

THE APPLICATION OF QUALITY CONTROL METHODOLOGY IN THE AFDC PROGRAM

Sue Ossman, Social and Rehabilitation Service, DHEW

Introduction

Before discussing the application of quality control methodology in the AFDC program today, let me briefly tell you how the AFDC program operates and why the quality control system was developed by the Department of Health, Education and Welfare.

Aid to Families with Dependent Children is a program administered by the States who set the amount of payment for each needy family. All income and resources of the family must be considered by the State when determining size of the payment. The Federal government, through the Department of Health, Education and Welfare, sets program guidelines for the States and reimburses them for somewhere between 50 percent and 83 percent of the total program cost, depending on each State's per capita income. More than \$800 million a month, or over \$9 billion a year, now go to help $3\frac{1}{2}$ million families consisting of $11\frac{1}{2}$ million children and adults.

Three major factors impinge on the proper and efficient administration of the AFDC program. The first factor is State and Federal law and policy. These specify what families are eligible to receive financial assistance and the requirements regarding the administration of the program. They determine whether a person qualifies for an eligibility group--which needs are to be met and by how much money; which financial resources are to be considered and how they are to be measured in the payment determination; how to identify changes in circumstances which affect eligibility and the amount of the payment; and how all such information is to be submitted to and processed by the agency.

The second factor, is agency staff, skill and accuracy. These play a large role in carrying out the assigned tasks of the agency. Involved here are such elements as understanding manuals and instructions, previous training and work experience, size of individual caseloads, distribution of staff within operating units, and organizational structure within the local agency.

The third factor, and not the least of them, is client/agency administration in providing the agency with accurate and timely information. This includes knowledge of requirements, willingness to provide information, and ability to contact the agency about changing circumstances.

To ensure that these factors produce an eligible caseload that receives the correct amount of money, HEW has developed a quality control system which is operated by the States.

Objective of Quality Control

The quality control system in AFDC is an administrative program designed to determine the extent to which those receiving assistance pay-

ments are eligible and, if eligible, the extent to which they are receiving amounts to which they are entitled. Not only is the objective to measure the extent of ineligibility and incorrect payment, but also to hold the incidence of error below pre-established tolerance limits. It accomplishes these objectives by means of: (1) continuous review of valid and reliable cross-sectional Statewide random samples of AFDC cases in all States, District of Columbia, Guam, Puerto Rico and the Virgin Islands; (2) periodic assembly and analyses of case findings to determine incidence, amount and reason for occurrence of errors; and (3) application of corrective action to reduce the causes of excessive error rates.

To ensure that State QC systems are operating in accordance with Federally established requirements and to assist each State agency in fully utilizing its QC system, Federal staff conducts ongoing appraisals of State QC operations. The Federal appraisal consists of: (1) annual comprehensive reviews of all eight components of the system and (2) ongoing re-reviews of a subsample of State QC reviews. For the Federal agency, the appraisals serve two purposes: (1) to confirm or deny the validity of State error rates; and (2) help to pinpoint problems for which Federal technical assistance can be provided to any component of the system.

I shall first discuss the components of the State QC system, providing somewhat more detail on the components of most interest to survey researchers. Next, I shall describe briefly our Federal monitoring system and share with you a few of the operational problems that we have encountered in our survey research methodology.

Components of the State Quality Control System

The eight components of the State QC system are so interrelated that they constitute a continuous cycle starting with the sample selection process. This is the mechanical step of selecting the sample cases from the total State caseload. QC sample sizes are based on the assumption that an ineligibility case rate of 3% is reasonable for States to achieve (although there is some difference of opinion on the validity of this assumption at the present time). Sample sizes are, therefore, based on an ineligibility rate of 3% with a precision of 3% for States with relatively small caseloads up to a precision of 1% for States with relatively large caseloads. This translates into State sample sizes ranging from 150 cases up through 1200 cases--about 45,000 cases nationally.

Systematic random sampling is applied to a sample frame of active cases receiving a money payment in each month. (Since the review period covers six months, one-sixth of the sample cases are selected each month.) Usually the frame consists of the actual payroll listing for the month. Cases which are not included in the QC review

system are generally eliminated after selection of the sample. Oversampling is required to compensate for this.

In sampling of this type, it is important for the structure of the frame not to be cyclical in order to avoid biased results. This is monitored carefully by the Federal regional offices. Any changes in sample frame structure or State sample selection techniques cannot be made without prior approval of the Federal regional office.

The second component is the review process which produces the raw data on which the activities in the later components are based. This process requires meticulous attention to detail, a firm knowledge of the welfare regulations applying to the cases reviewed, expertise in the principles and techniques of interviewing and investigation, and sound judgment for drawing conclusions. This component is primarily composed of two parts. One part is the analysis of the case record; a second part consists of verifying elements of eligibility and payment for the month of review by a full de novo field investigation. This investigation includes contact with the client and contact with collateral sources of information. The process also includes correspondence, review of documents, telephone conversations, computation of a budget by agency standards of assistance and any other activity pertinent to the review of the case.

The case record is the repository of all current information about the case upon which eligibility, amount of need, and amount of payment is based. Through analysis of the case record, the reviewer familiarizes himself with the family situation, notes the specific facts related to conditions of eligibility and payment, and identifies gaps or deficiencies in information. Where documents or statements are contained in the case record, the reviewer identifies those which may be used as verification. All relevant information obtained from the case record analyses is recorded on worksheets. All documentation information must include such specific information as volume and page reference to public records.

Having analyzed the case record, the reviewer is now ready to start the field investigation. The personal interview is probably the most important part of the case review since the client furnishes most of the evidence necessary to establish his eligibility. If the client does not have the necessary evidence, he often advises the reviewer where the required verification can be obtained.

The reviewer structures the interview to ensure adequate coverage of all eligibility and payment factors. When the case record does not contain adequate verification of an eligibility factor, the reviewer must obtain additional verification. For example, information on military service and work history means there is a possibility of veteran's benefits and company pension rights. These factors are discussed with the

client to establish the possible availability of these benefits.

Pre-planning and structure are essential to assure complete coverage of all eligibility factors. However, the QC interview, per se, is not structured or directed in such a manner as to preclude the possibility of the client's active participation. Relevant topics are covered in such a fashion as to permit the client freedom to discuss his situation. The reviewer furnishes the lead topic for discussion, giving the client the opportunity to explain past and present circumstances freely. The circumstances discussed, together with the case record, gives the reviewer leads for the second part of the field investigation, which is collateral contacts.

The QC review requires independent verification of all applicable elements of eligibility, unless the case record contains documentation of all necessary verification. When a client makes a negative response, the reviewer must build a solid basis for deciding that the client, in fact, does not have resources available. He must also check out resources declared by the client to determine if the client was correct. Such clearances as the Social Security Administration, Internal Revenue Service, Employment Security, etc., are almost routine.

When all the necessary information has been obtained, the reviewer analyzes the documents and verifications in terms of the case situation as of the month under review. Every effort is made to reach a definitive conclusion on each sample case with respect to eligibility and correctness of payment according to the State plan. Once a definitive conclusion is reached, the reviewer summarizes the case findings on the review schedule according to instructions provided by the Federal agency. (As cases with incorrect payment amounts are found, they are referred to the local agency for individual corrective action. This, however, is not the ultimate goal of the QC system. The ultimate goal is to identify the causes of the repetitive type of errors and to eliminate them through corrective action.)

The third component of the system is data management. Here, the completed schedules are edited, tallied, and compiled into statistical reports which States are required to submit to the Federal agency covering the results of the QC reviews in each reporting period. These reports include sample size; number of ineligible, overpaid and underpaid cases and payments; distribution of error cases by responsibility for error (i.e., agency or client) and by primary program element in error; and cross-tabulations of various case record characteristics by error and non-error cases.

Taken as a group, these reports, show QC error findings from various perspectives for purposes of analyzing probable causes of error. The basic QC case schedules contain additional information which many States use for their own specialized needs.

The fourth component is data analysis. To be an effective guide to corrective action, data analysis should be a continuous process involving information of major concentrations of error both in number of cases and in payment amounts; evaluation of previously implemented corrective actions; and, to the extent possible, an examination of the cost-benefit implications of recommended actions.

The data analysis process breaks down into two main areas--one is the development of profiles of error cases and the other is the development of profiles of error-prone cases. The primary difference between the two is the population referred to. Profiles of error cases refer to percentages, or probabilities, of error when only error cases are considered. Profiles of error-prone cases refer to percentages, or probabilities, of error associated with a review of cases in the total caseload.

Data analyses may point out some or all of the following: which sources are causing most of the errors; which of the errors are most important; the locations and conditions which need closer study and scrutiny; and numerous other points relevant to the control of quality.

The fifth component, distribution of QC findings, provides for information at appropriate intervals to agency staff--to top administrative staff for corrective action; to training staff for intensified training in selected areas; to eligibility workers for identification of errors; and to quality control staff for information on the total case review findings.

The last three components of the system make up the three corrective action phases -- program analysis, corrective action planning and corrective action implementation. In most, if not all, of the State public welfare agencies, these three components are handled by a corrective action panel consisting of top executive staff representing the various disciplines and expertise of the agency. Administrative improvement changes resulting from corrective actions taken may affect Federal and State policies, eligibility determination procedures, agency performance, and client reporting. The cost effectiveness of the corrective actions taken and the effect of changes on caseload error rates are evaluated in subsequent sampling periods.

Federal Re-Review

Each State agency is required to submit to the Federal regional office a listing of all sample cases it has selected for its quality control review. As case reviews are disposed of, photocopies of the case schedules are made and submitted to the regional office. It is from these photocopies that the Federal re-review subsample is selected, also by the systematic random selection method. All photocopies are checked against the State sample list to verify that the disposed of case was part of the State's original sample. (Incidentally, initial State findings, including the amount of payment and the amount of error,

are recorded for each case at the time the Federal subsample is selected. This is important in the determination of final error rates, which we will point out later.)

Federal subsample sizes range from 70 cases, or roughly 1 out of every 2, in States with the smallest QC samples to 180 cases, or about 1 out of every 7, in States with the largest QC samples--a national total of approximately 8,000 cases. If the sampling interval is small, random digits are selected within each interval to ensure that the selection of subsample cases is, in fact, random.

The State quality control file as well as the case record on each of the selected re-review cases are carefully examined, checking off areas requiring a field review for additional information. After obtaining the findings of the field reviews (or at the conclusion of the examination of State files), the regional office reviews the eligibility of the re-review case and recalculates the amount of payment. If the findings of the Federal re-review differs from the State quality control results, a formal meeting takes place between Federal and State staff to determine the correct findings of eligibility and amount of payment to the case. The conference discussions may lead either to corrections in the re-review findings, corrections to State review findings, or to an unresolved difference. Unresolved differences are referred to the Regional Commissioner for final decision or resolution. If the results of the discussion reverses the Federal re-review findings, then no difference between State and Federal results is recorded; if the Federal re-review findings are sustained, then a difference is recorded.

Double Sampling Regression Methodology for Determining Final Error Rates

A Federal re-review sampling essentially constitutes a "double sample". A double sampling regression methodology was developed for the Social and Rehabilitation Service by Mr. Morris H. Hansen of Westat Research, Inc. It involves finding the relationship between final Federal findings and State original findings in the Federal subsample for determining case error rates. This relationship may range in value from poor to perfect. The value is calculated separately for ineligible cases, eligible but overpaid cases, and eligible but underpaid cases in the re-review sample.

For example, the computation of this relationship for ineligible cases (called the regression coefficient "b") is as follows:

$$b = \frac{P_a - (P_f)(P_{n'})}{P_{n'}(1 - P_{n'})}$$

where:

P_a = the proportion of cases in the Federal subsample in which there is Federal/State agreement on ineligibility

p_f = the proportion of cases in the Federal subsample which are ineligible based on the final Federal determinations (after resolution of differences)

p_n = the proportion of cases in the Federal subsample in which the original State finding was ineligibility (irrespective of Federal findings)

The above value (b), once calculated is multiplied by the difference between the State original findings in the Federal subsample (p_n) and the State original findings in the State full sample (p_n) (the former subtracted from the latter). The product is then added to the final Federal finding in the Federal subsample (p_f) to produce the regression estimate of case rate of ineligibility (\hat{p}_f). The formula is as follows:

$$\hat{p}_f = p_f + b(p_n - p_n')$$

The regression case error rate has the following properties:

- When original State findings agree with final Federal findings in all cases in the Federal subsample, the error rate computed from the State full sample becomes the "official" error rate.
- When there is no discernible relationship between final Federal and original State findings in the Federal subsample, the Federal case error rate computed from the Federal subsample becomes the "official" error rate.
- When the relationship is good but not perfect between the Federal and original State findings in the Federal subsample, the "official" error rate computed by the regression formula method would be close to the error rate computed from the State full sample.

These properties clearly illustrate the logic and reasonableness of the use of this method. The initial State findings are used in such a way in the Hansen formula that if Federal and State findings are in perfect agreement with each other in the subsample, then the regression error rate will equal the initial State error rate and the result is an indication of the validity in the State QC findings. If, on the other hand, the relationship between Federal and State findings is poor, the regression rate will equal the final error rate in the Federal subsample and the result shows little validity in the State QC findings.

The same principle applies in the use of the regression formula method for computing payment error rates except that, in addition to the comparison of Federal and State error payments, total payments in the Federal subsample are regressed against total payments in the total caseload to further refine the data. (Standard errors for each error rate involves the calculation of cor-

relation coefficients.)

Operational Problems

As all of you know, no survey is without abnormalities and the AFDC-QC system is certainly no exception. Imagine administering a sample survey from 54 separate jurisdictions, each having its own eligibility and payment rules and regulations. On top of that, imagine administering a subsample from 10 Federal regional offices.

Nationwide, there are over 1200 State QC staff involved with the sampling, review process, and the data and program analysis of the quality control review in the States--each with varying amounts of skill, training and ability. Problems come up all the time which could affect the comparability of one sampling plan to the next, and ultimately the validity of the data from one State to the next. For example, take the case of stratified sampling. Theoretically, this should not cause a problem, as this is not a particularly sophisticated technique. We must ensure that all States with similar size caseloads have the same precision for a fixed error rate. However, in desiring estimates for geographic areas which contain relatively small proportions of the total caseload, some States allocate the stratified sample inefficiently--i.e., in such a manner as to increase, rather than decrease, the sampling error. In order to keep the precision within our standards, these States must increase their total sample size. This can significantly increase costs for the State.

Another complexity we have involves State payment dates and sampling frames. Everything runs smoothly when the State issues monthly payment checks on the first of each month and selects sample cases from one central payroll listing covering all cases. In fact, however, the quality control system must accommodate all State systems designed for paying welfare clients. For example, one State has no central payroll file at all but issues checks from 30 separate locations; another State issues semi-monthly checks, not always in equal amounts; a third State has 20 different payment dates in a month--semi-monthly payment dates arranged according to the alphabetical order of names on the assistance rolls; a fourth State issues one check a month to cases which include earned income and two checks a month, again with scattered payment dates depending on last name of clients, for all other cases.

All these differences in payment structure cause complications. The correction of a payment error in the review month of sample cases after they have been selected as part of the QC review could conceivably result in all sample cases being found to be correct. Therefore, States making payments on a semi-monthly basis are required to delay the selection of their sample until after the second semi-monthly payments have been authorized.

Another complication involves cases for which a review cannot be completed because the client has moved out of State, or is unwilling to give

information, or cannot be located. Such cases essentially amount to nonresponse but are usually a very small part of the sample. A problem usually comes up when such a case appears in the Federal subsample.

Since the Federal subsample is an unbiased estimate of the State QC sample, both samples must consist of the same type of cases. If cases dropped by the State are completed by the Federal re-review, States can accept the Federal findings or go out and do their own review. If, on the other hand, a Federal reviewer cannot complete a case already reviewed by the State, the State finding on the case is assumed to be correct. While we realize that this procedure tends to inflate the correlation between Federal and State findings, dropping such cases from both Federal and State review would lead to an estimate that is not representative of the total caseload it seeks to estimate. This situation arises because of the difference in time of the State and Federal reviews. (The Federal re-review generally takes place anywhere from 30 to 60 days after the State has completed its review.)

One of our biggest problems, however, has been with States wanting to change their initial findings after they have been submitted to the Federal regional office, particularly at the end of the six-month reporting period. As indicated earlier, the regression estimate of the error rate makes use of the relationship between final

Federal subsample findings and initial State findings in the full State sample. Since the initiative for making changes rests with the State, we have no assurance that all changes, whether or not they favor the State, are identified and reported. Although the Federal reviewer can validate changes initiated by the State, failure to report all changes can bias the final results since the universe for the Federal subsample is the State full sample. It is for this reason that regional offices are not permitted to accept State changes after results of completed reviews are submitted.

Conclusion

The AFDC-QC system, in conjunction with other administrative tools, has made a substantial contribution to the improved management of the AFDC program. Since 1973, case rates of ineligibility, overpayment and underpayment have been reduced 35 percent--from 41.1% to 26.7%--resulting in a cost avoidance savings of almost a billion dollars in State and Federal funds. The system makes use of the accepted objectives, principles, and techniques of statistical quality control. It is an ongoing management process using sample inspection, providing continuing data on error rates and identifying nature and types of error for guiding corrective actions for error reduction (whether the error results in overpayment or underpayment).