELFARE PLANS

ALICE JOY MEHLING

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After identifying each health and welfare plan to be analyzed and obtaining at least a booklet describing the benefits provided, the collection of data remained far from finished. Some of the plan booklets were not as complete as others in spelling out the conditions under which benefits could be received, the eligibility requirements, or the financing of the plan. Where the plan booklet did not contain information considered necessary for the analysis, the information was obtained from other sources.

Information on the employer contribution could frequently be obtained from the collective bargaining agreement, information on eligibility requirements from the trust agreement, information on renewal of benefits from the certificate of insurance. Missing information was also frequently obtained directly from the administrators. Where clarification of information in the booklet was necessary, this too was obtained from the administrators. Thus, before a plan could be completely analyzed, information concerning it had frequently been obtained from several different sources.

Problems of Weighting

The number of workers covered by the different plans varied from 50 to more than 15,000. To have a true perspective for interpreting the findings, it was necessary to devise a means of giving each plan its proportionate weight in the statistical summaries.

One possibility explored was the use of the figures on number of employees working under the terms of the collective bargaining agreements from which the plans stemmed. These figures were already available for all agreements on file with the Division of Labor Statistics and Research. This approach was found not to be practicable. A labor-management negotiated health and welfare plan does not necessarily relate directly to a particular collective bargaining agreement. More frequently, those we were analyzing did not. Often plans cover workers

under more than one collective bargaining agreement or there is more than one plan covering workers under a single collective bargaining agreement.

Even in those cases where the group covered by a collective bargaining agreement is identical with that covered by a health plan, the number covered is not a consistently good measure of the number of workers entitled to benefits. Varying eligibility requirements and employment conditions cause the proportion between eligible members and employed workers to vary widely among the plans. Some of the employees covered by the collective bargaining agreement do not meet the eligibility requirements established under the plan.

It was finally decided to weight each plan by the number of workers eligible to receive its benefits as of the survey date—May 1, 1954. An accurate figure could usually be obtained from the administrator. This enabled us to report the number of workers actually eligible to receive the benefits to be described.

But what about dependents' benefits? Most plans provided some benefits for the workers' dependents as well as for the workers themselves. It would be interesting to know the number of dependents eligible for benefits under negotiated health and welfare plans. But this figure is difficult to obtain. Where dependents are automatically covered by the plan, the administrator frequently does not have information on the number of dependents who are covered. It became clear that dependents' benefits could be weighted by the number of eligible dependents only if we were willing to make estimates for many plans, estimates based on generalized assumptions.

Instead we chose to weight the dependents' benefits by the number of eligible workers entitled to benefits for their dependents. For this, we had an accurate figure, and there is good logic in its use. It can be reasoned that the benefits are actually provided to the worker. Although he may have no occasion to claim these benefits, the same may be true of any benefit to which he is entitled under his plan.

Designing the Coding System

Coding procedures had to be designed to handle statistical compilation of a mass of diverse data by use of mechanical tabulating equipment.

Organization of material.—Coding sheets served the purpose of organizing the information obtained from various sources as well as putting it into code form so that it could be transferred to keypunch cards for machine tabulation.

The factors common to all plans—financing, eligibility requirements,

general exclusions—and the nonmedical benefits—life insurance, accidental death and dismemberment, and disability insurance—were grouped together in the coding design to go onto one keypunch card.

The medical items filled two keypunch cards. One, with its corresponding code sheet, was designed to summarize the hospital, surgical, and maternity benefits; the other was for physicians' visits, outpatient laboratory and X-ray benefits, supplemental accident benefits, and benefits for poliomyelitis. These were the types of medical care benefits most frequently provided. A column in one card was set aside for identifying plans having any other type of medical care benefit so that hand tabulations of all other benefits could be prepared from notes entered on the code sheets.

The extension of benefits to the worker's dependents has been the chief liberalization in negotiated plans in recent years. About half of the plans analyzed provided employer-financed benefits for dependents. Most of the rest allowed the worker to enroll his dependents under a stated group plan at his own expense. Benefits for dependents, in both of these cases, were analyzed. Since benefits provided for dependents are generally less numerous and less liberal than those for the worker, coding the benefits for both worker and dependents amounted in most cases to analyzing two separate plans. The code sheets were so designed, however, that the coding structure for dependents' benefits coincided with that for workers' benefits, and both sets of benefits were coded by entries in parallel columns on the same sheet.

Coding problems.—Devising a system of codes to translate the subject matter into numerical terms was a complex job, not only because of the diversity of the data but because of the detail in which it was considered necessary to analyze the allowances, and the conditions under which they could be received. In recent years there has been a great deal of discussion about the "fine print" in the health plan booklets, with the implication that there are many limitations on the benefits provided; yet most of the studies made in this field have covered, at the most, benefit allowances without treatment of benefit limitations, exclusions, conditions of renewal of benefits, or eligibility requirements. This survey attempted to include these important items as well.

Benefit allowances not only vary considerably from plan to plan but are not always stated in the same terms. It was not possible to devise a coding system for the medical care benefits which would be applicable to all plans. A medical care benefit may be specified as a fixed cash allowance or as a stated type of service to be provided. Negotiating parties in northern California have chosen both types. For reasons which Dr. Gardipee will go into in more detail, there is no way of con-

verting either type into terms comparable with the other. The two systems have no common denominator and this makes for difficulties in attempting to combine them in a statistical summary.

The basic system for coding medical care benefits was designed in terms of the specification of cash indemnity allowances since this method was the more common. The system devised accommodated all benefits written by insurance companies and all benefits except hospitalization written by Blue Cross, since these were all stated as money allowances. Adding special codes to the section on hospital benefits to accommodate the Blue Cross hospital service benefits enabled us to include all Blue Cross as well as insurance company benefits in our machine tabulations.

Benefits provided by the two other major health service organizations in northern California—Kaiser Foundation Health Plan and California Physicians' Service—were specified in terms so completely different from the majority of plans that it was seldom possible, in coding or at any later stage of the survey, to combine these benefits with the others. As for processing the data, it was easier to hand tabulate the medical care benefits in plans written by these two organizations and add them to the machine tabulations item by item as the data were summarized.

Therefore, renewal conditions were not always the same for each benefit in a plan. To develop data on conditions under which benefit rights renew after the full benefit has once been received, it was necessary to set aside a separate column for coding renewal conditions on each type of benefit.

Eligibility provisions were particularly difficult to analyze. Whereas conditions under which a given benefit renews may be the same for different plans written by the same carrier, eligibility provisions are usually tailor-made for the particular working situation. With the extension of health benefits to employees who do not have regular employment patterns and with the experience in working out more suitable eligibility provisions have come great diversity, and in some cases great complexity, in these provisions. Although initial eligibility, continuing eligibility, and termination provisions frequently relate one to another, this is not always the case, so it was necessary to analyze these three aspects of eligibility separately. Termination provisions had to be further broken down according to reason for termination. Benefits generally continued for a longer time after termination for the employee who became disabled than for one who was laid off and sometimes longer for the employee who was laid off than for one who resigned. Even after dividing eligibility into component parts, it was

difficult to set up a coding system which would account for all of the different variations in type of provision and in time requirements. Many of the plans had to be coded as "other," noted on the code sheet, and later hand tabulated.

Pretesting.—The coding system was thoroughly pretested before starting the analysis. Plans representing different unions, different insurance carriers, and different administrators were included in the pretest. As a result of the pretesting, various columns and codes were added and others were changed. For example, a code was added to record whether or not the hospital room benefit was integrated with the benefit provided by state law. At the outset of the survey it was assumed that hospital room benefits in negotiated plans would always be in addition to the hospital benefits provided under the California state disability insurance law (\$10 a day for the first 12 days of hospitalization). Although most generally (for 73 per cent of the workers) hospital benefits were in addition to the state benefits, the pretest revealed that sometimes they were not.¹

Even though the pretesting was done carefully, it failed to catch some of the recent innovations in health plans which later showed up in the actual analysis. For example, one of the newer innovations in eligibility provisions found in the construction industry is a "reserve hours" provision whereby an employee is credited in a reserve with the number of hours he worked in one month in excess of those needed to meet his monthly eligibility requirement. His reserve hours can accumulate and be used to continue his eligibility in months in which he works less than the minimum number of hours required. Although none of the plans included in the pretest had such a provision, the survey turned up twenty-one which did.²

Tabulation and Summarization

After the plans were coded and a figure on the number of workers eligible for benefits was entered on each code sheet, the information on the code sheets was transferred to keypunch cards and tabulations were run. Provisions were tabulated both in terms of number of plans and number of workers.

Kaiser and C.P.S. plans were added to the tabulations run on medical care benefits. The task of hand adding Kaiser and C.P.S. benefits was somewhat simplified by the fact that Kaiser has a lettering system for the different types of plans it offers, and C.P.S. has a numbering system for its different medical care benefits.

¹ *Labor-Management Negotiated Health and Welfare Plans, Northern California*, California Department of Industrial Relations (1954) p. 17.

² *Ibid.*, p. 60.

In keeping with our objective of presenting the many variations in the health plan provisions, a detailed review was made of the items which our coding scheme had failed to accommodate and which had been thrown together temporarily as "other." At this stage of the survey many of these items could be related to the mechanically summarized data. Identified in specific terms, they were presented along with the more predictable data. Some of the unusual variations represented newer trends and were of interest to those writing new plans. For presentation of the data in final form, a detailed array of the allowances was shown for each different benefit.

For much of the data, statistical summarization was not possible. Statistical averages could not be computed for most of the benefit allowances since the different ways in which the provisions were stated did not afford a common unit of measurement. For example, in the case of allowances provided for hospital expenses other than room and board (usually referred to as hospital "extras"), some of the plans reimbursed the worker up to a fixed maximum amount; others reimbursed the worker up to a fixed maximum amount with additional reimbursement on a percentage basis; some plans provided an unlimited allowance covering all hospital extras; others provided the benefit on a service basis, covering some hospital services completely, some partially, others not at all. Combinations, of course, varied plan by plan. None of the different types could be combined, and within each type there was considerable variation, making it impossible to present a clear picture of the "average" benefit allowance.³

Even where there were few variations in benefit allowances—as in the case of the allowance for a physician's home visit—a statistical average, based on all the plans, could not be computed. Some plans reimbursed the worker up to a specified maximum amount for a physician's home visit with the worker being responsible for the remainder of the cost, whereas other plans required the employee to pay a specified amount per visit with the plan covering whatever additional cost was incurred.⁴

For many of the benefits a meaningful summarization was further complicated because of different provisions relating to the same benefit. For physician's home and office visits the allowance per visit is only one important feature of the benefit. *When* the benefits begin and *how long* they continue are other important aspects. Each of these provisions relating to the benefit were analyzed separately. Because of the many different combinations, it was not feasible to combine all the different provisions relating to a particular benefit.

³ *Ibid.*, pp. 20-27.

⁴ *Ibid.*, table 13, p. 37.

In summarizing the financing of the plans, it was possible to present data in terms of weighted averages. Here, contributions were expressed in various ways: cents per hour, dollars per week or month, or a percentage of the wage. Although expressed in various ways, there was a common denominator, and contributions generally could be converted to a common basis. Dollars per month was used as a common denominator because the majority of contributions are stated in these terms. However, practically all contributions in the construction industry are in terms of cents per hour. Since there was no way of knowing the actual number of hours worked per month by each employee eligible for benefits, it was decided to state all contributions in terms of a "full-time" work month of $173\frac{1}{3}$ hours (40 hours a week) and compute an average contribution rate per month based on the common unit of a "full-time" employee.

By this means, employer and employee contributions to the cost of the plans were shown in terms of weighted averages. These averages made certain comparisons possible. For example, employer contributions which provide benefits for the worker only can be compared with employer contributions which pay for the benefits for both the worker and his dependents.⁵

In the analysis of eligibility provisions a weighted average was computed of the number of hours an employee is required to work to maintain his eligibility for benefits once it has been achieved initially. Here the number of hours of work required per month was used as the common denominator, and plans which stated working-time requirements in other than those terms were converted. Only about two-thirds of the plans had a working-time requirement for continuing eligibility, so the average which was computed was not applicable to all plans in the analysis. With respect to initial eligibility, it was not possible to compute the average time a new employee must work to become eligible for benefits since under many of the provisions the length of time he was required to work depended on the month of the year in which he began work and the number of hours he worked. This was also true with respect to the length of time benefits continued after the employee was terminated.⁶

For most of the items surveyed, provisions could be and were shown in detail in the tabular presentation. The text discussion was in terms of different types of provisions and the modal allowances within these different types.

Now that I have finished discussing the technical aspects of our

⁵ *Ibid.*, pp. 66-71.

⁶ *Ibid.*, pp. 55-65.

survey—weighting the plans, coding the benefits, tabulating and summarizing the data—Dr. Gardipee is going to tell you about some of the basic problems in analyzing medical care benefits and the difficulties in relating benefits to costs.

THE ANALYSIS OF MEDICAL CARE BENEFITS IN LABOR-MANAGEMENT NEGOTIATED HEALTH AND WELFARE PLANS

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In a recent article in the *Social Security Bulletin*, before presenting the findings of a survey of voluntary health insurance, the editor prepared the reader by first making the following apology: "Voluntary health insurance takes such diverse forms in the United States today that lengthy documentation is required to delineate the types of benefits or the number of persons covered for each of these benefits."¹

This is certainly true. Before discussing the methodology we used in analyzing medical care benefits in health and welfare plans, then, perhaps it would be well to identify some of the diverse forms we were attempting to analyze.

A brief description of the ways a health and welfare plan can provide medical care for its members may help in understanding some of the statistical problems we encountered in surveying the types and amounts of care provided by the 325 plans analyzed.

How Medical Care Benefits Are Provided

Medical care benefits under negotiated health and welfare plans are generally established by a contract between the trustees of the plan and an organization which agrees to accept responsibility for providing benefits. Most of the organizations which have agreed to carry this responsibility in northern California are commercial insurance companies. Other "carriers" included in our survey were Blue Cross, California Physicians' Service, and Kaiser Foundation Health Plan.²

¹ *Social Security Bulletin*, U. S. Department of Health, Education, and Welfare (December, 1954), p. 3.

² The commercial insurance companies covered 66 per cent of the workers eligible for benefits in the plans studied, and the three health service organizations, 33 per

Basically, there are two ways by which the carrier may provide a medical care benefit: by cash indemnification or by service.

When a medical care benefit is written on an indemnity basis, the carrier specifies the extent of its financial liability for items of medical care and, according to these specifications, makes cash reimbursement for services rendered. The worker's liability for charges is usually not specified. Upon presentation of a claim, the carrier makes cash reimbursement for each item of medical care covered by the plan, in most cases up to a specified maximum amount. The insurance companies use the cash reimbursement method for all benefits they provide, and Blue Cross, California Physicians' Service, and Kaiser each use it to provide some types of benefits.

When medical care benefits are provided on a service basis, the liability of the "carrier" is expressed in terms of services to be provided and the extent of the worker's liability for charges is usually specified. To provide service benefits, the underwriting organization makes contracts with the vendors of hospital and physicians' services and pays these vendors for providing the services specified in the plan.

Hospital care is furnished on a service basis by Blue Cross. Physicians' care and other benefits, when written by Blue Cross, are provided on an indemnity basis, in the same way as they are provided by insurance companies.

California Physicians' Service also provides hospital care on a service basis. Physicians' care and diagnostic laboratory and X-ray services are on a service basis for a member whose income is below the C.P.S. ceiling. For the member whose income is above the ceiling, physicians' care under C.P.S. plans is on an indemnity basis, since, in addition to the scheduled fee the physician receives from C.P.S., he may charge the patient an amount determined by his own schedule of fees for service. Certain C.P.S. medical care benefits are on an indemnity basis for all workers regardless of income level. For example, there was a monetary limitation which applied in all cases on the liability C.P.S. assumed for hospital maternity care, additional services for accidents, and poliomyelitis benefits.

Kaiser Foundation Health Plan provides hospital care, physicians' care, and laboratory and X-ray services on a service basis. Poliomyelitis benefits and medical care for an accidental injury more than 30 miles from a Kaiser facility are on an indemnity basis.

The contractual relationship between Kaiser Foundation Health

cent. The remaining one per cent were eligible as members of employee benefit associations which procured medical care for their members directly from doctors and hospitals without contracting with a carrier.

Plan and the vendors of the plan's services differs from that which Blue Cross and C.P.S. have with vendors of their service benefits in that the Kaiser plan prepays the vendors the equivalent of a per capita amount whereas Blue Cross and C.P.S. pay a fee for each service rendered.

Problems Encountered in Analyzing Medical Benefits

Though this is a generalized description of the basic methods employed in writing group health coverage, it is, I hope, sufficient to indicate the statistical problems present in trying to measure the kinds and quantities of medical care available under 325 different plans.

It was not possible to put a summary evaluation on one plan which would permit the total value of that plan to be compared or ranked with all other plans. Hence it was not possible to determine the mean amount of total money or services available to a worker for a given period of illness or injury. Variation was so great as to make a "typical" plan, constructed from the modal allowance for each benefit, misleading and concealing. It was decided, therefore, to attempt a comparative analysis of the component parts and to analyze the plans horizontally, so to speak, taking one type of benefit at a time. Thus, we first consider hospital care as provided by the 325 plans, then physicians' care, then laboratory services, maternity care, etc.

This approach made it possible to vary the technique of summarization from benefit to benefit as dictated by the nature of the data on each benefit.

It also provided a framework for achieving our second major objective of presenting a description of the many various ways in which benefit allowances are specified.

Even then, though we were concerned with only a single type of benefit at a time, no completely satisfactory method was found for grouping both the cash reimbursement allowances and the services available. Service benefits could not be converted to a base comparable with cash reimbursement benefits because there are no standard costs for medical care. It was equally impossible to express a fixed reimbursement allowance as covering any part of a service. Hospital costs vary with the hospital used, the type of illness, and the length of stay. Physicians' charges vary according to the nature of the illness and the ability of the patient to pay.

In general, the cash reimbursement provisions could be and were grouped together and classified according to the maximum dollar allowance made by the plans. Service benefits were grouped separately and could not even be classified among themselves. For one reason, we had no criteria for appraising the quality or intensiveness of a service.

Furthermore the service benefits in some plans were established by contractual relationships with vendors which differed from the prevailing organization of medical and hospital practice. Service benefits in other plans employed prevailing practice.

Occasionally, we did encounter a situation where the cash reimbursement benefit was specified in such terms that it was directly comparable with the service benefit specified in some plans. This occurred where the cash reimbursement allowance was open-end instead of a specified dollar amount.

For example, about 30,000 workers stood to be reimbursed in full by an insurance company for the bill they received for a hospital ward bed. Although the great majority of reimbursement and service benefits for hospital room could not be related to each other, this reimbursement benefit for these 30,000 workers is directly comparable to the service benefit of ward accommodations.

Whenever the opportunity presented itself, as it did in this case, we combined directly comparable service and indemnity benefits.

However, it was the rare situation where any combination of reimbursement allowances and service benefits was possible. When it came to analyzing the provisions for hospital extras (that is, the costs for operating room, drugs, supplies, laboratory and X-ray services), it was necessary to treat service and reimbursement separately and to further divide service benefits into those supplying full service and those supplying partial service; partial service being those for which some payment was required from the patient.

Unfortunately, the disparate treatment we were forced to give the data permits little over-all comparison between the two basic methods of providing benefits.

Actually, the net result of the indemnity and service approach to providing benefits is sometimes about the same to the worker. In his recent survey of hospital costs in San Francisco, Dr. Barnett found the commercial insurance companies and Blue Cross paying about 80 per cent of the hospital bill, and the C.P.S. paying almost the same, about 75 per cent.³

Limitations on Description of Benefits

Analysis of the medical care benefits was begun from information available in booklets and certificates of insurance. These were supplemented by personal interviews with various persons who were con-

³ "Availability and Usage of Hospital Beds and Financing of Hospital and Clinic Care in San Francisco," *Report of San Francisco Committee on Hospitals and Health Facilities* (November, 1954).

cerned with the operation of the plans—health plan trustees, insurance underwriters, claims adjusters, business agents, etc. It became apparent that while the booklets stated factually the benefits provided, they were often not too clear on the limitations of these benefits. The renewability of benefits—that is, the conditions under which a new set of benefits would be provided once they had been exhausted—was not clearly stated in all of the booklets. And when stated, the wording used in the statement, in some cases, was such as to leave room for further interpretation. It was frequently stated, for example, that hospital benefits renewed “after complete recovery.” The definition of “complete recovery” would require a policy manual by the insurance carrier.

Investigation into this point led us to realize that there is still another factor in the provision of benefits which cannot be analyzed concretely. That is in the practices of handling claims. Interpretation can be strict or liberal, depending on the insurance carrier and, within the same carrier, depending upon the loss experience of a group. The bare tabulation of stated benefits, then, gives only an indication of what may be available to the worker. It cannot portray the conditions under which the benefit can be used.

In some plans a benefit was provided which the worker could not take advantage of because of the prevailing practice of medicine in the Bay Area. For example, some booklets stated that the charges of a physician anesthetist would be paid if the charge for his services were placed on the hospital bill. This practice is contrary to the accepted methods of billing by anesthetists. (The relationship between anesthetist and patient is the same as between any other physician and patient, and the anesthetists insist on billing the patient directly.) A worker under one of these plans would not have his bill for anesthesia paid.

Cost of Benefits

Since data were available on the financing of the plans as well as on the benefits, the question arose: could any determination of the cost of each benefit be made? On examination, this was found to be impossible. The total plan is being written by the carriers as a package, making it hard to find the cost of each benefit without help from the carriers, and it is possible that the experience of each benefit is not being accounted separately, but only the experience of the package. Moreover, the carriers usually rate each group according to its own experience and thus the average cost varies from group to group. Many of the plans are set up so that money may be returned to the plan at the end of a year depending upon the over-all experience of the plan. This practice presents further difficulty in relating costs directly to benefits.

The only presentation we can make in our report concerning the relation of financing to benefits is that, on the one hand, the data on financing indicate the amounts of money employers and employees are paying into the trust funds and, that the benefits, on the other hand, represent what is available. Exactly how much money is going into paying for the benefits still remains a question.

Dynamics of Labor-Management Negotiated Health Plans

The wide variation in types of benefits offered presents a rather encouraging picture because it denotes a flexibility and willingness on the part of the carriers to write almost any sort of coverage the consumer wishes and can afford. In some cases, the carriers are writing new types of coverage for the purposes of competition, and in other cases the bargaining power of the union group is being applied to encourage the carriers to write plans according to the consumers' desires.

This has forced the commercial indemnity companies into writing prepayment plans, that is, into providing the budgetable items of medical care such as physicians' office visits and outpatient laboratory services rather than insuring true risks. A reaction away from this trend is now seen in the current tendency for these companies to push major medical coverage.

Change in the types of coverage offered by the service companies has been even more marked over the past fifteen years. Both C.P.S. and Blue Cross started writing a standard policy providing more or less complete service. Today both of these companies are providing some benefits on a fixed-limit indemnity basis, and are writing as many varieties of policies as are the indemnity companies.

The Kaiser Plan also has acceded to consumer pressure, although its benefit structure has changed least and its plans are more or less standard. Yet, under pressure from the trust funds, the \$1 patient fee for visits to the doctor's office has been dropped in some plans and the premium adjusted to absorb this cost. Also, the Plan is now supplementing Blue Cross coverage of steel workers, and has added coverage for polio, an item in demand by some consumer groups.

The varied types of benefits would seem to indicate that there is no one formula that satisfies the needs of all the consumers. They also denote an attempt to find such a formula although, at present, much medical care insurance seems to this observer to be purchased on the basis of popular prejudice rather than on a true estimation of the needs of the groups involved. One of the areas for serious research might be an evaluation of whether the benefits provided actually are approach-

ing the needs of the various groups. The listing of benefits themselves, as we have done in this study, means little in measuring the extent to which the needs for medical care are met.

In summary, some interesting points were noted in the provision of medical care benefits. First, there is the similarity in some respects, especially in hospital care, of service and indemnity benefits.

Starting with completely dissimilar methods of underwriting medical care, the service organizations and the commercial insurance carriers are moving toward each other's methods. The service organizations each write some fixed indemnity benefits now, and the insurance companies are tending toward open-end commitments to reimburse, particularly for hospital care.

Another point of interest is the flexibility of the carriers and their willingness to accede within limits to consumer requests for different types of coverage.

Further, the value of a stated benefit may depend upon claims-handling practices. The importance of claims-handling practices has resulted in many claims-handling offices being established apart from the carriers and usually responsible to the trust funds.

With the claims-handling office responsible to the trust fund, the trustees can establish uniform policies in the handling of benefits for their group. In some cases this development is changing the original relationship between the plan and the insurance carrier. Where collections and claims adjusting are combined in an organization separated from the insurance company and where eligibility and termination of benefits are closely tied to the actual period of work as it is in most cases, the plan itself might be said to be making direct payments for medical care services, with the carriers acting as reinsurance companies.

It should also be noted that, with the exception of a few service plans, benefits are still being provided only for illness and not for preventive procedures.

In the final analysis, the field of medical care insurance is a very fluid one. Any study of benefits becomes history by the time it is completed. An encouraging note is that the consumer is influencing the types of coverage offered. The variety of benefits might be said to represent the confusion of the inquiring. This situation is hopeful because it represents an attempt to provide adequate coverage and proper organization for the distribution of benefits. There are no absolute standards in the field and there is a great need for continued research by all concerned to develop insurance or prepaying that will most directly fulfill the needs of the consumer with the greatest possible share of his dollar going for actual benefits.

STATISTICS ON UTILIZATION OF HOSPITAL AND MEDICAL CARE SERVICES

ARTHUR WEISSMAN

Kaiser Services

During the past decade, an increasing number of labor-management groups negotiated welfare funds as part of their collective bargaining agreements. These funds were established in part to provide for the medical needs of the family by setting aside a pool of money to pay for medical services. As experience with these funds has grown, labor and management have become increasingly aware of the fact that not enough is known about the extent to which these funds are actually covering the medical needs of the family.

They have been asking and continue to ask these questions: What medical needs are being met by fund expenditures? Are the medical needs presumed to be covered by the negotiated plans actually being covered? What are the unmet needs? Can the funds allocated for medical care cover greater areas of the medical care needs of the family than they are now doing? Underlying these questions is the conviction which labor in particular has been very articulate in expressing—the conviction that not enough of the medical bill is being paid by these funds. In spite of increasing contributions to these funds, a significant portion of the medical bills is being paid by the individual consumers, rather than by the funds established to cover them.

To provide a focus for our discussion of these questions, let us consider the relationship between the need for medical care services and the use of medical care services. For this purpose, a review of the recorded experience of prepayment programs, as reflected in utilization statistics, is appropriate.

With the dominance of indemnity type plans in the prepayment field, it is not surprising that their forms of operation provide the more common patterns of statistical expression of utilization and costs. For this discussion, I will not differentiate insurance company, Blue Cross, or Blue Shield plans. However, it should be pointed out that the principal sources of published statistics in this group are the Blue Cross plans.

The point of reference for utilization data in such plans is the bene-

fit schedule. Utilization statistics include counts of days of hospital care, hospital admissions, surgical procedures, doctors' visits to hospitalized patients, counts of outpatient diagnostic X-ray and laboratory services, and—less frequently—counts of doctors' services in the office and in the patients' home. Utilization rates are derived when counts of services in such categories are related to membership data. These rates are commonly expressed in terms of number of services per 1,000 persons per year, or number of claims in a year per 1,000 exposed.

For indemnity type plans, benefit payments constitute the principal source of cost data. For example, when these payments are related to specific categories of benefits, such as hospital benefits, the cost of the hospital benefit component of the package of benefits is determined. To these cost data are added such elements as administrative expense and additions to reserves to arrive at total costs of the plan.

When utilization and benefit payment data are analyzed in relation to characteristics of the population (e.g., age, sex, race, industry) experience is obtained for setting premium rates or subscription charges and establishing premium loadings. When these data are analyzed in relation to specific membership groups, information is obtained for experience rating in those plans which operate on an experience rating basis.

The sources of data giving counts of services and benefit payments in indemnity type plans—the data for the numerators needed for utilization and cost computations—are the claims submitted to the plan. Utilization and benefit payment statistics are largely by-product data of the claims procedure mechanism.

This, then, in brief, is the pattern of utilization and cost statistics in indemnity type plans, although there is a considerable variation in the detail with which data for statistical purposes are collected, processed, and analyzed. The basic source of data—the claims procedure—stems from the method used to pay providers of service, that is, the fee-for-service method.

I mentioned earlier that Blue Cross plans have provided most of the published utilization statistics for indemnity type plans. Spokesmen for insurance companies have pointed out that:

Insurance companies necessarily accumulate statistical data for the purposes of establishing new premium rates, testing the rates in use and granting equitable dividends or rate adjustments. For these purposes it is often sufficient to obtain data on premium income and benefit payments without developing a more detailed analysis. In order to avoid incurring unnecessary expenses, the companies generally limit their statistical studies to the minimum essential

to sound operations and to the determination of equitable premiums and net costs. . . .

For the reasons just stated the amount of data available with respect to the frequency of claims and the average duration or amounts paid on each claim are not extensive.¹

With this background, let us now turn to the question of the relationship between need for medical care services and use of services as portrayed in utilization statistics of indemnity plans.

In answering this question, there is no point in dwelling on the obvious fact that such statistics provide information only on those categories of medical care services which are covered under the plans. Therefore, let us see whether we can narrow our sights to the areas of medical care need presumed to be covered in such plans. These plans started out to cover hospital care and subsequently added other benefits. Their major concentration, however, remains in the field of hospital care. Let us now review their utilization experience in this field.

An excerpt from the recently published report of the Commission on Financing Hospital Care will assist at this point.

There is evidence to indicate a wide variation in hospital use among groups in the same locality with the same level of hospital protection provided under the same prepayment plan. Employees of employers with an effective in-plant disease-detection program receive more hospital care, it has been found in some instances, than employees working for concerns without such a program. Data on community clinics for disease detection indicate that the availability of case-finding services increases awareness of the need for medical and hospital care.

One Blue Cross plan found in 1952 that for each 1,000 member-years of exposure to hospitalization among persons who had Blue Cross, but not Blue Shield, there were 124 hospital admissions requiring 773 days of care. Among persons who had both Blue Cross and Blue Shield protection for doctors' services provided only in hospitals, there were 162 admissions requiring 979 days of care. Thus, the group having both hospitalization and surgical coverage had 30 percent more admissions and received 27 percent more days of care than the group with hospitalization protection only.²

The report gives no indication of differential morbidity, differences in age or sex composition, or differences in other pertinent characteristics of the population groups represented in these two sets of statistics to account for the wide variation in utilization rates. Assuming that they were essentially similar population groups—which the author

¹ *Health Insurance Plans in the United States*, U. S. Senate Committee on Labor and Public Welfare, report 359, part 1 (Washington: 1951), p. 106.

² Harry Becker, *Financing Hospital Care in the United States*, vol. 2 of *Prepayment and the Community*, Commission on Financing of Hospital Care (1954), p. 270.

of the report seems to imply—can we say that one of these sets of utilization rates more closely reflects need for hospital care than the other? The data do not permit such a conclusion. What we can say is that these data furnish evidence for the belief, which is held by Blue Cross directors, that higher utilization is associated with combined Blue Cross–Blue Shield type coverage.³ Additional evidence, although more tenuous, is found in data showing that from 1942 to 1952 there has been a significant increase (14 per cent) in the annual number of hospital admissions per 1,000 Blue Cross members in the United States and a comparable increase in the annual number of hospital days per 1,000 members—increases which may be attributed in part to the accompanying rapid growth in surgical and in-hospital medical coverage.⁴

There are other illustrations of wide variations in hospital utilization experience among indemnity plan populations—including the illustration from published hospital claim rates for five insurance companies under individual policies which show a range from 82 to 161 hospital claims in a year per 1,000 persons exposed.⁵

We have seen that increased hospital utilization in Blue Cross plans appears to be associated with some broadening of coverage, such as adding surgical and in-hospital medical benefits to hospital benefits. Should we then expect even greater hospital utilization where hospital coverage is part of a comprehensive prepayment plan, including not only surgical and in-hospital medical services, but also extensive out-patient services—such as doctors' services in the office and in the home, out-patient laboratory and X-ray services? The answer seems to be "no." In fact, there is a growing body of evidence in the utilization data of group practice prepayment plans—for example, the Kaiser Foundation Health Plan—that the availability of comprehensive out-patient as well as in-hospital services is associated with lower rather than higher hospital utilization rates than those reported for indemnity type plans. Lower hospital utilization, where prepaid comprehensive out-patient services are integrated with hospital care, may be attributed to a number of factors. Under arrangements of this type, organized planning of hospital utilization can be effected. Also, diagnostic studies and certain types of treatment which do not require hospitalization can be provided on an out-patient basis without financial burden or inconvenience to the patient. Adequate data are not available at this time to assess properly the effect of these and perhaps other factors which

³ *How Many General Hospital Beds are Needed?*, by Louis S. Reed and Helen Hollingsworth, U. S. Department of Health, Education, and Welfare (Washington: 1953), p. 68.

⁴ *Ibid.*, p. 48.

⁵ *Health Insurance Plans in the United States*, Report 359, p. 109.

may contribute to the lower hospital utilization for comprehensive group practice prepayment plans.

For group practice plans—including such plans as the St. Louis Labor Health Institute,⁶ the Group Health Association of Washington, D.C.,⁷ Group Health Cooperative of Puget Sound,⁸ and the Kaiser Foundation Health Plan,⁹ the annual number of days of hospital care per 1,000 members is in the range of 500 to 800 days, with some concentration near the lower limit of this range. In contrast, the Blue Cross national average in recent years has approximated 900 days of hospital care per 1,000 members per year.¹⁰ Some comparative data, by locality, for Washington, D.C. and northern California, although not conclusive, suggest the same pattern of lower hospital utilization associated with comprehensive coverage provided by group practice prepayment plans.¹¹

The Kaiser Foundation Health Plan recently had a unique opportunity to study this relationship between hospital utilization and comprehensive prepaid health services. A group of 10,000 persons, comprising industrial workers and their families, joined the plan in the San Francisco Bay area in the fall of 1953 under a special contract. This group had had hospital and surgical coverage for several years under a national indemnity type contract. The Kaiser Foundation Health Plan undertook to provide, on a prepaid basis, out-patient medical care as well as those professional services in the hospital which were not covered by the national program. For hospital and surgical services, the Kaiser Foundation Hospitals and The Permanente Medical Group—the organizations which provide services to Health Plan members—bill the indemnity type plan on a fee-for-service basis. The combination of the Kaiser Foundation Health Plan and the national indemnity plan provides the members and their dependents with comprehensive care both in and out of the hospital on a prepaid basis.

Prior to joining the Kaiser Foundation Health Plan, this group is reported to have had a hospital utilization rate of something in excess of 1,000 days of hospital care per 1,000 members per year. During the

⁶ Franz Goldmann and Evarts A. Graham, *The Quality of Medical Care Provided at the Labor Health Institute, St. Louis, Missouri* (St. Louis: Labor Health Institute, 1954), p. 5.

⁷ Dillon S. Meyer, "Annual Report of the Executive Director," *Group Health Association News*, 17 (January-February, 1954), 12.

⁸ *Health Insurance Plans in the United States*, Report 359, table 9, p. 68.

⁹ Arthur Weissman, "A Morbidity Study of the Permanente Health Plan Population; A Preliminary Report," *Permanente Foundation Medical Bulletin*, vol. IX (January, 1951), table 9.

¹⁰ *How Many Hospital Beds are Needed?*, p. 48.

¹¹ *Ibid.*, p. 52. "Today's Most Talked About Hospital," *Architectural Forum* (July, 1954), pp. 108-115.

first year under our Plan, the hospital utilization rate was approximately 500 days per 1,000 members per year.

Again, such data are not conclusive. But they are highly suggestive of a close association between hospital utilization and the comprehensiveness of prepaid health services.

I have carefully avoided inferences of causal relationship from the statistical and related data given. The reason for not assigning causes to explain differences and trends is based on a conviction that, with few exceptions, utilization statistics compiled to date fall into the category of descriptive rather than analytical data. They serve a prime purpose of calling attention to the need for analytical data in this field; they should not, however, be mistaken for analytical data. In short, there is no sound basis at present for relying on utilization statistics as indices of need for hospital care services.

I will revert to this subject in a few moments and illustrate the types of data which I believe are needed to tease apart the components of hospital utilization. Before doing this, it will be helpful to describe two additional categories of descriptive utilization statistics. First, utilization statistics for general population groups, and secondly, statistics compiled for the purpose of comparing hospital utilization among persons with insurance or prepayment coverage as contrasted with hospital utilization among persons without such coverage. Here, again, the question posed earlier will be considered, namely, what is the relationship between need for hospital services, and use of hospital services as portrayed in utilization statistics?

Recently data were published giving hospital utilization rates for the general population in each of the 48 states and the District of Columbia for the year 1951.¹⁴ Rates for the civilian population were based on usage figures for civilian general hospitals as given in the American Medical Association's 1951 Census of Hospitals. It should be mentioned that these are crude data, since the classification "general hospitals" is far from refined and since no adjustments in the computation of rates were made for residence. These rates show wide variation in hospital utilization among the states. Days of hospital care per 1,000 population per year ranged from a low of 696 (Georgia) to a high of 1,662 (Delaware). The hospital admission rate for Montana was twice that of Arkansas. The average length of hospital stay in Rhode Island was more than double that for Idaho.

You may ask whether any patterns were revealed in these data. The answer is "yes." These data for the several states showed a significant association; i.e., a high positive correlation ($r = .76$) between per capita

¹⁴ *How Many Hospital Beds are Needed?*, p. 28.

income and days of hospital service. This high correlation and other characteristics of the general population data do not, however, answer the question as to the nature of the relationship between need for hospital service and use of hospital service.

The same conclusion applies to data assembled by the National Opinion Research Council early in 1953 in a nationwide household survey conducted under the sponsorship of the Health Information Foundation.¹³ These data permit comparison of hospital utilization rates among insured and noninsured persons, i.e., persons with and those without hospitalization coverage. The findings on this point were these: persons with insurance had significantly higher hospital admission rates than those without insurance, and the gap between these rates was much wider in rural-farm areas than in urban areas.

I would like to be able to say that such data throw light on our question of whether use of hospital services is an index of need for hospital service. However, they do not. They do serve the purpose of showing the need for analytical data—the need for information on the elements *affecting* hospital utilization.

Beginnings have been made to provide the types of information which are needed. These merit your particular attention.

Under the supervision of a Medical Advisory Committee appointed by the Council of the Michigan State Medical Society, a survey was conducted in 1952–1953 on the subject of “faulty use” of hospital service by patients with prepaid protection. In this study, conducted by Dr. Harry F. Becker, a member of the staff of the Michigan Hospital Service (a Blue Cross Plan), a series of approximately 12,000 case records in representative areas of the state was studied.¹⁴ The definitions, methods of study, and summary findings are as follows:

“Faulty” use of hospital service, as defined for the purpose of the study in Michigan, is use of in-hospital facilities and services for conditions or circumstances that did not require care on an in-patient basis or the use of ancillary services in accordance with the judgment of the physician-investigator who applied medically determined criteria.

Faulty utilization was found due mainly to (1) overstay, (2) admissions for medical inventory, (3) hospitalization for convenience of patients or family, and (4) excess use of drugs and laboratory and X-ray facilities. Dr. Reveno concluded that some of these *errors in utilization* are due to pressure from the public and some to non-enforcement of contract limitations, but the remainder are due to laxity on the part of the doctor in distinguishing between true need and convenience.

¹³ Becker, *op. cit.*, pp. 268–269.

¹⁴ *Ibid.*, pp. 290–294; see also, William S. Reveno, “Leaks in the Dyke,” *Journal of the Michigan State Medical Society*, 52 (December, 1953), 1323.

Some of the specific findings of this study are of particular significance. One-third of all hospitalized patients whose care was paid by a third party involved some type of "faulty" use of hospital beds. For self-pay patients "faulty" use existed in 14 percent of all cases reviewed. About one-fifth of the payments made to hospitals by the prepayment agency on behalf of the patients whose clinical records were studied were attributable to "faulty" use. With a cost of \$60.60 per year for prepaid hospital care for a family, the cost under Blue Cross in the area studied \$12.20 or 20.1 percent of the total cost was used to finance "faulty" use of hospital services.

... "Faulty" use of hospital facilities and services means higher expenditures for hospital care to the community, whether costs are distributed over the population through prepayment or paid at the time of illness. It not only means that the amount of money required to operate the community's hospitals is higher than if "faulty" use did not exist but a greater investment in facilities than otherwise required. According to the results of the study of some 21,710 available beds in Michigan, on the average approximately 2,430 were occupied by patients who did not require a hospital bed. If the capital investment per bed is estimated at \$16,000, these 2,430 beds represented a community investment totaling about \$38,900,000.

This Michigan study is, so far, the most comprehensive one of its kind. Smaller studies, some involving analysis of hospital records, others involving medical appraisal of patients in the hospital, have been reported on recently with the same general findings.¹⁵

Another type of study in point involves medical evaluation of the need for surgery in cases in which surgery was performed. Two investigations of this type will be cited: one by Dr. J. C. Doyle (reported in the *Journal of the American Medical Association*),¹⁶ and the other by Dr. N. F. Miller (reported in the *American Journal of Obstetrics and Gynecology*).¹⁷ The findings may be summarized in this way: they cast further doubt on the reliability of hospital utilization statistics as indices of need for hospital care.

Dr. Doyle made a study of 6,248 hysterectomies performed in thirty-five hospitals during 1948. The findings included the following: 39.3 per cent of the total number of cases studied involved operations that "may be criticized." "An appalling number of patients aged 20-29 who were subjected to hysterectomy had no disease whatsoever [30 per cent]." Dr. Miller found that "in 33.1 per cent of the cases [of hysterectomy] there was either no disease, or else disease contra-indicating hysterectomy."

¹⁵ Becker, *op. cit.*, p. 294.

¹⁶ James C. Doyle, "Unnecessary Hysterectomies. Study of 6,248 Operations in Thirty-Five Hospitals During 1948," *Journal of the American Medical Association*, 151 (January, 1953), 360-365.

¹⁷ Norman F. Miller, "Hysterectomy: Therapeutic Necessity or Surgical Racket?" *American Journal of Obstetrics and Gynecology*, 51 (June, 1946), 804-810.

Other research is needed in this field. We need studies of underutilization of hospital services—data on patients who require hospital care and are not hospitalized or are hospitalized too late in the course of their illness. Relevant work bearing on this subject includes studies of delay in seeking and obtaining medical attention for cancer of such sites as the breast and the skin.¹⁸ Additional research in the field—including analyses of findings in physical examinations and multiphasic screening programs—should throw more light on the question of underutilization of hospital services.

Finally, we need studies of the relationship of utilization of general hospital care to the availability of other community services. It is important to determine the extent to which people are hospitalized because of the inadequacy or nonexistence of comprehensive diagnostic services for ambulatory patients, and because of the inadequacy or nonexistence of nursing, convalescent, and rest homes, and other institutions for patients who do not require the specialized services of acute general hospitals. The effect of limiting prepaid protection to care in general hospitals deserves special attention in such studies.

Labor-management groups are seeking answers to the difficult questions involved in meeting the medical care needs of the family and in paying for medical care services. Utilization statistics are permitting us to state with more precision the questions which need to be answered in this field. As yet they are not providing these answers. The Michigan study and the types of studies suggested above offer the promise of producing statistics which can assist in answering these questions.

STATISTICAL ANALYSIS OF WELFARE FUNDS WITH RESPECT TO HEALTH INSURANCE

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In a way I feel that I am appearing before you under false pretenses in that there is not a great deal I can tell you regarding statistical methods of analyzing health insurance experience under negotiated welfare plans. However, I believe that since the subject is in your agenda it

¹⁸ G. F. Robbins, A. J. Conte, J. E. Leach, and M. MacDonald, "Delay in Diagnosis and Treatment of Cancer," *Journal of the American Medical Association*, 143 (May 27, 1950), 346-348.

would not be amiss to discuss the reasons for the scarcity of statistical data and explain our method of approach to the problem.

The approach of the insurance companies has been primarily financial, because the first and most essential prerequisite of a successful insurance plan is ability to collect enough premiums to pay the claims and expenses. Therefore our first job is to find out what the various benefits in a welfare plan cost.

When hospital and surgical insurance was first developed it was customary for the employees to pay all or part of the cost.

Whenever the premiums are paid by the employees it is difficult to get more than 75 per cent of them to participate and the result is that the incidence of claim will be a good deal higher among those who participate than among those who stay out of the plan. Prior to 1950 the insurance companies had very little experience on groups in which 100 per cent of the eligible persons were insured as they are in the welfare funds.

About 1940 certain unions on the eastern seaboard, through collective bargaining, laid the foundation for the negotiated welfare fund coverage with which we are now so familiar. Originally loss of time and hospital and medical care benefits were purchased by a set percentage of payroll paid to a trustee. Later when the Supreme Court ruled that welfare plans were a proper subject for collective bargaining, and the Taft-Hartley Act was passed governing welfare trust funds, there was a spectacular and very rapid growth in this type of insurance.

Despite impressions to the contrary, because of a few outstanding exceptions, these plans were put out to bid and in almost all cases the lowest bid got the business.

Now neither the insurance companies nor the employers and unions knew too much about the ultimate cost of health insurance. The insurance companies had their prewar and during-the-war experiences. During the war scarcity of hospital accommodation and of doctors resulted in a favorable loss ratio and costs dropped 20 per cent below the prewar experience. There was also a tendency to reduce premiums further because of the fact that 100 per cent would be covered and not 75 per cent or less as in the cases on which the old premiums had been based. Furthermore a number of insurance companies first entered the group insurance business at about this time and they were very anxious to get enough volume to carry their overhead, thus sharpening competition to the point where many bids were lower than future claim experience warranted.

The large volume of business brought in brokers and consultants of limited experience and as a result the specifications put out to bid

contained many frills in the form of minor benefits which later proved to be subject to exploitation by doctors and hospitals. The variation in these minor benefits made it difficult to compare cases and obtain homogeneous data for statistical analysis.

The natural result of the low rates based on wartime experience showed up in substantial losses from group insurance appearing in the statements of almost all group writing companies in 1951 and 1952.

Under group insurance contracts the insurer has the right to increase premiums at the end of the contract year. However, in the case of welfare plans resulting from collective bargaining there was often no way to obtain a higher premium because the labor contract could not be reopened until it expired, in some cases as much as four years in the future. The solution to this problem was that in some cases the benefits were reduced or changed, while in others the insurance carrier went on absorbing the loss until a new bargaining date arrived.

One very important result of this squeeze was that there was very strong pressure to keep rates at a minimum and to spend as little as possible for administration.

Saving in administration meant that statistical analysis was restricted to examination of benefits as to their dollar and cents cost and not as to the frequency distribution of certain occurrences. As a result the insurance carriers do not have extensive statistics on which to base general averages as to frequency of certain operations or the average cost of such operations. Neither do they have any statistical information as to the type of accident and sickness.

Another factor which discouraged the pure research approach was the rapidity with which the costs were affected by outside sources such as the doctors and hospitals. I wish it understood that this comment is not an inference that doctors and hospitals have been guilty of conscious misconduct with respect to health insurance. I have worked at length with both the medical profession and with hospitals and feel that their impact on health insurance costs is to a great extent involuntary.

It must be remembered that a doctor's first loyalty is to the interest of his patient. If he presents his bill so as to give his patient the best break on the insurance, we cannot blame him. If he sends his patient to the hospital for diagnosis because the bill will be paid by insurance, when he would have done the work in the office if the patient had had to pay the bill, he can well argue that the hospitalization resulted in better medical care.

Where the patient is insured he may well stay an extra day or two in the hospital rather than go home to be a burden on his family dur-

ing convalescence. Familiarity with hospitals has made people only too ready to go there for a few days' observation and rest. If your family doctor is in the city and you live twenty miles out, he can hardly make home calls except at an exorbitant cost to you.

Another factor which has increased claim frequency is the level of indemnity. An increase in benefits which statistically required a 5 per cent premium increase would often result in a 10 per cent increase in claim cost. In other words, when the coinsurance factor decreased, the frequency increased.

Almost invariably factors such as mentioned above lead to a constant change in the incidence of claim under a health plan so that the frequency figures taken off twelve months after the occurrence are of little value by the time they are known. They are usually two years out of date.

Another factor which has discouraged the statistical approach has been the extreme variation in experience as between groups and the complex factors which affect such experience. Among these factors are the following:

1. Sex distribution—this is usually known.
2. Percentage with dependents—seldom known.
3. Average number of dependents—seldom known.
4. Average age—seldom known.
5. Steadiness of occupation—claims may increase 50 to 100 per cent in time of layoff.
6. Type of benefit—the closer to full payment, the greater frequency of claim.
7. Type of industry—usually known.
8. Personnel policy of employer—difficult to weigh.

Because of the problems which I have outlined, most of our statistical information on welfare plans as such is restricted to a breakdown of cost of each benefit as shown by the latest twelve months' experience. Table 1 shows an example of such a breakdown compared with a breakdown of our premiums. This information would give us some indication of the effect on the over-all experience of raising or lowering the individual benefits.

The groups which appear in table 2 give approximately the same average cost despite the variation in cost between employees and dependents. It is, however, possible to have groups which vary widely in total cost.

Table 3 gives six months' experience on a series of policies with identical premium rates and benefits. It will be noted that loss ratios vary from 63.9 per cent to 105.8 per cent. There is no difference in claim settlement procedures. These policies have all been in force for

TABLE 1
HOSPITAL AND SURGICAL COVERAGE: SUMMARY OF CLAIMS INCURRED
FOR PERIOD FROM 12-1-53 TO 12-31-54
(Analysis by benefit)

Benefit	Premiums paid	Incurred claims amount	Loss ratio
EMPLOYEES			
Daily Hospital (\$10 per day).....	\$ 54,543.30	\$ 30,981.04	56.8
Hospital Services (up to \$310).....	49,945.78	53,119.07	106.4
Ambulance.....		609.86	....
Subtotal (Hospital).....	104,489.08	84,709.97	81.1
Maternity (\$100 benefit).....		4,939.89	....
Subtotal (Hosp. and Mat.).....	104,489.08	89,649.86	85.8
Surgery.....	43,957.48	48,118.19	109.5
Obstetrical.....		2,805.37	....
Subtotal (Surgery).....	43,957.48	50,923.56	115.8
Doctor Calls.....	84,311.88	68,975.52	81.8
X-Ray and Laboratory.....	20,897.82	30,676.12	146.8
Add'l Acc. Expense.....	5,764.91	6,647.50	115.3
Poliomyelitis.....	2,161.84	1,402.68	64.9
Total for employees.....	261,583.01	248,275.24	94.9
DEPENDENTS			
Daily Hospital (\$10 per day).....	\$ 81,354.48	\$ 46,776.49	57.5
Hospital Services (up to \$310).....	80,063.14	88,369.15	110.4
Ambulance.....		426.91	....
Subtotal (Hospital).....	161,417.62	135,572.55	84.0
Maternity.....	42,516.25	47,630.30	112.0
Subtotal (Hosp. and Mat.).....	203,933.87	183,202.85	89.8
Surgery.....	97,380.22	88,674.08	91.1
Obstetrical.....	5,667.63	6,403.56	113.0
Subtotal (Surgery).....	103,047.85	95,077.64	92.3
Doctor Calls.....	103,047.85	45,007.89	43.7
X-Ray and Laboratory.....	25,942.12	23,784.66	91.7
Add'l Acc. Expense.....	18,735.97	13,477.97	71.9
Poliomyelitis.....	4,323.69	1,036.77	24.0
Total for dependents.....	459,031.35	361,587.78	78.8
Grand total (employees and dependents).....	\$720,614.36	\$609,863.02	84.6

TABLE 2
HOSPITAL AND SURGICAL COVERAGE: COMPARATIVE RATIO OF CLAIMS TO PREMIUMS
BY BENEFITS

(Analysis by benefit—percentage of claims to premiums)

Benefit	Policy A	Policy B	Policy C
EMPLOYEES			
Daily Hospital.....	56.8	68.9	52.1
Hospital Services.....	106.4	92.8	99.8
Ambulance.....	....	....	....
Subtotal (Hospital).....	81.1	82.7	75.4
Maternity.....	....	....	....
Subtotal (Hosp. and Mat.).....	85.8	83.1	81.1
Surgery.....	109.5	94.8	119.4
Obstetrical.....	....	....	....
Subtotal (Surgery).....	115.8	95.5	128.7
Doctor Calls.....	81.8	54.7	82.2
X-Ray and Laboratory.....	146.8	97.5	131.6
Add'l Acc. Expense.....	115.3	179.4	112.4
Poliomyelitis.....	....	....	....
Total for Employees.....	94.9	81.8	93.5
DEPENDENTS			
Daily Hospital.....	57.5	69.1	57.0
Hospital Services.....	110.4	110.0	109.3
Ambulance.....	....	....	....
Subtotal (Hospital).....	84.0	90.5	83.3
Maternity.....	112.0	91.0	98.3
Subtotal (Hosp. and Mat.).....	89.8	90.6	86.4
Surgery.....	91.1	93.2	94.0
Obstetrical.....	113.0	125.2	64.1
Subtotal (Surgery).....	92.3	95.0	92.4
Doctor Calls.....	43.7	63.7	47.4
X-Ray and Laboratory.....	91.7	70.9	87.3
Add'l Acc. Expense.....	71.9	85.0	77.9
Poliomyelitis.....	24.0	22.6	85.5
Total for Dependents.....	78.8	88.7	78.7
Grand Total (employees and dependents).....	84.6	86.0	84.1

a number of years. From table 3 it can be seen that setting a premium rate initially in group insurance is very much of a guess. Very often a board of trustees will be very suspicious of an insurance carrier who sets a rate of \$10 per month for benefits that some other plan is getting for \$8.50 per month. However, it can be seen from table 3 that identical coverage could cost the highest loss group 65 per cent more than it would cost the lowest loss group.

TABLE 3
PREMIUMS AND LOSS RATIOS: POLICIES WITH IDENTICAL PREMIUM RATES AND
BENEFITS
(Six months' experience)

Policy	Premiums (dollars)	Loss ratio (per cent)
A.....	\$ 80,148.30	86.6
B.....	48,162.40	83.0
C ^a	9,661.60	56.8
D ^a	13,432.80	104.5
E.....	49,633.35	63.9
F ^a	17,846.50	76.1
G ^a	18,132.95	92.8
H.....	804,998.35	79.4
I ^a	17,214.30	76.0
J.....	38,575.05	105.8
K.....	72,591.50	77.3
L.....	314,252.65	75.2
M.....	98,143.35	87.4
N ^a	15,521.00	85.4
O.....	87,749.80	84.3
P.....	57,178.00	87.2
Total.....	1,743,241.90	80.2

^a These groups are too small to give reliable results but the others show substantial variations.

An interesting sidelight in connection with welfare plan experience is a theory once held that many people had foregone operations prior to having insurance and hence the first two years' claim experience would be high but when the accumulated repair work had been completed the costs would reduce.

After more than five years of experience on large cases we have found that there is no evidence to support this theory. Apparently there had been no widespread foregoing of medical treatment. Loss ratios have tended to rise for the first three years and then level off with a much slower rate of increase in the fourth and fifth years.

It is our belief that this is caused by increased awareness of coverage

by the individuals insured together with increased knowledge by doctors and hospitals that a high percentage of patients are insured.

There has been statistical information developed that hospital stays are somewhat longer on the average for insured patients than for those patients who are not insured.

Table 2 shows a comparison of the breakdown percentages for three policies covering workers in the same industry. The average experience under each policy is satisfactory and is remarkably close for the three policies. However, note the violent fluctuation in the percentages as between employees and dependents and on certain benefits. Policies A and C show high loss ratios on employees and low loss ratios on dependents while Policy B shows low loss ratio on employees and a high loss ratio on dependents.

RATE OF HOSPITALIZATION AND AVERAGE DURATION
(Based on a 70-day hospitalization benefit)
(Male employees)

Year	Frequency	Duration	Days per year
1938-39.....	.051	12.5	.638
1940.....	.068	9.5	.648
1952.....	.078	8.1	.627

This could be the result of fewer dependents under policies A and C than under policy B. The higher obstetrical cost on policy A dependents might be due to a younger average age than under policy C. If policy A has a young average age, the dependents will tend to increase over the next few years and the over-all loss ratio will go up.

It is fairly evident that an average frequency study would not give results applicable to any one of the three groups.

Most of the purely statistical information available is to be found in publications of the actuarial bodies and is based primarily on employer-employee data. Whether this is reliable for measurement of welfare plans is not yet known. However, it should be generally applicable in absence of special factors which might affect the insurance. In 1938-1939 the frequency is low and the duration is long, possibly due to persons only going to the hospital for serious illness. Now the frequency is up but the duration is much less which indicates that more persons go to the hospital with minor illness. The fact that the days per year has decreased is probably a reflection of improved medical treatment. Of course the cost of each day in the hospital has increased so that hospital costs are actually much higher than they were in 1938-1939.

Another indication of increase in short hospital stays is the ratio of special services to room and board. With room and board at \$10 per day, special services on a very large case exceeded the daily room and board by over 70 per cent. In other words, for 7,700 days in hospital special services averaged over \$17 per day. This does not include any allowance for special nurses.

Frequency of Surgical Operations

The Society of Actuaries published a table of frequency for operations in 1947 and this table is used by actuaries in measuring comparative cost as between various surgical schedules of indemnity. A new table is expected to be published in 1956 and that will indicate what changes in the frequency distribution have occurred. Any such changes will result from: (1) variation in surgical methods, and (2) changes occurring because of insurance.

It has been found that in industries where the employees live in close proximity to one another the incidence of tonsillectomies and other minor operations rises due to such operations becoming popular.

It would appear that so long as we have numerous groups, each interested in its own experience, that over-all averages showing incidence of hospitalization, surgery, etc., by county, state, or other areas, would not be of any particular significance in arriving at premium charges because the group with a low cost is not interested in helping to pay for the group with a high cost.

No doubt those who are interested in the public health problems will be disappointed at the lack of information regarding causes of medical expense. However, so long as the expense margins of insurers are limited to the present level, statistical research will be very limited and only information necessary to financial operation of the plans will be available.

4

STATISTICAL PROBLEMS IN MEASURING EMPLOYER EXPENDITURES FOR WAGE SUPPLEMENTS

Chairman:

RICHARD A. LIEBES, Bay District Joint Council of Building Service Employees, San Francisco

Paper:

**Problems in the Measurement of Expenditures on
Selected Wage Supplements**

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Washington, D.C.

PROBLEMS IN THE MEASUREMENT OF EXPENDITURES ON SELECTED WAGE SUPPLEMENTS

H. M. DOUTY

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In recent years, the concept of wages in American industry has become immensely complicated by the rise of new forms of compensation. Even twenty-five years ago wages could be characterized largely in terms of rates per hour or other units of time or in terms of earned rates for workers employed under incentive systems of wage payment. While examples of supplementary payment to manual workers could readily be found, these were not sufficiently widespread to arouse marked interest in expenditure measurement.

Within the past quarter of a century, however, a variety of supplemental payments have been incorporated into the structure of employee compensation in most industries. This development began to excite attention during the war. As far as we can determine, the term "fringe benefits" was invented sometime in 1943. In 1942, the Bureau of Labor Statistics issued a comprehensive study of union agreement provisions which contains no reference to the term "fringe benefits" in a detailed index of 30 pages.¹ The term has become a shorthand expression for a whole bundle of compensation practices, the limits of which are most difficult to define.

In fact, there is no comprehensive list of items upon which general agreement exists as to their classification as "fringe benefits." There is a disagreement between labor and management and within labor and management groups on the appropriate classification of particular items.

At the root of the question is the problem of where the line should be drawn between those expenditures that are incidental to the em-

¹ *Union Agreement Provisions*, U. S. Bureau of Labor Statistics, Bulletin 686 (Washington: 1942).

ployment of labor and those that represent labor compensation. Wage expense is obviously not identical with employment expense. A firm must assume a variety of expenses (e.g., for hiring, training, transferring, and separating personnel) that cannot properly be considered part of the wage expense of doing business. The major conceptual problem in this field is where to draw a line between nonwage employment expenses and wages, including remuneration that is supplemental to basic wage rates.

Despite the conceptual difficulties, there is a widespread interest in the development of measures, even though partial, of the magnitude of outlays on supplemental remuneration. There have been a number of private studies in this field, including the well-known series of reports by the United States Chamber of Commerce,² and a most useful report, based upon a series of case studies, prepared by the National Industrial Conference Board.³

The detailed work of the Bureau of Labor Statistics in the field of wages has been devoted historically to the reporting of wage rates or earnings by occupation. Such investigations of the structure of wages have been supplemented for many years by monthly data on gross hourly and weekly earnings obtained from aggregate payroll and employment reports from employers. The monthly hourly earnings series reflects the premium pay items in payroll expense; payments for time not worked, such as holidays, are included in the payroll aggregates but are offset by the inclusion of hours paid for but not worked in the man-hour aggregates; certain types of supplementary compensation, such as employer expenditures for private or legally required pension plans, are not reflected in the earnings data at all.

In its detailed wage surveys in recent years, and in its studies of collective bargaining contract provisions, the Bureau has developed a large amount of information on the prevalence and characteristics of most of the more important supplementary pay practices.

As early as 1947, moreover, the Bureau had developed a draft questionnaire designed for use in the measurement of expenditures on selected items of supplementary remuneration. In a limited form, this questionnaire was tried out in connection with a survey of occupational wages and wage distributions in the basic iron and steel industry in 1951.⁴ Survey efforts on a broader scale were not undertaken partly for budgetary reasons and partly because of the conceptual dif-

² U. S. Chamber of Commerce, *Fringe Benefits, 1953* (Washington: 1954).

³ "Computing the Cost of Fringe Benefits," *Studies in Personnel Policy*, no. 128 (New York: National Industrial Conference Board, 1952).

⁴ *Wage Structure: Basic Iron and Steel, January 1951*, Bureau of Labor Statistics, series 2, no. 81 (Washington: 1951), tables 10-15.

facilities suggested above. The Bureau remained, however, keenly interested in this area of statistical measurement and anxious to explore on a broad front the problems believed to exist in securing adequate data. At the same time, growing public interest in the development by the Bureau of data on the magnitude of supplementary expenditures was evidenced in a variety of ways.

In the fall of 1953, the National Bureau of Economic Research, which is itself conducting extensive historical studies in the field of wages in the United States, generously offered to finance an exploratory study by the Bureau of Labor Statistics of the problems involved in the measurement of expenditures on supplementary employee remuneration. This offer presented an opportunity to undertake the kind of pilot study which the Bureau felt very badly needed to be done as a possible prelude to a systematic program of studies in this field. Accordingly, the offer of the National Bureau was accepted and the study that I want briefly to describe got under way.⁵

Largely because this area of study was essentially new, at least for the Bureau of Labor Statistics, an unusual amount of time was consumed in preliminary work. The questionnaire used in the 1951 steel study, which I mentioned earlier, was completely discarded and an entirely new schedule was devised. Extensive discussions over many months were held with the Bureau's business and labor advisory groups and with representatives of the Bureau of the Budget and other government agencies. The draft questionnaire was pretested by personal visits to a number of establishments and revisions were made as a result of this pretesting work. The problem of sample design and selection was difficult and time consuming. The schedules were actually mailed in April, 1954, with data requested for the calendar year 1953.

Framework of Pilot Study

I now want to discuss the general scope of the survey and some of its underlying assumptions. Some of the decisions that were made were largely influenced by the funds available for the pilot study; other decisions grew out of conceptual and definitional problems.

1. It was decided to attempt to obtain information on employer expenditures on *selected* items of supplementary remuneration rather than on all items that might conceivably be considered as providing

⁵ It is expected that this study will be published as a Bureau of Labor Statistics bulletin during the summer of 1955. A preliminary report under the title of "The Measurement of Expenditures on Selected Items of Supplementary Employee Remuneration—An Exploratory Study" has been given limited circulation for technical comment only. The report was drafted by Joseph W. Bloch of the Bureau's Division of Wages and Industrial Relations.

remuneration above basic wage rates. The items selected for study were:

Paid vacations

Paid holidays

Paid sick leave

Premium pay for overtime—daily, weekly, or for work on specific days as such

Premium pay for work on holidays

Shift premium pay

Pension plans

Insurance, health and welfare plans

Legally required payments—Old Age and Survivors' Insurance, unemployment compensation, workmen's compensation, and State temporary disability insurance.

These items were selected because they are among the most common supplementary remuneration items; they account for a large part of total expenditures, however defined; with the exception of legally required payments, they are subject to collective bargaining. These items for some time have been covered in terms of company and union policies in the Bureau's wage and industrial relations studies.

2. It was decided to attempt to obtain information for "production and related workers" as that term is defined by the Bureau for its regular employment and payroll reports, for most of its detailed wage survey work, and for many other government statistical reporting programs.

3. It was decided that the questionnaire should provide for the reporting of plant practice with respect to the items to be covered, that information should be solicited on the maintenance of time and expenditure records and the summarization of these records; establishments would be requested to estimate expenditures in the absence of actual data, provided the method of estimation was explained. These decisions meant that the questionnaire, at least by Bureau standards, had to be long and complex. The basic methodological purposes of the survey, however, presented no alternative. Even so, considerations of questionnaire length and difficulty precluded the insertion of additional questions it might have been desirable to pose.

4. It was decided to limit the study to manufacturing and to cover all manufacturing industries rather than a limited number to obtain the maximum amount of information concerning methodological problems for a minimum investment in resources. The inclusion of non-manufacturing industries would have spread the survey very thinly and would have reflected a multitude of problems peculiar to the diverse industry groups that make up the nonmanufacturing segment of the economy.

The sample of establishments to which the questionnaire was sent was selected to represent all establishment size groups with a cut-off at twenty employees, all geographic regions, and all manufacturing industries. Starting with a list of establishments for each state, the method followed was selection on a systematic basis of the number of establishments required so that each size group was represented in proportion to its relative importance in terms of employment. The size of the sample resulting from this design was such that the rate of response could be ascertained for the various component groups. If all establishments were to return usable and reliable schedules, estimates of practices and expenditure levels for the selected items could be derived which could be considered reasonably representative of manufacturing as a whole. Even assuming complete response, the sample size was not sufficiently large to permit separate estimates for particular industries. Complete response, of course, was not expected; we did hope for a response sufficiently large and representative to provide an adequate basis for examining the problems to which the study was directed.

5. Partly because the resources available for the study were relatively small, it was decided that the survey should be conducted by mail rather than by field visit. A selected group of key companies was visited by Bureau representatives for the purpose of putting the questionnaire in the hands of the appropriate officials, explaining the background and purpose of the study, and working out arrangements for single plant or multiplant reporting. One follow-up letter was sent to all nonrespondents. In view of the limited objectives of the study, and because of the cost involved, field visits to a sample of nonrespondents were not undertaken.

Response to the Survey

I should like to deal very briefly with the key question of response to the survey. The total sample consisted of 1,105 establishments. Usable schedules were received from 550 establishments, a 50 per cent response. Schedules were classified as usable if the basic data on payrolls, man-hours, and employment were supplied and if the inquiries dealing with records and expenditures for selected items were answered, at least in part.

On an industry basis, response was relatively low notably in industries, such as apparel, where small establishments predominate. However, when industries were grouped arbitrarily into low-wage, medium-wage, and high-wage categories, which have major significance insofar as this type of survey is concerned, the differences in response rates

were not strikingly great. Thus, the average return for the low-wage group amounted to 42 per cent as against 54 and 55 per cent, respectively, for the medium- and high-wage groups. On a regional basis, returns lower than the average were received from companies in the South, although variations in response among regions were not large. A relatively low rate of response from interregional companies was obtained. This appeared to be due to the difficulties of reporting in multi-plant situations and, perhaps a related factor, to the unwillingness of several large multiplant companies to participate in the survey.

As the schedules were received, they were examined for inadvertent omissions and for obvious discrepancies. On the basis of this examination, some schedules were rejected as not usable. In a good many cases, letters seeking additional information or clarification were sent to respondents. All but a few of these were answered satisfactorily. The precise reliability of the information supplied is difficult to assess. The questionnaire was complex. In a large sense, the survey was experimental both to the Bureau and the respondents and must be evaluated in that context.

Was the final sample of 550 usable schedules representative in relation to a question pertinent to all expenditure surveys: Were establishments with higher wages, more supplementary practices, more liberal practices and therefore larger expenditures on supplementary remuneration more likely than other establishments to respond to the questionnaire? The answer to this question could have been obtained through visits to the nonresponding companies to obtain sufficient information to determine the nature of bias in the response. Since such visits were not feasible, the alternative approach was adopted of comparing the characteristics of the final sample with what is known about manufacturing as a whole. We found, for example, that about 75 per cent of the 550 establishments reported collective bargaining agreements in effect for a majority of their production and related workers. This corresponds fairly closely with what we know about collective bargaining coverage in manufacturing; it represents perhaps a slight upward bias. No significant bias in the final sample was revealed with respect to the prevalence of individual benefits, although here again there is a presumption of a slight upward bias due to the underrepresentation of low-wage establishments, small establishments, and establishments in the South. As the report itself shows in some detail, a bias of this nature must be very substantial to have an appreciable impact on aggregate statistics. We also tested the general level of earnings reported by the sample establishments against gross average hourly earn-

ings for manufacturing as a whole, as reported by the Bureau in its employment and payroll series. The level for the sample firms exceeded the level in all-manufacturing by about three per cent, indicating some overrepresentation of high-wage establishments. Here again the difference is small; as it becomes further diluted in the expenditures ratios computed, it may well be considered negligible.

Our general conclusion is that the sample was sufficiently representative to provide a firm basis for analysis of methodological problems, but not for estimates of expenditures for manufacturing as a whole.

Record-keeping Practices and Expenditure Reporting

The successful conduct of studies of expenditures on supplementary pay practices obviously depends largely upon the ability of companies to supply the required information from their records. Accordingly, a major purpose of the pilot study was to determine the current status among manufacturing establishments of: (1) the maintenance of expenditure and/or time records for the selected items of employee remuneration; (2) the frequency with which records were summarized or aggregated for internal company purposes; (3) whether data on actual expenditures could be provided from these records for 1953 for production and related workers; (4) whether, in the absence of precise expenditure records, reliable estimates of expenditures could be made.

By and large, the record-keeping practices of manufacturing establishments, as revealed by this survey, are encouraging for those with an interest in the development of systematic data on supplementary remuneration. There was, of course, considerable variation in the practice of maintaining expenditure records. The best showing, as might have been anticipated, was for legally required payments. There was a tendency to combine premium pay for overtime with premium pay for holiday work and past with current pension credits. For insurance and welfare items, the maintenance of records in combination rather than for particular items was frequently reported. In the case of shift premium pay, the "not kept" rate was exceptionally high, suggesting that many companies view shift premiums as part of basic wages. About half of the establishments surveyed indicated that separate expenditure records for *each* of the selected items in effect in the establishment were kept. Excluding premium pay, the proportion was increased to approximately 70 per cent.

The vast majority of the establishments which kept expenditure records summarized the individual records for their own or other uses. This was true also with respect to time records for the premium-pay

and pay-for-time-not-worked items. This latter point is important, for it was assumed that time records could be utilized as a basis for computing expenditures in the absence of actual expenditure records.

In terms of the collection of expenditure data, the crucial question is not record-keeping practice as such, but the ability of the respondent to provide the requested data from his records. In question, principally, are the form in which the establishment's records are kept and the respondent's willingness to take the trouble to make the necessary summaries from basic records.

About 75 per cent or more of the establishments keeping expenditure records provided actual expenditures for paid vacations, paid holidays, and the legally required items. Most companies could not provide actual figures on the insurance components, including many which indicated that separate records were kept. Only about 30 per cent of the establishments covered in the survey provided actual expenditure figures for all items listed and in effect. Another 46 per cent provided some actual and some estimated figures or, in a few cases, made estimates for every item. In the remaining 24 per cent of the reports, data were absent for one or more of the items in effect. The corresponding proportions for the category "all items except premium pay" were 45 per cent, 42 per cent, and 13 per cent.

Respondents providing estimated figures were requested to describe the basis of their estimates. The methods most commonly used were: (1) calculating expenditures on the basis of related data, e.g., applying an average rate to available data on man-hours; or (2) prorating expenditures as between production and related workers and all employees or the particular grouping of employees covered by the records of the establishment. In general, the methods of estimation appeared reasonable. The differences between actual and estimated expenditure ratios were slight.

Factors Affecting Expenditure Levels

The final portion of the analysis of the results of the pilot survey consisted largely of an examination of some of the factors that account for variations among establishments in expenditure levels for the selected items. It is impossible adequately to summarize this material, and I will try only to highlight some of the findings.

An important point needs first to be made, however. It was pointed out earlier that the substantive results of the survey, in the form of expenditure ratios, cannot be considered representative of manufacturing as a whole. In fact, the averages computed for individual items relate only to establishments reporting an expenditure. An advantage of this

procedure is that it permits the examination of expenditure variations apart from variations in the prevalence of individual practices. Thus, comparisons among establishment groups in holiday expenditures, for example, are limited to establishments reporting expenditures on paid holidays. Some of the general findings follow:

1. There is a wide range among establishments in expenditure levels for the same item expressed in cents per hour, per cent of payroll, and dollars per year per employee.

2. Among the factors accounting for variations in expenditure ratios for a particular item among establishments are type of practice, eligibility requirements, wage level, man-hours of employment, and gross payrolls.

3. Many of the factors influencing gross expenditure levels and the computed expenditure ratios among establishments also account for changes in the same establishment from one year to another. Changes in the volume of overtime work, for example, not only make for changes in expenditures for premium pay but also affect the per-cent-of-payroll ratios for other items. The most unstable expenditures are likely to be for premium pay for overtime and shift work, since expenditures depend largely on the volume of such work, and expenditures for pensions, particularly for funding of past service liability and for profit-sharing trust funds, which may be determined in large measure by the profit position of the establishment and by changes in tax laws.

4. Averages computed on the basis of adjusted man-hours (i.e., man-hours paid for minus vacation, holiday and sick leave hours taken) were about 5 per cent higher than those based on total payroll hours.

5. The data lent themselves to analysis of variations in expenditures by size of establishment, industry group, collective bargaining status, region, and by type of practice and earnings level.

A few random examples will illustrate the detail extracted from the survey. Thus, establishments providing average vacations of less than one week had average expenditures of 2.2 cents per payroll hour, as compared with 8.1 cents for establishments providing two and under two and a half weeks. Establishments providing average vacations of one and a half and under two weeks had average expenditures of 6.1 cents per payroll hour; this varied, by wage level, from 5 cents for establishments with earnings levels between \$1.40 and \$1.60 an hour to 7.5 cent for establishments with earnings levels between \$2.20 and \$2.40. In terms of average per cent of payroll, expenditures for unemployment compensation ranged from 0.7 per cent in the West North Central States to 2.1 per cent in New England. Depending upon the

volume of shift work, the average of shift premiums ranged from less than 1 to 4.5 cents per payroll hour. Contrary to the general impression, employer expenditures in terms of cents per payroll hour averaged slightly more for contributory than for noncontributory pension plans.

I have tried to indicate something of the flavor and results of the Bureau's exploratory study of the measurement of employer expenditures on selected items of supplementary employee remuneration. The study does, I think, advance our knowledge of the problems in this field. It could not, in the nature of the case, provide answers to all of the problems of statistical measurement in this complicated area of study. When the full report is issued, I hope you will find it rewarding.

5

WORK STOPPAGE AND MEDIATION STATISTICS

Chairman:

JOSEPH W. GARBARINO, University of California, Berkeley

Papers:

Work Stoppage Statistics: Concepts and Definitions

MAX D. KOSSORIS, United States Bureau of Labor Statistics, San Francisco

Mediation and Conciliation Statistics

GLENN BOWERS, California Department of Industrial Relations, San Francisco

Statistics of Labor Mediation by State Agencies

C. A. PEARCE, New York State Department of Labor, New York City

Application of Statistical Concepts to Actual Cases

THOMAS J. NICOLOPULOS, California Department of Industrial Relations, San Francisco

WORK STOPPAGE STATISTICS

Concepts and Definitions

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The first comprehensive attempt to obtain national statistics on strikes and lockouts in the United States was made by the Bureau of Census in 1880. Since 1881, however, the United States Bureau of Labor Statistics has—with some lapses—been the country's major source of work stoppage statistics. The Bureau's present concepts and techniques have remained fairly uniform since 1927.

By definition a work stoppage may be either a strike or lockout which idles six or more workers in one establishment for at least one full shift. No attempt is made to differentiate between strikes and lockouts because of the difficulty of determining the exact nature of a dispute under complex conditions. It is entirely conceivable, for example, that an employer may precipitate a strike or that a union may precipitate a lockout.

A *strike* is defined as a temporary stoppage of work by a group of employees to enforce a demand or express a grievance. Usually the dispute is between an employer and his employees. But there are exceptions: jurisdictional strikes between two or more unions, sympathy strikes in which workers try to give support to another group of strikers, or protest strikes by which workers show their dissatisfaction with the action, or lack of action, of local, state, or federal governments.

A *lockout* is defined as the temporary withholding of work by an employer, or a group of employers, to enforce terms of employment upon a group of employees.

Slow downs, or late reporting for work, or early quitting are not included in the Bureau's work stoppage statistics.

Unlike many of the Bureau's methods of gathering mass statistics in other fields, work stoppage statistics do not involve any sampling or

refined mathematical techniques. The attempt is to obtain a complete coverage of all work stoppages involving six or more workers in any one establishment for at least one full shift. Most of the information of such stoppages is obtained from clippings of daily or weekly papers. Additional sources are notices from the Federal Mediation and Conciliation Service, periodic compilations by local offices of state employment security agencies (and funneled to BLS through BES), information from other state agencies (such as labor departments or mediation and conciliation services), employers and employer associations, and international unions.

These sources have been developed over several decades. As might be expected, today's statistics are more complete than those of earlier years.

Data on work stoppages are obtained primarily from questionnaires. These are sent to all parties to a dispute and inquire into: number of workers involved, the dates and duration of the stoppage, the major issues involved, the method of settlement, the settlement itself, and related matters. At times BLS uses its field staff to get the data—when mail questionnaires go unanswered—and at times BLS has the assistance, as in California, of state officials. As is customary with BLS, all individual reports are kept confidential.

Reports

The Bureau issues monthly and annual reports. The monthly reports are of necessity based partly on estimates and supply only the major items of work stoppage statistics: the number of stoppages, the number of workers involved, and the man-days of idleness. The concepts involved are the same as those for the annual report which provides considerably more detail. But the advantage of the monthly report is that it is available within about four weeks after the month of reference, even though some allowance has to be made then for small stoppages not yet caught through the various reporting procedures.

The Bureau's statistical unit is the individual stoppage, regardless of size or of the number of establishments involved. It may involve only one establishment (such as a factory or mine or store or shop) or a number of establishments of one corporation, or of a group of them, or an entire industry.

In counting the number of workers involved, the Bureau includes all workers idled in an establishment regardless of whether or not all of them were involved in the controversy. Furthermore, the number is the peak number and not an average. But it excludes workers idled indirectly in other establishments not involved in the dispute. For ex-

ample, if a steel strike should force automobile plants to shut down because of a shortage of steel, the idled automobile workers would not be counted. Obviously the indirect effects of some strategic stoppages could be far greater than the number of workers directly involved.

Man-days of idleness is the total number of scheduled work days lost by the workers idled in the establishment or establishments directly involved in the controversy. Days not normally worked are excluded in the count.

The duration of a work stoppage, on the other hand, is computed as the total calendar days between the beginning and end of a stoppage. Usually this measure offers no problem. But at times settlements with different segments of an employer group—as may easily be the case in the construction industry—are reached at different times. In this situation the computations of both the stoppage duration and the man-days of idleness are more difficult. Then, of course, there is the lost strike when workers either dribble back to work for the same employer or find work elsewhere. In this type of situation the terminal date used is when the majority of vacancies are filled.

In classifying stoppages by industry, the Bureau uses the S.I.C. This classification regards as an establishment each single work place, such as the factory, mine, or store.

The statistics are compiled also by state and for about 180 metropolitan areas. When stoppages are interstate, the data are allocated.

The classification of *causes* of stoppages offers complex problems. Here BLS uses four major categories:

1. Wages, hours, and fringe benefits.
2. Union organization (representation, union security, etc.).
3. Other working conditions (job security, physical working conditions, workloads, etc.).
4. Interunion and intraunion matters.

When determining which union was involved, the Bureau selects (if there must be a selection) the union whose contract was involved or which took the active leadership in the stoppage. If the conflict was between unions, the stoppage may be classified as jurisdictional, rival union, or cooperating union. Union data are shown by major affiliation, such as AFL, CIO, or independent.

Methods of work stoppage termination fall into five categories: (1) by the direct agreement of the parties without third party assistance, (2) with the assistance of governmental agencies, (3) with the assistance of private mediators, (4) without formal settlement, or (5) because the employer has gone out of business.

One important feature of work stoppage statistics—aside from knowing who, how many, how long, and why—is the indication of how the parties made out. Usually the issues in controversy are settled before the stoppage ends. But sometimes—as in the recent Northwest lumber strike—the stoppage is terminated with the provision that the settlement is to be made later, either by direct negotiation, or with the assistance of mediators, or arbitrators, or even referral to the NLRB, or union boards, or other tribunals.

What the Data Do Not Show

The serious limitations to the data compiled by BLS are two:

1. The data do not measure the cost of strikes either in dollars of wages lost or in the value of production lost.
2. The data do not measure the amount of idleness, or the economic cost, of workers idled who were not directly involved in the controversy, through what the Bureau calls “secondary idleness.”

These limitations, however, are not due to lack of effort by BLS. The Bureau has repeatedly considered the feasibility of attempting to develop information in both of these areas but has reluctantly concluded that it simply is not practicable to do so. It is virtually impossible to develop such data with a degree of accuracy that would warrant publication.

MEDIATION AND CONCILIATION STATISTICS

GLENN BOWERS

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The logical scope of this paper would be a comprehensive system of statistics dealing with collective bargaining and the adjustment of labor-management disputes in the United States. Such a system does not now exist, although important contributions have been made and the time may be at hand for great improvements. The contributions of existing federal and state statistical agencies are many, but wider horizons lie ahead.

In the present discussion, consideration will be given only to the more important factors in a program for maintaining statistics on *the*

adjustment of labor-management disputes, including work stoppage statistics. Particular attention is directed to the needs and conditions created by diverse state laws under which state mediation and conciliation services now function. The record-keeping procedures and the resulting statistical products of conciliation agencies of the states must also be considered when outlining a comprehensive plan for standardizing statistics applicable to all state mediation and conciliation agencies. And, such a plan would fall short of its possibilities if it did not include the facilities and the cooperation of the Federal Mediation and Conciliation Service.

There are two distinct types of statistics which interest parties in collective bargaining and conciliators who sometimes assist the parties. The first type is familiar to all who deal with labor statistics. It consists of regularly compiled and published data which bargaining parties use in negotiations to support their respective positions. Examples of this type are consumer price indexes, current wage data, and other series relating to economic trends.

The second type of collective bargaining statistics is conspicuous for its rarity. Conciliators have real need for it. This type consists of data relating directly to the acts of collective bargaining.

The only important statistics in this bargaining area which are compiled and issued by the United States Bureau of Labor Statistics are those for work stoppages. The recent Bureau of Labor Statistics publication of *Work Stoppages in 1954* is a product of more than a half century of service to industry. It is a thorough and a valuable contribution. From this record we know what has happened. It is good history; but the information contained in this series has little if any significance at the bargaining table today. Of course, the work stoppage statistical series should be continued. However, there is ground for the proposition that methods of compiling work stoppage data should be reviewed, in the light of significant changes in the collective bargaining picture. Current contract negotiations have been brought under potential statistical control through Section 8(d) of the Labor-Management Relations Act of 1947. Parties are required to file with the Federal Mediation and Conciliation Service and with state conciliation services, notice of desire to change existing contracts. This marks the beginnings of collective bargaining for the vast majority of all labor-management agreements, other than those of strictly local significance. The federal and state conciliation agencies compile data for their respective reports. The coordination and the comparability of their statistics of operations are accidental or nonexistent.

Collective bargaining is a many-sided institution. It functions mainly

in the economic areas of industry and commerce. Collective bargaining is an instrument for constructive cooperation between parties to labor-management agreements. It serves also as a stabilizer in the conflict of interests between employers and their employees. Interest groups in collective bargaining negotiate through their representatives, usually subject to ratification of agreements by the primary parties. The structure of bargaining organizations is often complex and their policies and procedures are sometimes devious. The process of bargaining varies from the simple offer-and-acceptance pattern of a business contract to the elusive situations in which there are many cross-currents of group needs and goals.

The statistics of labor-management relationships are especially dynamic in organizations and agencies which deal with collective bargaining in action. Statistics fall into three categories as to their use-value for negotiators: those which are available during the negotiating period; those which are available only for future planning; and those which are of historic and academic interest. The bargaining parties want pertinent data on issues which are currently being argued; otherwise statistics have little value for them. Government conciliators are concerned with "hot" information and with statistical facts, if possible before they happen. The conciliator who learns of a work stoppage after the men are on the streets, has no opportunity to prevent the crisis. Thus, to negotiators and to conciliators, the most important statistical factor in the adjustment of labor-management disputes is timeliness.

Bargaining parties have greater need today than ever before for current data on developments pertinent to their own problems, but in different groups and industries. To a large extent the employer and labor organizations and the counselors and research institutions are supplying this need. However, neither the partisan consultants nor the private research agencies nor such qualified neutral bodies as industrial relations institutes of universities and the legislative services, are in a position to compile and deliver regular statistical series in the specific area of collective bargaining, such as those which the Bureau of Labor Statistics is capable of compiling with the cooperation of federal and state operating agencies.

Research agencies, institutes of industrial relations, legislators, public administrators, and the negotiators themselves have their separate and overlapping interests in collective bargaining. Questions are asked as to how many labor-management agreements there are, where they are, when, why, and how the negotiations were conducted. What were the results, what factors contributed to the settlement of issues, and what were the significant changes agreed upon?

While a plea is registered for more and better collective bargaining statistics for the use of employers and labor and their representatives and for other vitally interested groups named, we have a special concern for the needs of state and federal agencies engaged in the conciliation and mediation of labor-management disputes. Some five hundred government conciliators and mediators are, in a literal sense, servants of collective bargainers. These men and a few women are serious public servants. They are given few tools to work with aside from their own experience and studies. On the other hand there are available many potential tools which might be provided to great advantages.

Regular compilation and distribution of data on collective bargaining in action would enhance both the effectiveness of conciliators in many cases and would make possible the direction of services to the points of greatest need, specifically to those disputes in which there are critical threats of work stoppages or actual interruptions of productive operations. This much needed program should be developed with a view to the ultimate integration of state and federal statistical records and reports dealing with the statistics of labor-management contracts and with dispute adjustments. The logical participants in a program of this scope under the auspices of the Bureau of Labor Statistics would include: the National Labor Relations Board, the Federal Mediation and Conciliation Service, the Social Security Board, corresponding state conciliation and mediation services, and statistical agencies of the respective states. There will also be a continuing place of leadership and guidance for statistical advisory committees such as those already cooperating with administrative agencies in many areas and associations.

Turning to the practices and problems of reporting collective bargaining statistics in the operations of state and federal conciliation agencies, the first striking fact is that each agency has a different concept of definitions, classification of data, form of presentation, and terminology. This state of affairs within the agencies responsible for service in the adjustment of labor disputes has created a statistical vacuum. Until the organization in 1952 of the Association of State Mediation Agencies there has been no effective medium of communication between the states in this field. The Federal Mediation and Conciliation Service has followed a policy of isolation from state agencies and therefore has applied no effective leadership outside its own operations for the improvement of service to collective bargaining parties or for the betterment of relationships with state conciliation and mediation services.

The Bureau of Labor Statistics has confined its regularized production of collective bargaining statistics to its historical work stoppage

series. The need for a comprehensive program will be filled in due time; but steps should be taken soon to study and plan for the extension of collective bargaining statistics beyond the present limited work stoppage area. Meanwhile, the Association of State Mediation Agencies is studying the problems of standardization of record keeping and of statistical reporting of state agency operations. The scheduling of collective bargaining and mediation statistics for today's session of the Pacific Coast Committee on Social Statistics is evidence of the interest of the Social Science Research Council in this subject.

It can scarcely be expected that professional statisticians and operating administrators will view with equal fervor the need for work stoppage information at the time when the bargaining parties are approaching or have just reached the breaking point in negotiations. Nevertheless, mediation and conciliation agencies will not cease in their efforts to anticipate the crises of economic action and to discover the work stoppages before they occur.

STATISTICS OF LABOR MEDIATION BY STATE AGENCIES

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No member of the industrial relations statistics family has had a more obscure status than data pertaining to mediation activity. Research workers and statisticians have given little attention to data on the mediation process, and mediation officials as a group only recently have evidenced real interest.

The minuteness of mediation in the vastness of governmental activity probably explains part of this inattention. The view that mediation is an art rather than an operation—an accomplishment that cannot be measured or evaluated in quantitative terms—may be a factor. One may surmise that there is a skepticism among mediators about statistics, born of long association with the way data are used in the negotiation process, that may also have contributed to this indifference.

Examination of the annual reports of fifteen state mediation agencies¹ reveals that while all contain data on the number of cases, the

¹ These were reports available at the time this paper was prepared. States most active in mediation probably are overrepresented. The 15 are Alabama, California,

concept of a case varies so widely as to make doubtful the significance of comparisons of case load, except possibly for limited groups of states. Eight of the states did not present any breakdown of cases by extent and kind of mediation service given. Four states did not distinguish between cases involving and not involving work stoppages. Seven states did not indicate the source of cases. Twelve failed to show circumstance of dispute, while ten gave no data on issues involved. Moreover, there was little uniformity in classification bases among the states that did show these various breakdowns. In the case of six states the mediation data were combined in one or more tables with statistics on representation elections and arbitration, thereby impairing their value as measures of mediation activity. There was scarcely any reference in the reports to the question of mediation effectiveness.

Several developments seem now to be moving state mediation officials toward a basic reexamination of the role of statistics in their organizations. Foremost among them has been the organization, in 1952, of the Association of State Mediation Agencies. Three annual conferences of the Association have helped bring an awareness of values in the exchange of experience and of the usefulness of statistics in this process.

Concern about the duplication of mediation services was a factor in the organization of the Mediation Association. This concern reached the point where the mediation and conciliation committee of the International Association of Governmental Labor Officials reported at the Association's 1954 annual convention that, "The Committee regards as highly unsatisfactory present Federal-State relationships in the field of mediation and conciliation. Destructive competition now predominates and in most states constructive cooperation is given no more than lip service."³ There is a feeling that statistics somehow can help to define the scope of the problem and be useful in pointing up a solution, whether administrative or legislative.

Recent probings of university research into the subject of mediation also have stimulated interest among mediation officials in analysis. This field has proved to be a special challenge to psychologists and sociologists, who have confidently seized the initiative in explorations into the meaning and role of mediation.

Finally, a growing tendency to rationalize the procedures of government agencies may be a factor. Methods and procedures analysis and control rely heavily on measurements of workload, activity, output, and effectiveness.

Colorado, Connecticut, Illinois, Michigan, Minnesota, New Jersey, New York, North Carolina, Rhode Island, South Carolina, Washington, West Virginia, Wisconsin.

³ Quoted in Arthur Stark, "Are There Too Many Mediators," *Labor Law Journal*, 6 (January, 1955), 40.

Thus for various reasons mediation statistics may command greater emphasis and interest than in the past. Whether they will come to have a vital role in the operation of mediation agencies is a question that will take some time to answer. My task here today is exploratory, using New York's experience as a starting point.

First, let me restate the ends to be served by mediation statistics along lines that have been followed in analyzing the operations of other agencies of state labor departments.³ These are the measurement of (1) workload, (2) activity, and (3) effectiveness.

Measurement of Workload

The basic measure of the mediation workload is the number of labor disputes for which the agency has a mediation responsibility. Legislation defines its outside limits. Administrative standards and practice may fix narrower limits. Workload is one of two basic measures of staff requirements. The other measure is staff productivity (e.g., cases per mediator); and since productivity may vary according to the size, duration, industry, circumstance, and other characteristics of the dispute, the measurement of workload may be defined along these lines.

Underlying uncertainties.—The New York State Labor Law (Section 753) empowers the mediation board to intervene in an existing, imminent, or threatened labor dispute. Upon the direction of the governor, the board must intervene. The declaration of policy (Section 750) to Article 21, which establishes the mediation board, states that

strikes and lockouts and other forms of industrial strife, regardless where the merits of the controversy lie, are forces productive ultimately of economic waste . . . and representatives of employers and unions engaged in disputes which threaten to curtail the production or distribution of goods or the providing of services should voluntarily submit such disputes to the agency created by this article prior to engaging in a strike, lockout or other cessation of employment; and should participate fully and promptly in any meetings which may be arranged by the agency for the purpose of resolving the dispute.

The New York agency interprets this language to mean that the law intends, though it does not require, that the board as a general rule intervene in cases of existing or threatened work stoppages, and that it offer its services when the parties submit a dispute to the agency.

The California law specifically requires intervention by the mediation agency if any bona fide party requests intervention and empowers the agency to proffer its services when a work stoppage exists or is

³ C. A. Pearce, *Administrative Statistics: Their Functions in State Labor Departments*, New York State Department of Labor, Special Labor News Memorandum no. 42 (1953).

threatened.⁴ Thus in practice at least the responsibilities and therefore the nature of the potential workload of the New York and California agencies are essentially the same.

It appears that law or practice in a number of other states add up to about the same responsibilities.⁵

The overlapping jurisdictions of the federal and state mediation agencies create an underlying uncertainty about the dimensions of the workload of any board. The federal law directs the Federal Mediation and Conciliation Service to "avoid attempting to mediate disputes which would have only a minor effect on interstate commerce if State or other conciliation services are available to the parties." As Arthur Stark has pointed out, "The State laws, however, make no distinction between types of dispute or their effects on commerce. But, significantly, both the federal and state statutes in general use the word 'may' and thus in effect give to the agencies discretion in determining how to exercise their powers and duties."

The FMCS and the New York State Mediation Board in 1948 negotiated an agreement which provided that the federal agency would normally refrain from intervening in "minor" disputes and the state in turn normally would not intervene in disputes of a national or multistate character which threatened a grave and serious effect on interstate commerce. As to the bulk of cases, which fall in between these classifications, the desires of the parties were to be given great weight; and, in any event, where one agency had called a mediation conference, the other agency would not lend its services without first obtaining clearance from the first. As much as the agreement has contributed to a workable relationship between the two agencies, it obviously leaves a substantial twilight zone, for there is uncertainty about the federal agency's definition of "minor effect."⁶

The absence in most state laws and the federal law of a clear mandate that the mediation agencies intervene in labor disputes, even in disputes involving work stoppages, has fundamental implications for workload measurement, as well as raising a profound issue of mediation policy. Should mediation officials, when in their judgment negotiations are not progressing satisfactorily, take the initiative in making their services available to the parties? Should they proceed on the

⁴ *California State Conciliation Service, 1954*, Department of Industrial Relations, pp. 11, 22.

⁵ *A Guide to State Mediation Laws and Agencies*, U. S. Bureau of Labor Statistics, bulletin 162 (Washington: 1953).

⁶ See A. Stark, *op. cit.*, pp. 38-39. The agreement referred to is set forth in appendix C of the *First Annual Report of the Federal Mediation and Conciliation Service for Fiscal Year Ended June 30, 1948* (Washington: 1949).

theory that early predispute intervention may prevent critical collective bargaining problems later? Or may progress toward mature industrial relations and industrial peace in the long run be handicapped by too much mediation? Is intervention when the parties have expressed no real desire for mediation the point at which the service ceases to be constructive? When does mediation become "meddling," or "benevolent trespassing"?⁷

With these major conceptual and jurisdictional uncertainties, state mediation workload analysis must necessarily be inconclusive.

Work stoppage cases.—That part of the mediation workload which consists of work stoppage cases can be approximated if there are reasonably good records of stoppages occurring in the state.

New York's work stoppage workload for the year 1954 was approximately as follows:

Total number of stoppages	575 ^a
Less federal interventions	86 ^b
Remainder	489
State agency interventions	193 ^c
Involving 5 or more workers	168
Involving less than 5 workers	25
Remainder	296

^a All known work stoppages arising out of labor-management disputes and continuing at least a full day or shift.

^b Includes interventions of Federal Mediation and Conciliation Service only.

^c Includes cases in which there was intervention by both the State and federal agency. State cases include only those in which there was active mediation.

Data compiled by the New York Labor Department's Division of Research and Statistics form the basis of this estimate. United States Bureau of Labor Statistics work stoppage data for New York are inadequate for this purpose because they do not include stoppages involving fewer than six workers, whereas the New York Mediation Board does intervene in these smaller cases.⁸ The BLS data, moreover, do not show precisely how many government-agency interventions there are.⁹

⁷ See discussion of William H. Davis and David L. Cole in *Proceedings of Second Annual Meeting of Association of State Mediation Agencies* (1953); also Allan Weisenfeld, "Mediation or Meddling," *Industrial and Labor Relations Review*, 7 (January, 1954), 288-293.

⁸ New York data on the total number of small stoppages undoubtedly are incomplete, because it is virtually impossible to keep track of all small walkouts and strikes.

⁹ BLS asks employers to report, not intervention as such, but whether or not the stoppage was terminated with the assistance of a government agency. Thus its reports are limited to terminations and presumably to cases in which an agency rendered some assistance, in the employer's judgment.

The data show that the New York board failed to intervene in 51 per cent of the total number of stoppages and in 61 per cent of the remainder after subtracting federal interventions. At first blush this seems to be a strikingly low rate of intervention.

An analysis of 622 work stoppages ending in the two years 1953 and 1954 in which neither the State Mediation Board nor the Federal Mediation and Conciliation Service intervened reveals that these stoppages averaged fewer workers than stoppages in which there was intervention. There were relatively more stoppages in the employee size groups under 20 and 20 to 99 than in all size groups combined. Overall, 76 per cent of the stoppages in which there was no intervention involved fewer than 100 workers. Nine per cent involved less than six workers, 29 per cent from 6 to 19, and 38 per cent from 20 to 99 workers.

No-intervention stoppages were of shorter duration than those in which there was intervention. A third of the no-intervention strikes lasted one to three days. Half lasted less than a week. This compares with about 40 per cent in the case of all stoppages. About 13 per cent were of more than one month's duration, as compared with approximately 20 per cent for all stoppages.

A somewhat greater proportion of the no-intervention strikes than of those in which there was intervention occurred in nonmanufacturing industries. Higher proportions were observed in trade and services. In manufacturing, a decidedly higher proportion of no-intervention stoppages occurred in apparel. The high proportion of no-interventions in the garment trades may be explained in part by the fact that stoppages often arise from the unwillingness of individual employers to go along with industrywide agreements, which are characteristic in New York City. Typically in these cases, the union will not consent to any concessions from industrywide standards; therefore it has nothing to mediate. Well-developed machinery for settling disputes under contracts in these industries also is a factor.

The fact that half of these no-intervention cases lasted less than a week means that in many cases settlement was reached before the agency was able to intervene.¹⁰ A second main reason for nonintervention is that the state and national labor relations boards have already intervened on the basis of petitions involving employee representation. It is probable that there were over 250 such cases during the two years

¹⁰ The New York Mediation Board endeavors by every available means to learn promptly about all stoppages. These include police reports in New York City, employment service reports of disputes, and weekly reports from the Division of Research and Statistics (which are based on all available sources). The board checks into virtually every strike it hears about, if information gets to it before a settlement is reached.

1953 and 1954. In other cases the parties indicate that they do not need the assistance of a third party. Several of the larger cases involved stevedoring, where the board usually does not intervene. Some were local New York City transportation cases, which were mediated by the city agency or the mayor. Some were railroad and airline cases under the jurisdiction of the National Mediation Board.

No-stoppage cases.—Available statistics are quite inadequate as a basis for estimating New York's workload of cases not involving work stoppages, even when the simplifying assumption is made that the state agency claims as part of its workload all disputes irrespective of the desire of the parties for intervention. Any estimate of the number of such cases has a tortuous path to follow among the few statistical landmarks. This is evident from the following itemization (data for year 1954):

- A. Interstate Commerce Cases
 - 1. Renewals and reopeningsUnknown
 - a. T-H notices3,200
 - b. Plus disputes in which no notices were filedUnknown
 - c. Less federal interventionsUnknown
 - d. Less settlements reached following notice but prior
to any interventionUnknown
 - 2. Plus initial contracts
 - a. N.L.R.B. certifications400 (est.)
 - b. Plus first union recognitions where no dispute over
bargaining agent existsUnknown
 - c. Less contract settlements reached following certification
or recognitionUnknown
 - d. Less federal interventionsUnknown
- B. Plus Intrastate Commerce Cases
 - 1. Renewals and reopeningsUnknown
 - a. Requests for service and own-motion interventions250 (est.)
 - b. Plus all other disputes involving renewals
and reopeningsUnknown
 - 2. Plus initial contracts
 - a. S.L.R.B. certifications208
 - b. Plus first union recognitions where no dispute over
bargaining agent existsUnknown
 - c. Less contract settlements reached following certification
or recognitionUnknown
- C. Plus Grievance Disputes
 - 1. Requests for service and own-motion interventions140
 - 2. Plus all other disputes involving grievances not subject
to arbitrationUnknown

D. Plus Union Recognition and Jurisdiction Disputes	
1. Petitions to national or state labor relations boards	
not terminating in certification	Unknown
2. Less settlements voluntarily reached	Unknown
E. Less Disputes Involving Work Stoppages	575
Total	Unknown

I do not suggest that the data characterized as “unknown” are beyond the reach of investigation. But in large part their practical values would not justify the amount of effort that would be required to dig them out.

In figuring the workload of nonstoppage cases, then, one is thrown back on past experience. Projections may be based on the experience of the preceding year, the average of several years, or other benchmarks drawn from past records. Allowance naturally will be made for any future change in policy, such as a more or less aggressive exercise of initiative in intervention, and for any inability in the past to handle all the requests for services made upon the agency.

Seasonal fluctuations in workload.—Seasonal fluctuations further complicate the task of figuring the mediation workload. Seasonal indexes calculated on the basis of New York’s monthly intake of cases during the eight-year period 1947–1954 show that volume reaches a peak in March, at a point 24 per cent above the year’s average. The period April to June is approximately 10 per cent above average, while during the October-to-December quarter the volume about equals the average for the year. A lull occurs during the summer quarter, July-to-September, when activity ranges from 79 to 87 per cent of average.

There is a considerably wider fluctuation in seasonal indexes of number of work stoppages than of mediation cases and very little correlation between the two.

In an agency such as New York’s, dovetailing of arbitration and mediation activity is a possible method of stabilizing activity during the year. The peaks and valleys in arbitration, however, tend to coincide with those of mediation, if one may judge by the pattern of the past several years.

Measurement of Activity

Measures of activity include statistics that show the volume and characteristics of mediation cases and the amount of effort expended by the mediation staff.

In addition to purely descriptive functions, these measures have several potential values. When related to the workload they are one measure of the extent to which the agency is doing the job it is sup-

posed to do. When related to case intake, last year's output, available staff, and similar benchmarks, they indicate whether current production goals are being met and may reveal differences in efficiency. They form the basis of productivity ratios, which when related to workload, indicate staff requirements. They are a means of comparing operations of different units in a state agency, of different states, or of state and federal or local agencies, and thus of discovering differences in cover-

INDEXES OF SEASONAL VARIATION IN NUMBER OF WORK STOPPAGES AND NUMBER OF MEDIATION AND ARBITRATION CASES RECEIVED BY BOARD OF MEDIATION, NEW YORK STATE
(Annual average = 100.0)

Month	Work stoppages	Mediation cases	Arbitration cases
January.....	101.1	105.3	96.5
February.....	84.0	96.5	88.7
March.....	106.4	124.0	110.8
April.....	98.5	109.0	104.4
May.....	113.4	109.3	104.1
June.....	107.5	111.7	123.1
July.....	95.8	78.8	90.6
August.....	120.9	83.9	89.1
September.....	104.3	86.7	93.0
October.....	124.4	100.5	98.8
November.....	90.7	97.3	95.6
December.....	53.0	97.0	105.3

NOTE: Indexes for work stoppages (involving 6 or more workers) were based on experience during the period 1947-1953, and for mediation and arbitration cases on the period 1947-1954. The link-relative method was used in calculating the indexes (data were adjusted for secular trend).

age, emphasis, and procedure. This in turn may suggest needs for change, correction, and improvement. Substantial uniformity in measurements of course is required for this purpose. Finally, they satisfy public curiosity about what the agency is doing and are information of interest to students of industrial relations.

What sorts of detail do these uses require?

Characteristics of mediation cases.—Principal characteristics of mediation cases include work stoppage status, extent of mediation activity, nature of disposition, source of case, number of employees involved, industry, circumstance of dispute, issues, and union affiliation.

Work Stoppage Status.—Most persons agree that it is desirable to make a division of cases between those involving and those not involving work stoppages. Largely as a matter of interesting by-product information, New York endeavors to distinguish between two kinds of

stoppage, according to whether or not the stoppage was contrary to the agreement. New York also classifies stoppages by time of occurrence—whether prior to or during the intervention.

The main problem arises among cases not involving stoppages: that of distinguishing between cases in which there is a threat of a stoppage and those in which there is not. As previously indicated, New York's law does not contemplate intervention in no-threat cases except on request of the parties. No-stoppage cases in New York are classified according to whether (1) the union has specifically authorized a strike; (2) in the judgment of the mediator there is a strike threat, although a strike was not specifically authorized; and (3) there is neither authorization nor threat of strike. Authorizations and "threats" accounted for 70 per cent of the cases and 84 per cent of the employees involved in no-stoppage cases in 1954. About 42 per cent of the "no-threat" cases were initial contracts and contract renewals and reopenings. Intervention in virtually all "no-threat" cases was at the request of one or both of the parties.

An alternative view of no-stoppage cases is that since a strike threat is implicit in all disputes over contract terms, it is not significant to determine whether or not there is specific strike authorization or to form a judgment whether a strike threat actually exists. Judgments about the existence or nonexistence of strike threats are perforce highly subjective and not the material from which sound and comparable statistics can be constructed. Under this alternative, a distinction of some significance is whether or not an agreement prohibiting a cessation of work applies to the dispute. This distinction is most illuminating when the cases are classified by circumstance of dispute, that is, dispute over the terms of contract or dispute under the contract.

Extent of Mediation Activity.—New York distinguishes between two degrees of mediation activity: (1) Cases in which one or more joint conferences are held with the parties, and (2) cases in which the mediator, without a joint conference, talks with each of the parties separately by telephone or individual conference. The second kind is called "indirect mediation activity." This distinction follows the traditional view that full-fledged mediation requires joint conference, although it does not necessarily imply that the separate conference method may not be as effective as joint conferences. Indirect mediation activity accounts for a very small part of the total in New York—around 5 per cent.

At what point is a mediation agency contact docketed and counted as a case? New York docketes the case when a joint conference is scheduled. It docketes cases at this stage because it fully expects that the parties will come in for a joint conference and it has set aside time for

a conference. Moreover, it believes that sending out notices often contributes to a settlement by inducing the parties to take some kind of action. Some of these cases never reach the point of joint conference. In fact, between 15 and 20 per cent of the total volume of docketed cases are withdrawn or settled prior to any mediation.

By hinging the docketing of a case on the scheduling of a conference, the New York agency fails to record some dispute situations in which it does render a mediation service. In one of these, the agency carries on discussions with both parties separately; because of the character of the relationship between the parties, however, neither party is ready to come in and a joint conference actually is never scheduled. In the other situation, the agency, upon the request of one of the parties, gives advice on an existing or impending dispute.

Both of these activities—certainly the former—might be included in the agency's case load. Otherwise a separate count might be made of the number of these "consultations." This was in fact the agency's practice at one time.

The California agency keeps a record of "investigations," which are assignments "to develop information as to the nature of a dispute and possible consequences of work stoppage," as a basis for determining "the advisability of proffering its services to the parties."¹¹ Although California does not consider the investigation as such to be a case, that might be one way of doing it.

Until the year 1953, the Federal Mediation and Conciliation Service reported three classes among cases determined to be within its jurisdiction. Briefly, these were, (1) "active cases," in which the mediator is actually participating in joint and separate conferences; (2) "consultation cases," in which the mediator gives advice and assistance to either or both parties in person, in writing, or by telephone, but in which there is no joint conference; and (3) "stand-by cases," in which, while the mediator's services are not needed at the time, the mediator keeps informed concerning the issues and stands ready to intercede more actively, if, and when, his services become necessary. In 1951, 45 per cent, and in 1952, 52 per cent, of the cases were in the "stand-by" category.¹²

Obviously, if there is to be a sound basis for comparing the case load of agencies engaged in mediation there must be uniformity in the concept and docketing of the mediation case or sufficient detail to make possible comparisons of case volume at each stage of mediation activity.

¹¹ *California State Conciliation Service, 1954*, p. 22.

¹² *Fifth Annual Report, Federal Mediation and Conciliation Service Fiscal Year 1952* (Washington: 1952), p. 39.

Nature of Disposition.—Once docketed, cases must eventually be closed out in some manner. In New York, the types of closing are: (1) agreement reached by parties at conference (including agreement to arbitrate); (2) agreement reached by parties following the conference; (3) referred to other agencies (primarily the national or state labor relations board); (4) no agreement—the mediation conference failed to produce an agreement and there appeared to be no prospect of agreement following the conference, in the judgment of the mediator. New York records this breakdown only for joint conference cases. It might be applied in essential respects to indirect mediation activity as well. The reason it is not applied lies in the more tenuous relationship of the mediator to the parties and the greater amount of time that would be required to ascertain the precise outcome of the dispute in these cases than in joint conference cases.

In addition, many cases each year are disposed of as being settled or withdrawn prior to any mediation.

These bases for closing cases are roughly similar to those used by the Federal Mediation and Conciliation Service.

The primary problem in disposing, statistically, of cases in New York is that of determining when a case, on which no agreement was reached at the conference, no longer holds any promise of agreement. There is no hard and fast line, but typically a case will be closed out within two months following the last conference.

Source of Case.—The usual sources of mediation cases include the request of the union, the employer, union and employer jointly, and the proffer of service by the agency.¹⁸

Since in many instances, and as a regular practice in some industries, in New York the union makes the request with the knowledge and tacit consent of the employer, the numerical difference between union and employer requests may not be as great as it appears to be. Moreover, in some cases the request of the parties actually may have been induced by the mediation agency.

Board-own-motion cases may come into existence when the proffer of service has been formally accepted in advance of any conference by both parties, which is the only condition under which such cases are recognized in California; or when it has been accepted by one party only; or even when there is no formal acceptance prior to conference,

¹⁸ The federal service in a tally (that appears regularly in its annual report) showing the source of cases includes cases brought to its attention through dispute notices required under the Section 8(d)(3) of the Labor Management Relations Act of 1947, as well as requests for help from the parties and intercessions by the agency directly. Actually the dispute notices appear to be a source of information rather than a source of cases. Many of the notices that become cases undoubtedly do so by the intervention of the service.

as is sometimes true in New York. Where a party wishes its desire for mediation kept from the other party, a case that it initiates may be recorded as being own-motion in some instances, though it rarely happens in New York.

In 1954 New York's own-motion cases were 18 per cent of the total (excluding cases withdrawn or settled prior to any mediation) and included 22 per cent of the total number of workers directly involved in mediation cases. This compares with about 12 per cent of the cases and 30 per cent of the workers during the five-year period 1947-1951. In California these cases were 5 per cent of the total in 1954, and 3 per cent during the entire 1947-1953 period.

Own-motion cases in New York include a somewhat greater proportion of indirect-mediation-activity cases than do all cases combined—12 compared with 7.5 per cent during the period 1953-1954. They also include a substantially higher proportion of cases involving work stoppages—30 per cent compared with 13 per cent, in terms of number of cases, and 52 compared with 30 per cent, in terms of number of workers involved.

Number of Employees.—For significant categories of cases it is desirable to know the number of employees involved as well as the number of cases. This is especially important for work stoppage cases. The figure desired is the number of employees of the struck employer made idle, rather than the number directly involved in the dispute, if there is a difference.

It may also be desirable from time to time to have a size distribution of cases. This will answer the impression of some people that state agencies deal only with small cases. The size break at the low end of the distribution might well be "less than six workers," to conform with national work stoppage statistics practice.

Industry.—A certain amount of industry detail is desirable in order to show the range of mediation activity. While two-digit manufacturing and one-digit nonmanufacturing industry group breakdowns¹⁴ may suffice for most purposes and represent the practical limits of information available about products and services, some states may have individual problems that make further detail especially important in some groups. New York, for example, breaks out building service, because of the large volume of cases originating in this industry in New York City.

Circumstances of Dispute.—A fundamental division of disputes is between contract negotiations and disputes under the contract. Contract negotiations in turn are usefully divided into initial contract, renewal contract, and contract reopening.

¹⁴ Under the standard industrial classification practice of federal and state statistics agencies.

These classifications raise no procedural problems and are particularly appropriate in presentations of work stoppage status and issues.

Issues.—New York makes two classifications of issues: (1) an unduplicated count according to the issue or combination of issues present in the case; and (2) a count of the number of cases in which particular issue appears. Under the latter method any case may be counted a number of times. Issues are classified in great detail, to such an extent in fact that the full detail is rarely published.

New York's experience seems to indicate that most purposes—administrative and public information—would be served adequately by less than a dozen categories of issues; and that the unduplicated-count, or combination-type issue, table may not be worth the work that goes into compiling it.

Union Affiliation.—New York includes among its compilations a table giving by union affiliation (AFL, CIO, and independent) the number of cases and workers involved by work stoppage status.

In this connection, the New York Labor Department's Research Division made an analysis of the frequency with which particular union-management bargaining units used the services of the mediation board during the three-year period 1947–1949. It showed that the overwhelming proportion—75 per cent—of the bargaining units that used the board's facilities did so only once in the three years. Sixteen per cent used the facilities twice, 5 per cent three times, and 4 per cent more than three times. This does not suggest an excessive dependence on the board to resolve labor-management disputes.

Measurement of staff effort.—Rounding out the measurement of mediation activity requires a record of the amount of effort spent by the staff, in addition to the number and characteristics of mediation cases.

For budgetary purposes, New York tends to rely on the average number of active mediation (joint-conference and indirect-mediation) cases per staff member per year. It does not forget time spent in exploration, consultation, and efforts to arrange conferences in disputes that never became part of the active caseload; but it stresses it in nonquantitative terms, and generally assumes it to be a constant. Since the agency also engages in arbitration activity, it must add mediation and arbitration cases together to determine staff requirements. The method does not permit the determination of staff required for a given work load of mediation cases alone. Nor is it possible to determine how a shift in the composition of the workload in terms of work stoppage status, extent of mediation activity, circumstance of dispute, industry, or size, may affect staff requirements.

The only reasonably precise measurement of staff effort is the number of hours devoted to each case. This includes time spent in exploration, investigation, arrangements, preparation, conference, follow-up, and record keeping. Since time is recorded for each case, average time could be computed for any group of cases with a common characteristic. The agency also would require some catch-all category for recording time on activity not associated with individual cases.

Mediators are unlikely to face such detailed record keeping with enthusiasm. In the event better records of time spent appeared to be necessary or desirable, they would be likely to suggest a compromise—for example, recording the time spent per case on conferences and adding to it a standard factor, computed by taking the balance of time spent on mediation and dividing it by the number of cases.

Backlog Data.—New York maintains a case inventory, which shows the number of cases received and disposed of during the month and the number pending at the end of the month. This is an orderly way of recording the flow of cases, and the backlog figure serves to spot any unusual situations slowing down the disposition of cases.

The agency keeps no statistics to show what proportions of the backlog of cases are at various stages in the process of mediation. It is doubted that they would have any value which normal supervisor-staff contacts do not serve better.

Measurement of Effectiveness

The least complicated measure of effectiveness that one hears mentioned is the extent to which the agency intervenes in work stoppage cases. If the agency fails to get into a substantial proportion of such cases then obviously its potential effectiveness in bringing stoppages to a conclusion is limited by that margin.

This at best, however, is only a partial measure of effectiveness, since it disregards the agency's function in preventing stoppages from developing. Moreover, it assumes one of the questions at issue, namely, what bearing, if any, has the mediation effort on the settlement of labor disputes.

Limited attempts in the past to measure the effectiveness of mediation activity have involved relating the trend of work stoppages to the presence of mediation activity. Thus Arnold M. Rose compared the strike experience of three states—Minnesota, Michigan, and Connecticut—that have mandatory mediation laws for periods before and after the passage of their mandatory laws. Professor Rose argued that such a test would not be significant for states that voluntarily initiate mediation because they may tend to select cases especially amenable, or espe-

cially resistant, to mediation. The comparisons were made for two measures of work stoppages—number of workers involved and number of man days idle as a result of work stoppages—and both were expressed as percentages of each state to the United States total.

The analysis showed that Minnesota and Connecticut had a somewhat reduced proportion of the nation's work stoppages after the enactment of the law but that in Michigan, except for a sharp drop during the year following passage of the law, there was a rise in work stoppage activity to new highs. It was concluded that although the comparison offers some evidence that mediation was effective in reducing work stoppages in Minnesota and Connecticut, in Michigan other factors were clearly at work.¹⁵ It is significant that in Minnesota there were marked up-and-down fluctuations in the work stoppage ratios after the passage of the mandatory law. Since mediation is likely to be as effective one year as the next, these fluctuations probably can be attributed to other factors.

Reports of the New York Mediation Board activity highlight a comparison of the number of cases in which work stoppages occurred after intervention with the total number of mediation cases not involving work stoppages at time of intervention. This ratio, popularly labeled "extent to which work stoppages were averted," has consistently run between 5 and 10 per cent on an annual basis.

Its limitation as a measure of the effectiveness of mediation in averting work stoppages lies in the fact that there is no control group to indicate what the experience of a similar set of disputes would be if there were no mediation. Labor contract settlement records maintained by the Division of Research and Statistics of the New York State Department of Labor throw some light on the problem, although they do not represent a precise control. They show that during the five-year period 1950–1954 strikes preceded about 9.5 per cent of all settlements, involving the same proportion of workers.¹⁶ In terms of number of settlements, this ratio fluctuated from 8.5 per cent in 1950 to 10.5 per cent in 1953. In terms of workers, the fluctuation was wider—from 5.0 per cent in 1950 to 17 per cent in 1951. Everything else being equal, one might expect the ratio of strikes to all settlements to be substantially less (not more) than the ratio of strikes to mediation interventions, since the intervention occurs in the more difficult situations.

¹⁵ Arnold M. Rose, "Needed Research on the Mediation of Labor Disputes," *Personnel Psychology*, Autumn 1952, pp. 190–192. A somewhat similar analysis is presented in Jack W. Stieber, *Ten Years of the Minnesota Labor Relations Act*, Industrial Relations Center, University of Minnesota, bulletin no. 9 (1949), pp. 14–15.

¹⁶ These records cover a large majority of agreements involving more than 50 workers.

With respect to disputes that were already work stoppages at the time of intervention by the mediation agency, it has been pointed out that by keeping its files open long enough the agency could run up an almost perfect score of settlements.¹⁷

Data on the duration of work stoppages do not help much. They show that stoppages in which there was intervention by a mediation agency are of longer duration on the average than cases in which there was no intervention. This probably means nothing more than that mediation agencies get into the tougher cases.

Leading students of the subject of strike causation leave little place in their conclusions for factors over which mediation might be expected to have major influence. Thus in a major analysis of the subject Clark Kerr states:

A strike is not an isolated event, a solitary episode. It occurs within a given social context, a surrounding economic and political environment. The major variations in the incidence of such conflict relate not to the efficacy of the direct ministrations to the conflict, such as tactical mediation, but to the total milieu within which it arises. Fewer strikes are experienced in Sweden than in the United States, and fewer in the garment industry than in coal-mining, not because tactical mediation is more skilled in Sweden than it is in the United States or is more skilled in one industry than in another, but rather because of the differing surrounding environments. Aggressive industrial conflict varies greatly from nation to nation, industry to industry, firm to firm, and time to time.¹⁸

Chancellor Kerr goes on to suggest social arrangements which in the long run are generally most favorable to reduction of industrial conflict. These include the integration of workers and employers into society; stability of society, particularly freedom from wars and business cycles; ideological compatibility; secure and responsive relationship of leaders to members; dispersion of grievances; and rules that reduce the risks of the parties and limit the means they employ, without unduly stifling the conflict. Encouraging these conditions, he states, requires an over-all community approach.

This is not an easy prescription. And it is by no means clear that,

¹⁷ Stieber, *op. cit.*, p. 13.

¹⁸ Clark Kerr, "Industrial Conflict and Its Mediation," *The American Journal of Sociology*, LX (November, 1954), 242-243; also see in the same issue of the *Journal*, K. G. J. C. Knowles, "Strike-Proneness and Its Determinants," pp. 213-229. Also Arthur M. Ross and Donald Irwin, "Strike Experience in Five Countries, 1927-1947: An Interpretation," *Industrial and Labor Relations Review*, 4 (April, 1951), 323-342; and chapters by Clark Kerr and Abraham Siegel, "The Interindustry Propensity to Strike—An International Comparison," and by Albert Rees, "Industrial Conflict and Business Fluctuations," in *Industrial Conflict*, edited by Arthur Kornhauser, Robert Dubin, and Arthur M. Ross (New York: McGraw-Hill, 1954), pp. 189-220.

within the industrial and social environment of any state, more cannot be accomplished through mediation efforts even though it is granted that their effect on the whole is limited to minor determinants of industrial conflict.

Professor John R. Commons points out in his *Institutional Economics* that "The human will has the strange but familiar ability to act upon a single factor, out of hundreds and thousands of complex factors, in such a way that other factors shall, of their own inherent forces, bring about results intended . . . A very little control of an accelerator will set the automobile going 50 miles per hour. A very little exercise of control over a man who holds the strategic position among a mass of laborers will change a mob into a going concern." By operating on what at the time is the limiting, or marginal, factor in obtaining what one wants, the whole complex may be brought under control.¹⁹

This concept of what Professor Commons has called "strategic and complementary factors" may suggest an approach to the problem of mediation effectiveness. In other words, there may be considerable promise in investigations that seek to determine the kinds and conditions of industrial relations in which mediation has had a significant role in bringing about a resolution of differences; and, as part of this, what mediation techniques and what qualities in mediators have been associated with successful mediation. In this way mediation can work toward its maximum effectiveness without having necessarily to insist on a place among the major factors responsible for industrial peace.

Some beginnings have been made. Based on admittedly meager observation of the mediation process, Professor Arnold M. Rose, of the University of Minnesota, has developed a series of hypotheses concerning the effectiveness of social-psychological devices that mediators have used to settle conflicts. These are stated as hypotheses for future systematic research.²⁰ Rose does not, however, make concrete suggestions about how the research should be conducted. Proceeding also from observations of a number of mediations, another analyst stresses the role of the mediator in modifying and controlling the economic pressure exerted by the parties through the control of information between the parties.²¹

In the article referred to previously Chancellor Kerr sets forth a number of type situations in which the effect of mediation may be to increase, decrease, or have a neutral effect on aggressive conflict. For ex-

¹⁹ John R. Commons, *Institutional Economics* (New York: Macmillan, 1934), pp. 89-90.

²⁰ Rose, *op. cit.*, pp. 193-199.

²¹ Hugh G. Lovell, "The Pressure Lever in Mediation," *Industrial and Labor Relations Review*, 6 (October, 1952), 20-30.

ample, he hypothesizes that mediation may serve to increase the propensity toward conflict if it helps the leaders to fool ignorant members into thinking that the maximum effort toward settlement is being made, when the leaders actually want a strike for their own purposes. On the other hand, the mediator may decrease the conflict where he introduces rationality to both leaders and members or helps the leaders to bring rationality in the views of the members.²³

In an attempt to correlate personal characteristics with capabilities, one investigator went to a panel of mediators for a ranking of fellow mediators into "good" and "poor" mediator categories.²³

Having a somewhat similar objective but using a more refined and somewhat different approach, another study will attempt to make a comparison of the personalities of mediators, as determined by a series of psychological tests, and the reactions to these mediators as determined by interviews with parties who have frequently used an agency and several of its mediators. This study was preceded by a different one, social-psychological in orientation, describing the kind and extent of participation of the mediators as determined from observation of 12 recorded mediation sessions.²⁴

Some of the most lucid and convincing presentations of mediation principles and techniques have come from mediators themselves.²⁵ These practitioners speak from extensive experience and though they may bring to their task a bit of bias and preoccupation with detail, their materials are less subject to the perils of recall and small samples than those of outside observers.

If the conclusion is correct that the practitioners known more about

²³ Clark Kerr, "Industrial Conflict and Its Mediation," *The American Journal of Sociology*, LX (November, 1954), 239-242.

²³ Irving R. Weschler, "The Personal Factor in Labor Mediation," *Personal Psychology* (Summer, 1950), pp. 113-132.

²⁴ Ph.D. dissertation by Henry Landsberger. The earlier study is his Ph.D. dissertation, Cornell University, School of Industrial and Labor Relations, discussed by Arthur Stark, in *Association of State Mediation Agencies, Proceedings* (September, 1954), p. 34.

²⁵ Particularly, Edward Peters, *Conciliation in Action* (New London, Conn.: National Foremen's Institute, 1952), and his "Only Real Issues Count in Contract Bargaining," *Personnel Journal*, 32 (March, 1954), 367-373; Frederick H. Bullen, "The Mediation Process," in *New York University First Annual Conference on Labor* (1948), pp. 105-143; W. Ellison Chalmers, *The Conciliation Process* (University of Illinois: Institute of Labor and Industrial Relations, 1948); Irving Paster, "Psychological Factors in Industrial Mediation," *Personnel*, 31 (September, 1954), 115-127; Edgar Warren, "Mediation and Fact Finding," in *Industrial Conflict*, edited by Arthur Kornhauser, Robert Dubin, and Arthur M. Ross (New York: McGraw-Hill, 1954), pp. 292-300; discussions by Allan Weisenfeld, Saul Wallen, Edgar L. Warren, and Julius J. Manson in *Industrial Relations Research Association, Proceedings* (December, 1953), pp. 276-294. See also, Elmore Jackson, *Meeting of Minds* (New York: McGraw-Hill, 1952).

mediation than anyone else, then it appears that a further step forward would be a pooling of the thoughts and impressions of mediators and an effort to articulate any consensus about the elements of effective mediation.

The question of what is effective mediation will inevitably intrude itself into such a process. Briefly, the question is whether getting a settlement of the issues in dispute is the sole, at-any-cost, aim of mediation, or whether the aim is to stimulate good industrial relations—as David Cole has said—by placing upon management and labor the direct obligation to resolve their own differences, hastening the time when they will be capable of meeting their own duty to the economy.²⁶

On whether the shorter or the longer range objective is emphasized may depend the appropriateness of intervention and the methods used during the course of mediation. The broader objective leads to a stress on procedures that facilitate collective bargaining.²⁷ The narrower, immediate objective of reaching a settlement may justify the mediator in using pressures of one kind or another²⁸ and “tricks” that parties might object to if they knew about them.²⁹ Manifest public interest may justify use of pressures in some cases that would not be appropriate in others.

Recent Trends in Case Load

Of considerable interest to officials of the New York State Mediation Board has been the decline in the mediation case load that has taken place in recent years. There was a 21 per cent drop in the number of active mediation cases from 1948 to 1952 and another 23 per cent drop from 1952 to 1954. This is a decline of 39 per cent over the entire period.³⁰

The six-year decline in cases involving work stoppages was substantially less than in no-stoppage cases—9 per cent compared with 47 per cent. As the following table shows, the 9 per cent reduction in work

²⁶ *Association of State Mediation Agencies, Proceedings* (June, 1953). Also see paper by William H. Davis in same proceedings; and discussions by Weisenfeld, Wallen, Warren, and Manson, in *Industrial Relations Research Association, Proceedings* (December, 1953).

²⁷ Among those which authorities have cited are: keep parties negotiating, keep them in intelligent discussion with each other; interpret position when there are blocks to communication; afford outlets for antagonism; facilitate graceful retreat and face saving; supply and interpret facts; suggest alternative solutions.

²⁸ For example, inducing fatigue, public opinion and other community pressures, threats of governmental action.

²⁹ See, for example, devices mentioned in Rose, *op. cit.*

³⁰ Figures exclude cases settled or withdrawn prior to any mediation activity. A considerably smaller proportion of cases was settled or withdrawn prior to mediation activity in 1954 than in either 1952 or 1948.

stoppage cases was not due to a drop in the total number of work stoppages in the state, since the number rose. Rather was there a decline in the rate of intervention—from 41 per cent in 1948, to 32 per cent in 1952, and 31 per cent in 1954.

Among cases not involving work stoppages, union requests account for the bulk of the decline. The 1952 volume of union requests was 29 per cent less than the volume in 1948, while the 1954 volume was 55

ACTIVE MEDIATION CASES CLOSED BY THE NEW YORK STATE BOARD OF MEDIATION AND WORK STOPPAGES IN NEW YORK, 1948, 1952, AND 1954

Type of case	1948		1952		1954	
	Number	Per cent of 1948	Number	Per cent of 1948	Number	Per cent of 1948
Work stoppages ^a	447	100.0	602	134.7	546	122.1
Cases involving stoppages ^b	185	100.0	190	102.7	168	90.8
Intervention ratio (rate).....	.414	100.0	.316	96.3	.308	74.4
Cases not involving stoppages.....	895	100.0	660	73.7	472	52.7
Employer request.....	85	100.0	76	89.4	61	71.8
Union request.....	698	100.0	494	70.8	311	44.6
Joint request.....	50	100.0	67	134.0	51	102.0
Board's own motion.....	62	100.0	23	37.1	49	79.0

^a Those involving six or more workers.

^b Those involving five or more workers. Excludes case (withdrawn or settled prior to mediation activity).

per cent less. Employer requests were down from 1948 by 11 per cent in 1952 and by 28 per cent in 1954. The number of joint requests, on the other hand, were higher in both 1952 and 1954 than in 1948. Board's-own-motion cases, which had fallen off drastically in 1952, in 1954 were within 21 per cent of the 1948 level.

Does this decline in case volume evidence a growing effectiveness of mediation in New York in accustoming unions and employers to handle negotiations without third-party assistance? Is it a measure of incursion by the federal service into the dispute territory of the state?²¹ Or does it simply reflect a temporary abatement in the severity of union demands in relation to employers' willingness and ability to pay plus a growth in the number of long-term contracts?

Have cases coming before the board become more or less difficult to

²¹ The U. S. Bureau of Labor Statistics data show that the federal mediation services are reported by employers as having given assistance in arranging settlements in a larger proportion of New York work stoppages in 1954 (15 per cent) than in 1948 (11 per cent). As was pointed out earlier, however, this is not a specific measure of intervention.

settle? Does solution require more or less effort on the part of the mediation staff?

Is the declining volume of cases peculiar to New York, or are other states experiencing the same trend?

Here crystallized are several important problems facing at least one state mediation agency today. It is appropriate to ask the further question: Might not better statistics and greater uniformity in statistics among the states and as between the states and the federal government help supply some of the answers?

APPLICATION OF STATISTICAL CONCEPTS TO ACTUAL CASES

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Despite the cautions of statistical compilers and authorities, work stoppage data tend to be regarded as universal barometers of the state of health of the employer-employee relationship. It is for this reason that labor mediators have an interest in these statistics and how they are used. Of closer concern is the fact that these data are interpreted to show the incidence and severity of industrial maladies which the public expects the mediator to prevent and cure. The mishandling of work stoppage statistics can expose the mediator to a vexing kind of logic. When the number of reported stoppages is low, it can be flatteringly inferred that the mediator is being successful, but it likewise may be reasoned that he is not very busy. In times when the number reported is high, it may be concluded that the mediator is not being effective. The existence of this body of statistics impinges upon every area of the mediator's interest, whether it involves policy matters of need and workload, measurements of effectiveness, or philosophies of mediation.

Since 1947, when the California State Conciliation Service was established, the mediators on our staff have faced problems and anomalies which arise out of the concepts and definitions of work stoppage data. Certainly, these are not new discoveries. Many of the inconsistencies and limitations of these concepts and definitions were noted by competent authorities years ago.

A rehash of old material may serve no other purpose than to reiterate the limitations of these statistics, and to caution against their loose interpretation. A more modest expectation is stimulation of interest in modifications of current concepts and definitions which will be more meaningful in terms of present day conditions of industrial relationships.

A presentation here of a few types of situations and actual cases will show how the neat categories of beginning, ending, and duration of a stoppage, number of employees and employers involved, and number of man days lost or idle often fail to fit the jigsaw of modern industrial conflict. A more fundamental question grows out of the accepted inference that these data somehow measure a social loss. Whether expressed as "man days lost" or "man days idle," the distinction is one of semantics. However phrased, a loss is implied. Whether it be a loss of production, wages, purchasing power, profits, etc., is left to the vagaries of subjective interpretation.

Over and above the anomalies, one of the first things a mediator learns about work stoppage data is that they can be highly controversial. Objectivity becomes dim when the data affect the strategic and tactical considerations of labor and management when they are involved in industrial conflict. Generally, labor is inclined to overestimate its calculations, while management tends to minimize its figures. These roles can also become reversed, depending upon the circumstances of a specific case.

An example of controversy over statistics was recently provided by the strike-lockout dispute in San Francisco affecting the retail groceries and the Retail Clerks Union. After bargaining broke down, a muddled situation developed where the union struck certain stores, and the groceries locked out employees in other shops. For days in the local press there raged a "battle of statistics" with each side quoting conflicting figures of the number of employees involved, and how many shops had or had not signed up with the union. Who, it might be asked, could have the courage or wisdom to purport to distill a statistical verity out of such a complex phenomenon?

When is a strike a strike? Or, when is a work stoppage a work stoppage? These questions may be answered by a barrage of standards, definitions, and terminology which can be of little comfort to the mediator. There are times when a union requests our intervention, and a mediator has to wade through picket banners to get inside a plant to talk to management. The picket line is very active, and motorcycle police are patrolling the area. When the mediator reaches management, and however tactfully he alludes to his peaceful mission, he

is invariably told that there is no dispute, no strike, nor is there a stoppage of work. According to the employer, the plant is operating normally, and all employees are on the job. Management dismisses the presence of the people on the picket line as strangers hired by the union to harass loyal employees who are not interested in the union's program or demands.

An opposite situation develops where a union is waging a long, losing strike. The plant is operating, and most of the employees have drifted back, but the union continues to picket. For the union, this facade of struggle may have a prestige or morale value. "The strike goes on," according to the union. Any suggestion or inference that a work stoppage has ceased to exist is viewed as a partisan and hostile attitude.

In building and construction trades stoppages, the meaning of man days idle, beginning, ending, and duration can be sharply diluted. This is especially so where there is the group and area bargaining which is characteristic of much of California. More than one craft may be involved, and perhaps thousands of employees and employers may be affected in wide geographical areas of hundreds of miles. This type of stoppage can be of the "creeping" variety where the number of workers and jobs affected fluctuates up and down over a period of weeks. The facts in this kind of stoppage are only feebly susceptible to statistical recording within the framework of present definitions and concepts.

The concept of "man days idle" got a jolt in one building trades dispute in a valley town of California. About fifty sheet metal workers left their jobs when the contractors refused to accede to the union's wage demand. Because of booming construction activity, and a scarcity of skilled labor, all the workers were immediately and gladly put to work by contractors in a neighboring city. The struck contractors temporarily lost business, and the workers were statistically "idle," but none of the workers lost time or wages during the five weeks of the controversy. At the final settlement, the employers demanded a written guarantee from the union that every worker return to his former employer as soon as possible.

Stoppages of agricultural field labor present statistical problems similar to those in the building industry. Here, too, there may be thousands of workers engaged in a "creeping" stoppage over large geographical areas. At times agricultural unions have used the technique of caravan picketing with fluctuating results. This roving picket line moves over the harvest area, and calls out the workers from the fields as it moves along. In these stoppages, the compilation of ending, dura-

tion, workers involved, and man days idle is an unrewarding statistical chore. Another question emerges in agricultural cases where the workers have not stopped working, but merely announce that they will not be available when harvesting begins unless certain demands are met. Although statistical rationalizations have been made to cover this type of situation, it does leave unanswered the question of how work that has not been started can be stopped.

As in agriculture, there are times in the fishing industry when work has not stopped, but simply has not begun. In a wage or price dispute, the boats do not go out. When agreement is reached—and subject to the market and how the fish are running—the catch for the remainder of the season may be bountiful enough to more than compensate for whatever profits or wages might have been lost because of the dispute. In these circumstances, the concept of “man days idle” is not very meaningful.

Stoppages in the retail and service industries often do not lend themselves to statistical appraisal of ending, duration, number of employees, and man days idle. Two years ago, there was a long strike and lockout in the hotel and restaurant industry of a large city in northern California. Over 2,500 employees, and 500 employers were affected by the negotiations. The union did not strike all the establishments, which is customary in this kind of dispute. In retaliation, the employers locked out the workers in other restaurants. For both sides, the fortunes of war flowed and ebbed over a span of weeks. During the whole time, however, none of the struck restaurants closed their doors. With the help of replacements and family members, the struck houses continued to serve food. On the other hand, a substantial number of strikers found jobs in other restaurants or industries. With many of the strikers working at other jobs, the union was forced to man its picket lines with volunteers and paid pickets.

A number of years ago, one case in an important industry of California raised some perplexing questions about stoppage definitions and concepts. The union called an industrywide strike that went on for months. Settlements were reached with all the companies but one. The remaining company was successful in the early stages of the dispute in getting replacements for all strikers, and managed to get into normal operation. Statistically it could have been said that the stoppage terminated when the company got its full complement of replacements. The story did not end here, however, and the events that followed went on in a statistical void. The union kept an active picket line around the plant for months after it was in operation. It was able, by the organiza-

tion of a boycott of the company's product, to keep an effective bargaining position. Finally agreement was reached, and among the key settlement terms was the company's agreement to take back hundreds of strikers although their places had been filled months before.

In closing this brief case summary, it should be pointed out that there are times when a stoppage is not a stoppage, and a strike is not a strike; at least statistically speaking. One such instance occurred last week. A staff mediator was called into a case involving a medium-sized food processing factory and a union which was trying to negotiate an initial contract. The union had done a good job of organizing, and had signed up all the employees but two. Negotiations dragged on for weeks with few results. During this period, the company slowly curtailed its operations, and laid off its employees a few at a time. The last employees were laid off on a Thursday, and the company simultaneously broke off its negotiations with the union. On the following Monday morning, the union set up a picket line outside the locked-up plant. The employer faced financial disaster when another union refused to cross the picket line to haul out the stored inventory of foodstuffs. It took several weeks of bitter and hard negotiations before an agreement was reached. For the reason that no work had been scheduled at the time that the union placed its pickets, this conflict situation did not statistically qualify as a work stoppage or a strike.

It is apparent that work stoppage data fail in many respects to reflect the phenomena of industrial relations as they occur today. A great weakness lies in the acceptance of the strike and lockout as sole indicators of the health or sickness in the body of the employer-employee relationship. The strike and lockout have been, and will continue to represent, the most dramatic manifestations of labor-management conflict. Yet, to ignore statistically the unspectacular, but equally significant expressions of industrial conflict, is to give less than a complete picture of what is transpiring in the important arena of industrial relations. It is dangerous to derive conclusions from work stoppage statistics without remembering that the breakdowns in labor-management relations which lead to calculated layoffs, slowdowns, "quickie" stoppages, boycotts, etc., do not find expression in that body of statistics.

Industrial relations in the United States have undergone profound changes since the closing years of the last century when work stoppage statistics began to be compiled. There have been shifts in public policy; there has grown up an intricate corpus of industrial statutory law. Even more important has been the growth of the institution and mores which we call collective bargaining. These changes in our social and

industrial environment provoke fundamental doubts about the definitions and concepts currently being used in the social statistics of industrial relations. It is time to reexamine these definitions and concepts, and to devise modern standards of quantitative measurement which will more faithfully describe what is taking place.

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