STATISTICS FOR HEALTH, EDUCATION, AND WELFARE LEGISLATION

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One of the most striking features of American life today is the rapidity of change. All of us--in government, in academic life, and in business--sense the dramatic forces that are shaping the Nation of tomorrow.

• Our population is growing by 3 million persons a year--a quarter million every month. Over 65 million babies have arrived since World War II. Average life expectancy now exceeds 70 years, and we already have 17 million persons over 65.

• Major changes are taking place in where people live and in how they gain their livelihood. Metropolitan centers have been and will continue to be the primary beneficiaries of population growth.

• To an increasing degree the Nation's work in agriculture, industry, government, science, and the armed forces requires more and more the professional, the technician, the skilled--and less and less the uneducated and the unskilled. For these greater tasks, youth must be prepared and adults retrained.

• Changes are occurring in the things for which consumers are spending their money and in the prices which they pay. More is being spent for services and for quality; and in the merchandising world rapid obsolescence and a succession of new products are norms.

• Support for research and development has accelerated tremendously. Public and private funds for research in the past decade probably exceed the total of such expenditures during the entire previous history of the Republic.

• The relations between levels and units of government continue in flux, with new relationships being forged and old concepts being given hard reappraisal.

• Old ideals of opportunity, of welfare, and of security are being given new meaning by acts of Congress; and the rights of citizens and the prerogatives of government are being given new interpretations by the Courts.

• From outside our borders--and from space--we are confronted with the rapid technological advances of other nations and with the aspirations of the people of less developed lands.

These are some of the forces that dominate this time in history. They determine the manpower requirements, the needs for facilities, the kinds of services, and the avenues of future investigation. It is our understanding of these forces and of the issues and of problems which they generate that determines, in large measure, national policies and programs of action.

The legislative program of this Administration in the fields of health, education, and welfare reflects an appraisal of major needs of today and tomorrow. Legislative proposals in 1962 are focused on four major problem areas:

First, expanding and improving educational quality and opportunities;

Second, meeting the needs of our older population;

Third, defining new directions in social welfare; and

Fourth, improving and protecting the public's health.

In his State of the Union address, his Economic Report, and in a series of special messages on education, health, and welfare, the President has indicated areas of unmet need and has made specific proposals for attacking them.

To expand and improve educational quality and opportunities the Administration has recommended programs that would provide for:

• Construction of public school classrooms;

• Better teacher salaries;

• Improved teacher training;

• Loans to colleges for the construction of academic buildings;

• Federal scholarships; and

• The beginning of an attack to reduce adult illiteracy.

To better care for the health needs of the aged, the Administration has urged the enactment of health insurance under social security.

In providing new directions in social welfare Congress has already enacted legislation that stresses:

• Services instead of support;

• Rehabilitation instead of relief;

• Training for useful work instead of prolonged dependency; and

• More skilled personnel and more

efficient welfare administration.

To improve and protect the public health we are recommending legislation that will:

• Expand the number of physicians and dentists;

• Support the construction of new medical and dental schools;

• Strengthen the Federal role in support of medical research; and

• Plan and organize for comprehensive environmental health controls.

A very large number of facts, collected from many sources by many agencies, public and private, have contributed to our understanding of the economic and social needs of the people in the fields covered by these legislative proposals.

For example, the assessment of the need for health insurance for the aged under social security, is based on:

• The growing numbers of aged persons, the result partly of the longer life span.

• The rising proportion of deaths that are caused by the degenerative diseases.

• The steep upward trend of hospital costs.

• The limited and often inadequate income of most aged persons.

• The restricted coverage of older persons by voluntary health insurance.

We know that hospital stays are costly, that older people go to hospitals more frequently and stay longer. We know that prolonged illnesses in many cases entail expenses which exceed the total resources not only of the aged persons themselves but of their families as well. The belief in the feasibility of such insurance, furthermore, is based upon actuarial analysis that has yielded the proposed days of coverage, the deductibles, and the other features embodied in the legislation supported by the Administration.

Similarly, the educational proposals are based on statistics in considerable depth that have been evolved over a long period of time both within and outside the government. We have reasonably adequate figures on:

• The growing size of our school age population;

• Present enrollments and those that can be expected in the years to come;

• The educational attainment of the population and the proportion who drop out of school in successive years.

• The numbers of teachers and their compensation; and

• The numbers of full-time teachers who are not qualified by the standards of their own States.

Educational statistics, such as those of classroom shortages, have come in for a good deal of criticism, some of which probably is justified. Yet in fairness it should be said that the statistical community has contributed importantly to our understanding of this vital area of national concern. Unfortunately, educational policies have been at the vortex of strong feelings with regard to Federal responsibilities, States' rights, racial integration, and Church-State relations. Under these conditions it is difficult to assess the extent to which statistical shortcomings are the cause of our national failure to enact legislation that is in accord with the needs of the Nation.

The statistical support for our proposals in other areas could be cited. It is sufficient to say, however, that few serious legislative proposals, involving large numbers of people and affecting major areas of national concern, are ever formulated without prolonged and searching inquiry. Without a reasonable statistical base few of them are likely to emerge as law from our governmental process.

Statistics help to promote the appreciation both by Congress and the public of the need for action. In general, statistical presentation for this purpose must be simple and their pertinence to the issue under consideration must be apparent. Their impact is reduced by statistical qualifications and the use of words with specialized meanings that are not generally understood.

Here are some statements that meet these qualifications and which have had or are now having real usefulness in the consideration of important subject areas:

• 5,000,000 Americans are mentally retarded.

• Public assistance recipients total 7.5 million--4% of the population.

• Today 48 million people are enrolled in school; by 1970 enrollments will reach 60 million.

• There are 8 million people in the Nation who are classed as "functional illiterates"--that is, they have had less than 5 years of schooling.

• Of persons over 65 discharged from short-stay hospitals, only 30% have 3/4 or more of their bill covered by insurance.

• 2,000,000 disabled persons could benefit from vocational rehabilitation. Disabled persons rehabilitated into employment will pay, on the average, $7 in Federal income tax during the remainder of their work lives for each dollar invested in their rehabilitation.

• Hospital expenses per patient day averaged $9.39 in 1946. They are now about $35 per day.

• The average cost of medical education is more than $11,600. The cost of a dental education also averages more than $11,000.

• 43% of the 1959 medical school graduating class came from the 12 percent of American families having incomes of over $10,000.

• The educational level which a person attains is a product both of the education of the father and the family income. Where the father did not graduate from high school and the family income was less than $5,000 only 13 percent of the children had some college attendance. In contrast, where the father graduated from college and the family income was $10,000 or more, 89 percent of persons aged 16-24 years old had some college attendance.

These examples illustrate ways in which the statistical community serves the legislative process both in the formulation of proposals and in their presentation. Yet there is a question as to the proper relationship between the statistician and the official, particularly the policy-making official. This question involves the responsibilities of the statistician in relation to the political process. In discussing this relationship some historical perspective will be helpful.

The name statistics was first applied to matters important to the State. The term statistics is derived from the Latin ratio status and an equivalent Italian phrase. These phrases were coined in the later Middle Ages to designate the study of practical politics, or the statesman's art, as distinguished from the study of the history and philosophy of the State. To these words we owe the English word statist, signifying a person versed in public affairs and the word Statistik, which was coined in the mid-18th century as the German equivalent of ratio status.

In one of the earliest known definitions, statistics was defined as "the political science of the several countries." The earliest known use of the word statistics in the English language defines it as "the science that teaches us what is the political arrangement of all the modern states of the known world."

Both the Statistical Society of London and the American Statistical Association in their early days viewed statistics as "the ascertaining and bringing together of those facts which are calculated to illustrate the conditions and prospects of society."

Only a century ago statistics were defined in terms that gave as much weight to concepts of the state and of society as to the concepts of facts and figures.

In recent decades the definitions of statistics have given increased importance to number and the ideas of state and society have receded into the background. Today we often see statistics defined simply as the numerical study of groups or masses and their component units. Here are definitions taken from some recent textbooks:

> "The main purpose of statistics is to draw as reliable conclusions as possible from the results of experiments."
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> Statistics "refers to a vast and growing body of techniques for collecting, analyzing, presenting, and extracting the meaning from statistical data."
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> "Statistical methods are the techniques used to facilitate the interpretation of collections of quantititative or numerical data."

We believe that it is unfortunate to find these definitions of statistics that omit reference to the application of the results of statistical efforts. While we can pay tribute to the many accomplishments of the statistical community, we also should recognize that there is some failure, or at least a reluctance, to emphasize, so far as our social problems are concerned, the importance of applying the results of statistical investigations to the policy issues of our day. There are real shortcomings in the effectiveness with which statistical agencies serve the legislative process.

We are aware that government statisticians have various responsibilities. Many of them are part of the staff of an operating program. Their jobs are to portray program developments and to aid in effective administration.

Others are employed to provide the public with "general purpose" statistics on various aspects of national life. The basic act which created the Office of Education, for example, charged it with "collecting such statistics and facts as shall show the condition and progress of education." Other agencies are responsible for collecting and issuing data that will aid the business community.

Only a small proportion of the government's statisticians are employed specifically to aid officials who are responsible for major policy decisions, including the formulation of legislative proposals. There are important exceptions, of course. The Division of the Actuary in the Social Security Administration for many years has provided the Executive and Legislative Branches with computations of the program implications of policy alternatives relating to social security payroll contributions and benefits that can be provided with given income levels.

In general, however, "statistics for legislation" is mainly a question of trying to make do with what is available. We hear about the "information explosion" and the enormously expanded quantity of data that is pouring out of the new data processing machines. In our experience this so-called "information explosion" has not as yet had a corresponding impact on the production of those compelling statistics that are of such importance to the legislative process.

Perhaps the "right" statistics are being produced, or could be produced, but still not enough attention is being given to the study of the outpourings of data to ascertain the policy implications. To extract from the masses of raw data information that can be used in a telling way in the solution of policy problems, still requires the old-fashioned use of eye-sight, reading time, and thought. There is still no substitute for human intellect and judgment. Greater quantities of statistics, in fact, extend the need for the analysis that can be provided only by people and their brains.

There are major problems in getting statisticians to think about national issues and the meaning of the data they are producing. There seems to be too much defensiveness in some of the statements we hear rather too frequently.

Here is the first one:

> "Our responsibility is to the integrity of our statistics. We simply cannot become involved in their policy implications."

This is what might be called defensive position #1. It is based on the implicit assumption that statistics and policy do not make virtuous bedfellows. It reflects a longing for the "splendid isolation" in which statisticians speak only to statisticians.

We realize that this statement represents an honest effort to keep statistics from being the handmaiden of partisan political expediency. It represents a desire to protect the statistician in those situations where statistics are but one of many elements needed in a policy decision.

Nevertheless, we regard the shying away from any concern for policy implications as unfortunate. We can sympathize with what is basically a plea for a tranquil life. However, we do not accept the notion that a statistician will lose his virtue if he looks a policy issue in the face. He can and should be keenly aware of the issues of the day and continually ask "What data do I have or what data can I provide that bears, honestly and objectively, on such and such an issue?" The hotter the issue, the more emotional and partisan the dispute, the greater is the need for the unvarnished objectivity of the statistician who can keep his head out of the sand.

Here is another one you may have heard:

> "If you will just tell us exactly what it is you want, we will try to help you."

This we might call defensive position #2. It is encountered not so often by the top policy official himself as by his staff representative who is sent out to round up any facts that might bear on some question under study.

The demand by the statistician for an exposition of "exactly what is wanted" may have a pretty devastating effect on the staff man, sent out on the fishing expedition, depending on his personality, experience, and tenacity.

Actually he often doesn't know just what he wants or what would be most useful. He doesn't know what might be available, and he usually is not versed in the statistics-lore and lingo of the particular Section or Division to which he has been sent.

In all fairness it should be said that, if the staff man does not wither completely under the initial blast, he usually gets something of use. He will quickly learn, however, that the empathy of statisticians to the problems of the policy official range from those with considerable sensitivity to those who have little or none.

Now for defensive position #3:

> "This series is now being revised. If you will come back in about two years we can give you something that will be much better."

This position says, in effect, that no matter what statistics are now available, and no matter what time, effort, and resources have gone into their production, they simply are not worth using. This position suggests that the policy user would do better just to go away and come back at some indefinite time in the future.

A variation of this "come back later" idea is expressed as follows:

> "The last time that survey was made was about 10 years ago. A new study is underway, but will not be ready for several months."

The injunction to "go away and come again some other day" is particularly discouraging in the context of the legislative process. The legislative calendar ordinarily does not have that much flexibility.

A message, or testimony, or a draft bill usually cannot wait. If we are not ready, we simply default. We have to use what is available, often what is immediately at hand. We can't ordinarily wait on the revision of a statistical series or even on the orderly completion of data in process.

From the policy standpoint, therefore, it is of the utmost importance that the greatest possible attention be given to the issuance at least of initial tabulations and summaries of findings. It is a pity not to have major conclusions available until every last appendix and every last cross reference have been completed and the study has found its tedious way to final publication. The extra effort to make results promptly available means the difference in many cases between its use and non-use for policy purposes. It also is discouraging to find that quite elaborate studies sometimes are published with no summary of findings and conclusions. Sometimes it almost appears that the originators and analysts are conspiring to make the study difficult to use for policy purposes.

Because of the lag in the analysis and publication of data it is especially important that increased attention be given to the preparation of current estimates and projections into the future. Such estimates are the best guesses of experts who are familiar with all of the related basic statistics. Current estimates and projections enable the policy official to talk more persuasively about needs and problems than if he could only make reference to a base period several years in the past.

In concluding this discussion of people in relation to the channeling of data for decision-making we would mention the key role that should be played by Directors of statistical organizations within the agencies of a Department. These people are in a pivotal position. They have under their supervision a variety of statistical and research personnel. They play an important part in the planning of statistical programs and operations. They also have access to officials in key positions, often to the very top of the organization. They are in a particularly favorable position to know about and to sense current and upcoming needs. They can, therefore, perform a vital function of bringing information to bear on the legislative process.

How well research directors perform this dual function determines whether statistical information enters the policy formation process in a meaningful flow or merely trickles up in fits and starts through devious and doubtful channels. Policy officials should be able to regard the Directors of major statistical programs, not just as overseers of statistical operations alone, but as persons who understand their obligations in synthesizing the subject matter in a given field and their role as resource persons in the process of policy formation.

A strengthening of the role of key research and statistical personnel will help in the support of our legislative activities. Yet, it is only fair to say that the ways of legislation are intricate, and the forces bearing on an issue are not easy to measure. We must always realize that all the data in the world are of no use, if the climate of receptivity is unfavorable. Statistics alone can never insure victory, especially when they collide with emotion and prejudice.

Yet we can be sure of the long-term power of honest facts honestly obtained. And that is our joint responsibility.