Draft

MEASURING THE SUCCESS OF EDUCATION, TRAINING, AND WORKFORCE DEVELOPMENT

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National Association of Workforce Agencies, Labor Market Information Committee
Prepared by the Workforce Analysis Subcommittee
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Table of Contents

Measuring The Success Of Education, Training, and Workforce Development
Executive Summary

Justifying public investment in employment and training programs to meet changing employment demand is a focal point of the Workforce Investment Act (WIA). Workforce Investment Boards, employers, and individuals need answers to the following questions:

- Do people find work after training?
- What role does education and training play in earnings?
- What is the most effective public investment to assist employers in finding workers?
- What are employers' emerging needs?
- How do Community and Technical schools respond to market demand?

WIA envisioned answering some of these questions with market outcome measures. A key component in answering these questions is the secondary use of Unemployment Insurance (UI) wage records for informational purposes.

State Employment Security Agency (SESA) Research Offices have experienced problems with data quality for UI wage, educational, and other administrative records used in the development of performance reporting and market analysis.

Wage records are obtained by each SESA for use in administering the UI program. Today, several Research Offices are developing ways to mine this, and other administrative databases, for program outcome measurement and labor market analysis. However, development among the states is uneven, leaving many questions unanswered. Some of the barriers Research Offices face are:

- issues of data quality among administrative program databases
- lack of sufficiently funded, staffed and equipped Research Offices
- the lack of an organizational framework to develop a uniform system in each state and among states

To address these barriers we request that the Workforce Information Council (established pursuant to Sec. 309 of WIA) charter a Policy Council to oversee and guide the development of a wage record and other administrative data base programs. Issues to be addressed include:

1. Wage record integrity and the development of standardized methodologies to edit wage record files before they are used in performance reporting, analysis, or inter-State data exchange.
2. Develop a current assessment of state capacity to edit and archive data including equipment, software, and training needs.
3. Designing products to meet user defined needs and questions.

4. Develop and implement confidentiality and privacy programs.
5. Define, build, develop, and maintain institutional knowledge needed to meet the unique and changing needs of customers.
6. Develop standardized products that can be aggregated from local to state and national levels.
7. Initiate and review enhancements to wage records and other administrative databases.

The urgency of this proposal is marked by the current need to promptly develop uniform, high quality performance and consumer reporting under WIA and to meet the needs of State and local boards for required evaluation studies under section 134(e).

In addition to overall program development under the guidance of the WIC, an administrative records program based on wage records can quickly enumerate a near census of labor supply for each State by industry and level of earnings. Secondly, in most states, and in some areas on an interstate regional basis, Research Offices can produce consistent and comparable outcome measures for all Community and Technical College courses, TANF, Carl Perkins vocational programs, Wagner-Peyser labor exchange activities, and other programs.

I. Introduction.

The National Association of Workforce Agencies, Labor Market Information committee proposes an administrative records statistical program with wage records at its core. It is proposed that the program be organized under a Workforce Information Council chartered State-Federal Policy Council using funds authorized under Section 309 of the Workforce Investment Act. We propose to better manage data already collected by the States rather than add new expensive survey programs. All data elements would remain under the control of the State in which the data originated. Regional and National measures would be developed only with aggregated summary data supplied by the States.

The Workforce Investment Act (WIA) of 1998 and the Government Performance and Results Act (GPRA) of 1993 pose two critical problems for research methods and measurement in the field of labor economics. These problems can only be addressed by adopting a new strategy to produce information about educational, employment and training, and labor exchange programs. Understanding outcomes is predicated on our ability to place outcome measures in context. Acknowledging that the success of TANF is partly a function of a strong economy represents an intuitive understanding of the fact that a knowledge of the labor market context within which program activity occurs is essential to understanding why programs produce the outcomes that they do. One of the key problems we face is to quantify both program outcome measures and measures of the market context in such a way that the role and weight of program activity can be appropriately assessed and managed. The second, and related, problem is that we lack the resources and institutionalized research framework to produce locally relevant information for Workforce Investment Board members and their constituents describing how the labor market works and how the workforce development system interacts with the market. Without this knowledge, the function of Boards and the role of management is, at best, ambiguous.

Several State Employment Security Agency (SESA) Research Offices have developed effective strategies to address both problems through the use of wage records linked to economic, educational, training, and other program databases. These strategies can be developed and deployed in all Research Offices.

At present, we lack an effective and standard process in each State to describe how supply and demand in the labor market works – or how the workforce development system, in the broadest sense, interacts with the market. Further, we have no mechanism to describe which elements of the workforce development system are effective in meeting employer and worker needs. This paper proposes a strategy to address these problems.

Wage records based performance measurement systems, defined in WIA, and employed elsewhere, are designed to describe program related earnings and employment outcomes. However, these outcomes cannot be attributed to program intervention because there are many other plausible reasons for observed outcomes. Outcome measures alone do not permit us to determine whether or not those outcomes would have been achieved in the absence of training or

other program activities. Accounting for other plausible reasons for outcomes means linking all wage records, including those drawn from WIA program activities, to market dynamics. If we can account for the influence of market dynamics on all wage record based outcomes, we can then isolate the role of training, education, and other factors. The development of this statistical accounting system represents an evaluation strategy that is distinct and more complex than performance measurement alone and can answer a broad range of questions.

The LMI Committee's proposal departs significantly from past attempts to develop a wage records based performance measurement system. We propose a comprehensive wage record system which takes as its first goal developing an understanding of market dynamics as a necessary means to understand how any employment, training, or educational program can be successfully evaluated. Should this proposal be successfully implemented, each State Employment Security Agency Research Office would be capable of standard reporting comparable across states and which would also have the capacity to produce custom evaluation and analysis services.

Based on State Research Office experience, it is evident that a plausible alternative to the influence of training, which explains WIA outcomes, is differences over time and from State to State in wage record data quality and the consistency of coverage. Research Offices that have worked with wage records have identified problems relating to the following: missing data for all wage records in some accounts in periodic quarters, employer and UI Tax data entry errors, inconsistency between the sum of wage records earnings and total earnings reported by employers, wide unexplained variation from one quarter to the next in earnings for the same wage record in the same account, lower wage record counts than the employment reported by the ES-202 program, duplicate counts of wage records for predecessor and successor UI accounts, invalid social security numbers, and others. Using wage records indiscriminately can lead to misleading outcome measurement. Unedited wage records can lead to situations where the same wage record in two different UI accounts is accumulated to produce inflated earnings levels. Missing data from delinquent employers, of course, can have the opposite effect. At this time, the scope of the problem and standard edit schemes to produce uniformly high quality data have not been systematically developed.

Despite the broad-based long-standing interest in the development of wage records as a tool for program management, analysis, and accountability, a comprehensive program has not been forthcoming. Historically, most proposals involving wage records have been based on non-experimental performance measurement, strategies focused on a narrow range of interventions (e.g .JTPA exclusively, WIA exclusively), and have been proposed for development by non-statistical entities (e.g. NOICC). Understanding program outcomes depends on our ability to explain outcomes for a population that can legitimately be compared to employment and training participants who receive no services. Measurement initiatives focused only on program participants yield so little information that their costs cannot be justified unless the objective is to offset the expense of failing to produce indices which create the impression of responsiveness to the requirements of GPRA.

WIA implicitly recognizes the need to adjust expected program performance outcome levels based on the local economic-demographic context. Section 136(c)(3) acknowledges the need to set "local levels" of program performance by taking "into account the specific economic, and other characteristics of the population to be served in the local area." However, WIA does not identify how this task is to be accomplished in an objective, standard, and therefore equitable way in each locality. Since outcome performance measures are based on wage records, "taking socio-economic characteristics into account" when setting local levels of performance necessarily means developing the capacity to measure how the market in an area generally performs based on wage records. If we are to uniformly account for the local market context in general, so that uniform standards can be applied to establishing local wage records based performance measures, it is evident that the local context needs to be measured in a consistent manner from locality to locality across States using wage records. This context, then, becomes the common standard against which all program activity including WIA, Carl Perkins, Wagner-Peyser, Vocational Rehabilitation, and TANF funded activities, is evaluated.

Defining the local labor market context in any way other than through the use of administrative databases is far less useful and much more expensive. Expanding the current system of labor market information to provide pertinent State and local information, would be cost prohibitive were it to depend on conventional strategies. Sample survey estimates programs produce relatively current data but contain substantive gaps, geographic limitations, and represent only snapshots of conditions. Census information, often rich in local detail, is far more costly, requires extensive processing time, is available only in multi-year intervals, and, like sample based estimates produces a static profile of conditions. Producing locally relevant, dynamic information at reasonable cost means developing the use of administrative data in the form of wage records.

A wage records program and the development of longitudinal administrative databases are required by Section 309 of the Workforce Investment Act. WIA also includes the necessary confidentiality requirements consistent with the Privacy Act. However, the proposed program creates a much more complex environment relating to the privacy of individuals and firms which means that this component of the program needs to be fully developed as the first priority. An essential component is a standard inter-State data sharing agreement which meets all Federal and State confidentiality and privacy concerns.

Finally, the proposed program would contain the richest source of information ever assembled about the labor market and its dynamics. State LMI Research Offices, in order to meet State and local needs, focus most of their resources on applied research to address a relatively narrow range of ongoing issues. State focus on applied research occurs at the expense of basic research in labor economics which would provide knowledge about a range of conceptual issues generally applicable to understanding markets and policies across States. In order to address the need to obtain the highest values from the proposed program, it is recommended that the Policy Council incorporate an advisory role for academics and seek ways to fund joint academic-State research on labor market and policy issues of regional and national importance.

II. State Research Office Experience with Wage Records and other Administrative Databases.

State Mission Statement:

Pursuant to Section 309 of the Workforce Investment Act, it is the mission of State employment statistics offices to ensure the participation of the States in the development of the national employment statistics plan ((e)(1)(A)and 2(H)) ... and conduct data collection, analysis, and dissemination activities as will ensure an effective employment statistics system ((e)(1)(A)) ... which taken together, enumerates, estimates and projects employment opportunities and conditions at national, State and local levels in a timely manner ((a)(1)(A)).

A. Introduction.

As the labor market adapts to the new economy in recent years, many new research areas and policy issues have emerged. Factors that characterize the new economy, such as global competition and rapid advances in technology, are shaping a changed environment for employees and firms alike. Employees need to continually improve their skills to retain jobs for long periods of time. Employers need to follow an efficient path of operation to remain competitive and grow. In this environment of change, the ability to measure the performance of the labor market as a whole and its components taken separately --- employees, firms, and State agencies' employment programs --- constitutes an important asset for labor market analysts and policymakers.

Many, if not all, of the data sets currently used in labor market research are of limited use in addressing the major changes occurring in the labor market. These changes have produced greater demands for appropriate and reliable data that could allow a better look at the performance of the labor market. One data set that is readily available and possesses great potential for labor market research and program evaluation and performance measures is the Unemployment Insurance (UI) wage records. In fact, many States have sought answers to various labor market issues using UI wage records. The purpose of this chapter is to show how UI wage records have been used in selected circumstances and how their use could be expanded to all States.

Various State Employment Security Agencies (SESA) involved in using UI wage records in labor market research were contacted to collect information on their experiences using UI wage records in research. Specifically, the SESAs were asked the following five questions:

1. Is any validation, or cleaning, performed on UI wage records?
2. Do you link UI wage records to other data sets? If so, what are these data sets?
3. What are you using UI wage records for?

4. What products are being produced from the research using UI wage records?
5. What funding sources are supporting the research using UI wage records?

Answers were received from the following states: Alaska, Florida, Illinois, Minnesota, Montana, Nebraska, North Carolina, New York, Pennsylvania, South Dakota, Texas, Washington, and Wyoming. These states are using UI wage records in a wide range of research projects, including wage distributions of employees, job holding patterns, job creation, job destruction, flows of jobs and workers, and performance measures of various programs. While many fascinating results are being obtained from the SESA research efforts, these efforts are independent and executed with limited funding. No coordination or communication exists between the SESAs to learn from each other's research experiences and results. In many instances, different methodologies are being used for the same concept. As such, the SESAs' efforts can not be extended to a consistent comparative regional or national analysis to identify general trends and forces pertinent to the labor market.

This chapter is organized into seven sections. The first section documents UI wage records as a rich data set available for research use. The second section describes the different files that are linked to the UI wage records to augment its research value. The third section discusses validation of UI wage records data. The fourth section provides illustrative examples of how this data set is used by State Employment Security Agencies (SESAs) in labor market research. The fifth lists many of the products published by SESAs from research using UI wage records. The sixth section addresses funding sources used to carry research on administrative databases. The last section contains concluding comments.

B. Content of UI Wage Record Files.

The original and main objective of the UI wage records file is to administer the UI program by the SESAs. The UI program includes: collecting UI tax contributions from employers for payment into a federal pool or a federally approved State UI compensation system; verifying claims records of separated workers; and processing the legitimate claims.

The UI wage records file is collected quarterly by the SESAs and contains information on wages for all employees who provide any labor services to firms operating in a particular State and subject to that State's UI laws. As such, the UI wage records file is a near census of employment. It excludes only Federal employment and employment not covered by State UI laws.

Each record in the UI wage records file contains the employee's social security number (SSN) and total quarterly wage earnings. In some States, such as Minnesota and Washington, the employee's total number of hours worked in the entire quarter is also reported. Alaska is the only State in which information on the occupation of each employee is also collected. Having information on occupation makes Alaska UI wage records of higher value for labor market research than UI wage records from all other States. Occupational information adds tremendous

power to UI wage records because it permits solving many questions about the performance of the labor market.

In addition to information on employees, in Minnesota for example, each record also identifies the employer through a ten-digit UI account number, where the first seven digits indicates the firm's account number and the last three numbers indicate whether the firm is a single- or multi-unit establishment. Other identifying information about the employer includes the name of the business, the business address, telephone number, and corporate officer identification. To distinguish records for the same employee over time, each record includes specific entries for the calendar quarter (1,2,3, or 4) and the year. Thus, it is apparent that UI wage records are a rich data set and as such can yield high returns to research.

C. Increasing Research Value of UI Wage Records.

The data elements in the UI wage records are ideal to investigate wage distributions and movements of jobs and workers. However, because it contains no demographic variables on employees or employers, the UI wage records can only yield general, or aggregated, results. To circumvent this shortcoming, usually the UI wage records are linked to other data sets that contain demographic information on either employers or employees.

One such linkage is with the ES-202 files, or the Covered Employment and Wages files. These files represent a quarterly census of information on employers subject to or covered under State UI laws. In addition to a unique employer account number, the ES-202 files contain data on employment, wages, industry, county, and at the establishment level. Transferring employer information on industry, county, and employment size on to each UI wage records allows for research results using wage records to be obtained for each industry classification, each county, and each firm size class.

While the ES-202 provides specific information about employers, there are many data sets with demographic information on individuals that can be linked to the UI wage records. These linkages allow results to be presented by age, gender, place of residence, and other demographic classifications. To appreciate how the value of UI wage records could be increased tremendously enabling analysis of many labor market questions, a list of the various data sets with individual demographics that Alaska and Wyoming link to wage records is given below.

<u>State of Alaska:</u>

Alaska Permanent Fund Dividend Applicant and Recipient files,
Alaska Department of Public Safety:

- ? drivers license

Alaska Department of Fish and Game:

- ? sport fishing and hunting license
- ? subsistence fishing and hunting license
- ? commercial fishing permits
- ? commercial fishing crew license

Alaska Department of Community and Economic Development:

- ? business license
- ? occupational license

Alaska Department of Health and Social Services:

- ? welfare/temporary assistance clients

Alaska Department of Labor and Work:

- ? Job applicants

Alaska educational program completers:

- ? University of Alaska
- ? Seward Skill Center
- ? Kotzebue Technical Center
- ? private sector training providers

Office of the Lieutenant Governor:

- ? voter registration

US Office of Personnel Management
US Postal Service
US Department of Defense

State of Wyoming:

University students
Community colleges
State Department of education annual professional staff file
Vocational Rehabilitation
WIA Title I
Department of Motor Vehicles Drivers license
Temporary Assistance to Needy Families (TANF) files
Job Service
UI Claims
Adult Basic Education and Carl Perkins
Professional teachers staff board file for substitute teachers

Other States, such as South Dakota, also have extensive linkages among administrative data sets, while some States, e.g., Nebraska, have recently begun to link wage records to the demographics in their Department of Motor Vehicle (DMV) file.

D. Validation of the UI Wage Records.

Accurate data is fundamental to the success of all empirical research. In line with this principle, using the UI wage records data set in labor market research should be preceded by an attempt to verify the accuracy of its data elements. Because the main purpose of the wage records data set is not research, and also due to its very large size, the data set is subject to errors. Some of the errors commonly found in the wage records data set include the combinations of zero wages and positive hours or zero hours and positive wages. Other errors involve duplication of the same SSN with the same employer in the same quarter.

While most, if not all, SESAs perform edits to UI wage records as part of the execution of the UI program, some States have developed more extensive validation methods. These methods seek to construct an accurate data set that can be used in labor market research. Some examples of validation work followed by SESAs are given below:

State of Alaska:

The Alaska wage records are validated and updated on an ongoing basis. In addition, regular and special analyses help to identify invalid records and are an essential part of the ongoing quality control effort. The process of validation involves:

Employers that do not provide SSN's are contacted to provide the missing information.
Employers that report a total taxable wage amount that differs from the sum of individual
wage records for that employer are contacted.
Employers that have not provided occupation and place of work are contacted.
Employers that provide occupations that are not valid for a particular industry are contacted.
Employers are tracked from quarter to quarter to validate occupations provided.
Employers are contacted when occupation codes seem otherwise invalid, for instance, employers who code all their employees as managers.

State of Minnesota:

Minnesota has developed a validation procedure that systematically analyzes the accuracy of the employment and wage data in wage records. This procedure measures the accuracy of (1) each quarter of UI wage records separately and (2) a time series of quarterly UI wage records. While the quarterly validation is sufficient for research requiring only a single quarter, it is incomplete for studies requiring a time series of quarterly UI wage records. For these latter studies, accurate records are necessary in all quarters forming the time series of interest.

The validation of the Minnesota UI wage records uses several routines, and associated sub-routines, to verify the accuracy of total wages of each firm, total employment for each firm, wages for each job (or SSN), wages for each employee, hours worked at each job, and hours worked by

each employee. These routines use the ES-202 file as the primary source for validating the UI wage records. This decision stems from the fact that the ES-202 data contains accurate data on employers as a result of the extensive edits to which it is subjected.

The accuracy of the Minnesota UI wage records for research purposes varies from about 70 percent to 95 percent depending on the type of labor market research considered. This variation in the accuracy rate depends on (1) the variables to be analyzed in a particular research project --- whether employment alone or both wages and employment are considered, and --- (2) the time period chosen in the analysis --- a single quarter vs. a time series of quarters. Charts 1 and 2 present the accuracy rate of and the magnitude of each error type in the Minnesota wage records for an average single quarter and for a time series composed of three quarters, respectively.

Chart 1: Accuracy of UI Records on Workers
Using a Single Quarterly Wage Detail File - Minnesota 2000

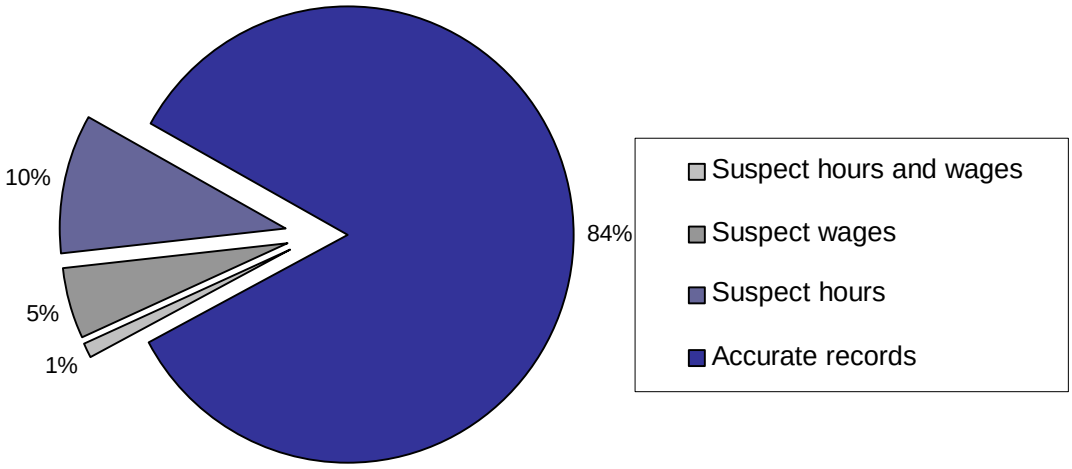
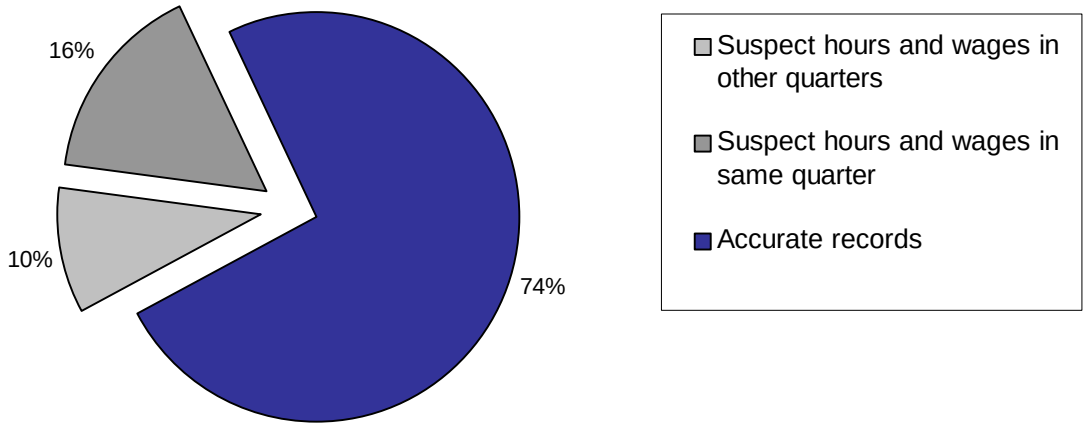


Chart 2: Accuracy of UI Records on Workers
Using Quarterly Wage Detail Files From First to Third Quarter - Minnesota 2000



E. SESAs' Use of Wage Records in Performance Measures.

The automatic output of the validation process is a data set of accurate UI wage records that can be used to measure the performance of the labor market. Much of the research in this area can be grouped into three major categories: program performance, descriptive analysis of labor market performance, and job creation and worker flow.

1. Studying Performance of State or Federal Employment Programs

The first category of research involves the ability to measure the outcome of various State or federal employment programs for their intended population, especially where those programs require performance accountability (such as, the Workforce Investment Act (WIA) and Temporary Assistance to Needy Families (TANF)).

Assessing the effectiveness of these programs in achieving their goals and finding how to improve their economic and social efficiencies are of great value to labor market analysts and policymakers.

There are many questions about program performance which can be investigated using wage records. For example, considering the TANF program, some research questions may include: What type of employment do the TANF recipients find? What industries and types of firms are hiring the TANF recipients? What level of wages are they earning? How long do they stay in the same job? What is their wage growth profile over time? How do their wages and job holding patterns differ in relation to demographic variables such as age and gender, or to geographic location of residence?

The importance of program performance measures has prompted many SESAs to independently develop models using wage records to study the performance of WIA, TANF, and many other State or Federal programs. Some examples of States which perform this type of research include:

State of Alaska:

Training Program Performance Studies (for 1999, 1998, and 1997)
The objective of these studies was to evaluate Alaska State employment related training programs to determine the employment status and earnings of program participants after completion. These studies matched participant's records to the Alaska UI wage records and to other files containing demographic variables such as Washington State UI wage records, federal military and civilian payroll records, Alaska Permanent Fund Dividend files, and Alaska business license files.

The training programs studied were grouped into three clusters based on participant characteristics:

1. Adult Training Programs:
   - ? Adult Vocational Education
   - ? Adult Vocational Training
   - ? Job Training Partnership Act (JTPA) Title III
   - ? State Training and Employment Program

2. Programs Serving Adults with Barriers to Employment:
   - ? JTPA Title II-A
   - ? JTPA Title II-A Older Worker Program
   - ? JTPA Title II 8% Vocational Education
   - ? Alaska Work Search

3. Programs Serving Youth:
   - ? JTPA Title II-B
   - ? JTPA Title II-C

Because each of these programs has its own performance measures, trying to summarize the results in this chapter is not feasible. Instead, the complete reports can be accessed at

http://www.labor.state.ak.us/ then opening the following pages: Research and Analysis / Publication and News Releases / Special Reports.

State of Minnesota:

Welfare Reform Economic Effects on Neighborhoods Study:

UI wage records were used in this study to analyze how the income of neighborhoods is affected by welfare reform. Specifically, the pre-welfare reform neighborhoods' incomes are compared to incomes from post-welfare reform years. The focus is on how the income of neighborhoods is affected by changes in the income of recipients of various welfare assistance programs and the grant flows from these programs.

Two hypotheses were tested in this study. The first one claims that welfare reform will encourage welfare recipients to work and eventually leave welfare and become self-sufficient. Total income flowing to neighborhoods will increase and will be multiplied through the spending "ripple effect." The alternative assumption states that welfare reform will act to reduce total income flowing to neighborhoods as welfare recipients, as a group, experience grant losses stemming from sanctions and ultimately expend their 60 months of assistance.

To test these hypotheses, the Minnesota study uses a time series of quarterly UI wage records linked to files containing monthly data on welfare recipients for the years 1996 to 1999. After these files were linked by the SSNs of the welfare recipients, these individuals' earnings from jobs were determined and are assigned to a specific neighborhood. Then, the individual grants are added to obtain total income from work from both sources by welfare recipients for each neighborhood. Finally, the neighborhood annual total income is computed for each year and changes in these incomes due to welfare reform are evaluated.

State of South Dakota:

Follow-up Project:

The Follow-up Project involves determining placement outcomes for recipients of various State and Federal programs as well as for some subsets of the South Dakota workforce. Measures are obtained specifically for the following groups:

- TANF clients
- WIA clients
- Secondary vocational program completers
- Vocational Rehabilitation training program completers
- Job Corps
- all public post-secondary graduates
- technical institute graduates

- ? high school graduates
- ? General Education Diploma.

The South Dakota Follow-up Project links State wage records to neighboring State wage records to gather industry and wage data about program graduates and completers. In addition, wage records matched to ES-202 data are used to determine which firms hired each graduate or completer. Once the hiring firms are identified, they are surveyed regarding the graduate starting date on the job, job title, starting wage, current wage, city work location, and types of benefits offered.

The examples listed above from Alaska, Minnesota, and South Dakota show that States have embarked independently on highly valuable research to analyze program performance. These examples are certainly not an exhaustive list of the efforts of SESAs to use their UI wage records in this area of research. Many States, including Wyoming and Illinois, have generated a wealth of experience and research findings on the effectiveness of TANF and other programs in achieving their goals. While the SESAs' efforts are numerous and very important to public policy, they lack a formal system of coordination and communication. Such a system could help the SESAs learn from each other's research projects and build on them to greatly improve the understanding of how these programs are affecting the intended populations and how the labor market is adjusting to program policy changes.

2. Studying Performance of Labor Market Employment and Jobs.

In addition to studying the performance of labor markets using only specific subsets of the employment population, there is a large body of research that incorporates the whole employment population. This area of research is based on UI wage records files and seeks to assess the health of the economy by developing answers to some very important questions, such as: What is the shape of the wage distribution in a given labor market? How does the wage distribution differ by occupation, industry, geographic area, and firm size? Is the "rich getting richer and the poor getting poorer" a myth or a fact? How does the wage distribution differ by demographic variables such as gender and age? What is the extent of multiple job holding? Other questions on wages and employment are asked by economists and policymakers and require research attention.

Research by many SESAs on these questions has yielded some fascinating results. An exhaustive review of this research is needed to pull together all results pertaining to each issue. This exercise should uncover any consistent trends or forces in play across all State labor markets or subsets of these markets. While such an endeavor would clearly show the value of UI wage records to research, it is beyond the scope of this paper. However, the following presents examples of some

SESAs' efforts to answer the above questions. The objective of these examples is merely to show what can de done with wage records.

State of Alaska:

Wage Earnings by Age Study:

Age is one of the strong determinants of the choices employees make in seeking jobs. To determine how wage earnings differ by age, the Alaska study matched the UI wage records with Alaska Permanent Fund Dividend (PFD) applicant files. This allowed the age to be determined for employees included in UI wage records and the classification of these employees into five age groups:

- Youth (14 to 18),
- Young adults (19 to 29),
- Adults (30 to 49),
- Older adults (50 to 64),
- Seniors (65 and over).

One very important finding of this study was that age strongly influences wage earnings of employees. Specifically, the growth in median wages was found to increase as age increases. This result was explained by a shift from part-time, seasonal jobs for youth to full-time, year-round careers for older age groups. The study also investigated how occupation and industry affect the relationship between age and wage earnings. Due to UI wage records, new insight was gained in how age affects the wage distribution. The complete report on this study can be accessed at: **http://www.labor.state.ak.us/** then opening the following pages: Research and Analysis / Publication and News Releases / Alaska Economic Trends / January 2000.

The Gender Gap in Earnings Study:

The objective of this study was to assess the extent of wage earning differences between men and women. To conduct this study, the Alaska UI wage records was linked to Alaska Permanent Fund Dividend (PFD) applicant files and to Alaska Voter Registration files to obtain employee gender and age for those listed in wage records. Next, the wage earnings were computed from wage records and summarized by gender, age, occupation, industry, and geographic location of work.

The results derived in this study are very informative. For instance, it was found that in 1997, women earned 65 cents for every dollar men earned. This finding was consistent in every industry, in every age group, in every location of work in Alaska, and in most occupations. Another finding revealed that many industries are dominated by one gender. About four-fifths of employees in health services and insurance industries were women. These findings are valuable to all players in the labor market --- employees, employers, and policy makers. One of the recommendations of this study was that women could improve their earnings by training for or searching for jobs in higher paying occupations.

State of Minnesota:

Distribution of Hourly Wages Study:

This study seeks to analyze the hourly wages paid at jobs in Minnesota as well as the hourly wages received by employees. The difference between these two hourly wage measures is captured in the job holding patterns of employees. While the two measures are the same for an employee who is a single job holder, they are different for a multiple job holder. The hourly wage distributions are derived by industry, county, firm size, and by the employees' attachment to the labor market as measured by number of quarters spent at a particular job.

The Minnesota study linked wage records to the ES-202 files to obtain industry, county, and firm size information. Then the augmented wage records were used to determine the hourly wage distributions. One of the major findings of this study concerns the relationship between the hourly wage distribution and employees attachment to the labor market. The 1999 hourly wage distributions for workers who were in the labor market for only one quarter, only two quarters, only three quarters, and all four quarters showed different distributions.

Chart 3 (see page 16) presents the overall hourly wage distribution along with the distributions by number of quarters worked. For instance, dividing the distributions at the wage of $10.00 per hour into two portions reveals the following:

- When all employees are considered, about 35 percent of them earn less than $10.00 per hour.
- When the employees are separated according to their attachment to the labor market, the proportion of employees earning less than $10.00 per hour becomes:

  63 percent for those employees who worked only one quarter,
  56 percent for those employees who worked only two quarters,
  44 percent for those employees who worked only three quarters, and
  24 percent for those employees who worked all four quarters of the year.

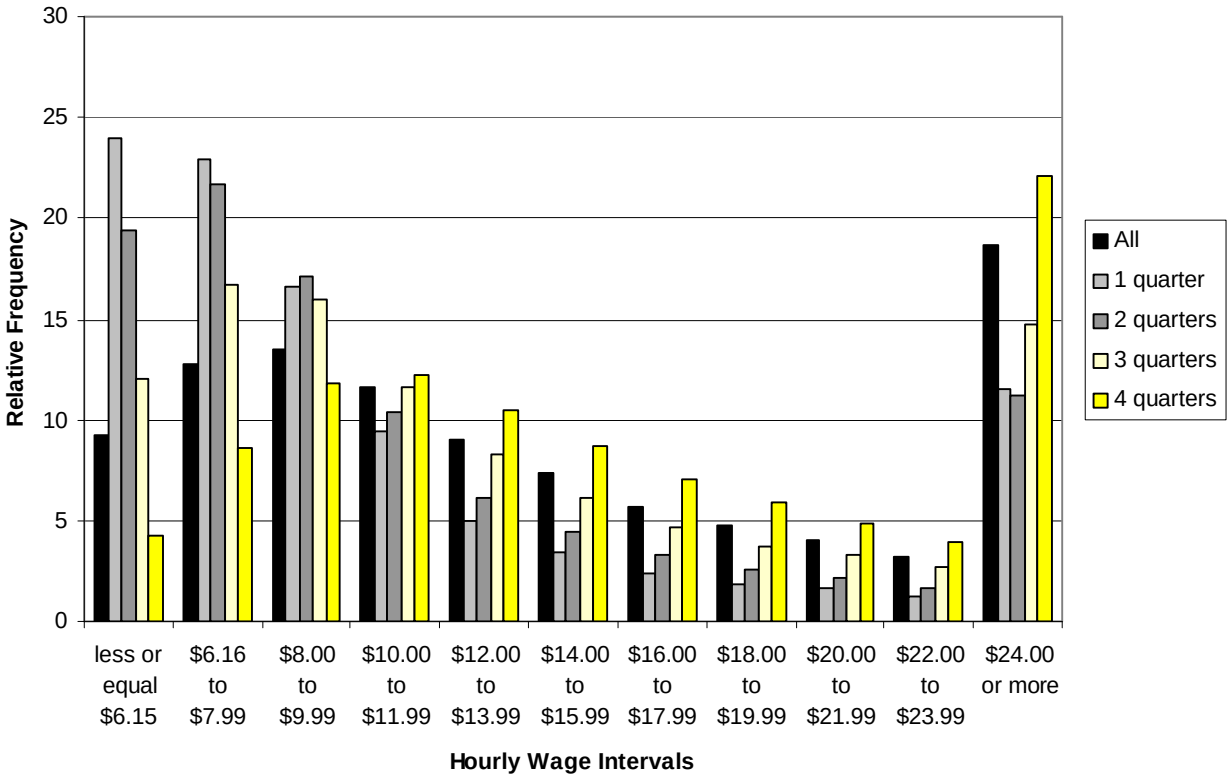
These results clearly indicate that the incidence of low hourly wage jobs worked is probably due to a combination of employee characteristics as well as job characteristics. In addition to the fact that these jobs are low paying, the results reflect the fact that the employees selecting those jobs are probably young adults or part-time employees. The demographics of job holders as an aspect of job holding in low wage jobs is missing from much of the current research on low wages where the attention is focused on the characteristics of low pay scale jobs.

State of Washington:

The Washington Wage Report study:

Like the Minnesota study, this study used wage records and the ES-202 files to develop hourly wage distributions by industry, county, and firm size. In addition to developing wage

Chart 3: Histogram of Hourly Wages Earned by Minnesota Workers in 1999 by Duration of Employment in Quarters



distributions, ratios of hourly wage percentiles were computed and analyzed to answer the question: "have the rich gotten richer and have the poor become poorer?" The complete results of this study can be accessed at: **http://www.wa.gov/esd/lmea/sprepts/wagerpt/wawagrpt.htm**.

As with studies of program performance, each SESA is working independently to develop research projects to investigate the performance of the labor market as measured by employee wages.

While each SESA achieves ground-breaking results from these projects, combining SESAs' efforts should yield even greater findings about the functioning of the labor market.

3. Studying Performance of Labor Market – Flow of Jobs and Workers.

The third category of research, which has increasingly become a major focus of public policy, deals with the ability to measure the overall performance of the labor market. Interest in this area stems from the desire to be able to evaluate the capacity of an economy to create jobs and the extent to which jobs and workers flow into and out of the labor market. The creation and

destruction of jobs and the movement of workers into and out of employment are a natural outcome of the dynamic processes inherent in the labor market.

Some of these dynamics arise from the opening, expansion, contraction, and closing of individual firms. The ability to construct estimates of the dynamic processes related to firms, workers and jobs, would help one understand the performance of labor markets and devise good economic, and workforce development policies.[1] In addition, analyzing the long term relationships between dynamic measures from administrative databases, and current survey based estimates of labor market activity, would permit more effective interpretation of the underlying meaning of current estimates at the State and local level.

Here again the UI wage records are an excellent data set to aid in the study of the dynamic processes of the labor market. Many SESAs have developed models to estimate new hires, job separation, and flows of jobs and workers. No attempt will be made here to discuss all these models. Instead, the Minnesota and Wyoming models are presented next to simply demonstrate how the UI wage records are used to estimate movements of jobs and workers.

State of Minnesota:

Flows of Jobs and Workers Study:

This study uses the UI wage records linked to the ES-202 files to derive estimates on new hires, worker exits, net job flows, gross job flows, worker flows, and churning flows. These estimates are derived for the whole State by industry, county, firm size, and firm type. Table 1 (see page 18) presents a summary of the extent of flows of jobs and workers in Minnesota. The information included in Table 1 is also available by industry, county, firm size, and all possible combinations of these variables. This wealth of information provides a detailed picture of the functioning of Minnesota's labor market.

This study produced several findings. New hires and worker exits represent a substantial share of total employment. In an average quarter, new hires and worker exits each represent about 20 percent of employment. In absolute terms, the sum of the two movements is around 415,000 market transactions. Another result shows that new hires and worker exits follow very different patterns according to the type of firms. Long-living firms, (firms that regularly show positive employment), have a new hire rate of 17 percent and a rate of worker exits of 13 percent. These

[1] A recent report by the Mass Layoff Statistics (MLS) Workgroup of the Workforce Information Council indicates the importance of developing measures of labor market dynamics. In fact, its major recommendation states: "Labor Market Dynamics programs should address the entry and exit of workers to and from employment. This could include plant closing and layoff data as well as additional data on job creation and destruction by businesses, the life cycle of businesses themselves, and other types of separations from employment besides those generated by plant closings and layoffs." The whole report can be accessed at: http://www.workforceinfocouncil.org/wicdocs.htm .

rates are significantly different for short- living firms (or firms that terminated employment), and returning- or seasonal firms.

Table 1. Quarterly Average New Hires, Worker Exits, and Flows by Firm Type in Minnesota - 1997				
	Firm type by employment pattern			
Labor market dynamic measures	**Long-living**	**Short-living**	**Returning**	**Total**
Establishments				
Total	98,869	10,331	7,318	116,518
Percent	84.9	8.9	6.3	100
Jobs				
Total	2,197,649	78,161	67,446	2,343,255
Percent	93.8	3.3	2.9	100
New hires				
Total	366,032	16,689	21,344	404,065
Percent	90.6	4.1	5.3	100
Average / Firm	3.7	1.6	2.9	3.5
New hire rate (%)	17.3	22.9	56.2	20.2
Worker exits				
Total	329,317	45,837	35,922	411,076
Percent	80.1	11.2	8.7	100
Average / Firm	3.3	4.4	4.9	3.5
Worker exit rate (%)	12.6	60.9	59.9	19.9
Net job flow				
Total	36,715	-29,148	-14,578	-7,011
Average / Firm	0.4	-2.8	-2.0	-0.1
Gross job flow				
Total	169,492	35,650	26,739	231,881
Percent	73.1	15.4	11.5	100
Average / Firm	1.7	3.5	3.7	2.0
Gross job flow rate (%)	13.6	50.3	42.1	18.7

Table 1 (cont'd). Quarterly Average New Hires, Worker Exits, and Flows by Firm Type in Minnesota - 1997				
	Firm type by employment pattern			
Labor market dynamic measures	**Long-living**	**Short-living**	**Returning**	**Total**
Churning flow				
Total	525,857	26,876	30,527	583,260
Percent	90.2	4.6	5.2	100
Average / Firm	5.3	2.6	4.2	5.0
Churning flow rate (%)	16.3	33.5	73.9	21.5

State of Wyoming:

Job Turnover and Hire Rates in Wyoming:
This study links the UI wage records to the ES-202 files to develop time series data on the aggregated characteristics of firms and employee turnover. Although this study uses a linkage process with the data files similar to Minnesota, it uses slightly different definitions of hires and exits than those used in Minnesota. Although the Wyoming estimates of labor market dynamics are computed differently from those of Minnesota, the findings of the Wyoming study closely resemble those of Minnesota. For example, the Wyoming study concludes that the number of labor market transactions (individuals hired and exiting jobs) occurring in the Wyoming economy was extremely high (473,316 in 1997). This indicates that labor markets are probably behaving in a similar fashion across States. Thus, SESAs need to coordinate their research efforts and learn from each other experiences and findings.

F. SESAs' Products From Research Using UI Wage Records.

The findings of SESAs' research efforts using the UI wage records are disseminated using different media. Below is a list of some SESAs' products.

State of Alaska:

The Research and Analysis division publishes a wide variety of research reports utilizing UI wage records:

- Training program performance reports (WIA and for the Alaska Legislature)
- Resident hire research
- WIA training provider Consumer Reports
- New hires information is published in ***Alaska Economic Trends*** and on the internet

- ***Alaska Economic Trend***s articles on age and gender information
- Local area labor market statistics including percent employed, earnings level, place of work vs. place of residence data

State of Minnesota:

Research results from studies using the Minnesota UI wage records are published in:

- Articles in ***Minnesota Employment Review***
- Consumer Reports
- Separate reports summarizing specific topics, such as Validation Methodology, Wage Distribution, and New Hires

State of Washington:

Products published from research using the Washington UI wage records include:

- Evaluation Reports delivered to Workforce Board in the State
- Consumer Reports
- The ***Washington Wage Report***
- Papers delivered to the Department of Labor

State of Wyoming:

Products published from research using the Wyoming UI wage records include:

- Articles in the ***Wyoming Labor Force Trends***
- Reports on employment, training, labor supply analysis and program evaluation

G. SESAs' Funding for Research Using UI Wage Records.

There appears to be no consistent or regular source of funding across States for UI wage records research. The experiences of SESAs in securing funds for this type of research are very different.

In Alaska, the primary source of funding for the Occupational Data Base (ODB) is Alaska's State Training and Employment Program (STEP). The ODB operates on a budget of approximately $330,000. Additional research is funded from a variety of sources including One Stop, STEP, Alaska Department of Health and Social Services, University of Alaska, Alaska Department of Education and WIA/PACIA/WIB related funds.

In South Dakota, One Stop LMI funds are used for some of the wage records work. The Follow-up Project is funded by the programs and agencies participating in the project. However, no funds are available to edit and analyze wage records to the extent that they should be.

In Nebraska, the funding used for the DMV Wage Record match is the ALMIS One Stop money. The money for performance measures is currently coming from a grant received from ETA.

In Wyoming, while funds used to come from the SOICC funds, they currently come from WIA Title I, One Stop LMI, and contracts with private sector consultants, and State agencies.

H. Conclusions.

Although the UI wage records were primarily used for program outcome measurement purposes and administration of the UI program, they contain rich data elements that are very useful for research. The importance of the UI wage records in research has long been recognized by labor market economists. As a result, many SESA researchers have tried to develop models to measure the performance of the labor market using UI wage records.

UI wage records are used to develop employment and training program performance measures especially where those programs require performance accountability (such as, the Workforce Investment Act (WIA) and Temporary Assistance to Needy Families (TANF)). These measures are important in assessing the effectiveness of these programs to achieve their goals and finding how to improve their economic and social efficiencies.

Wage records are also used to study the wage distributions of employees, job holding patterns, job creation, job destruction, and the flows of jobs and workers. While many results are being obtained from the SESA research efforts, these efforts are independent and executed with limited funding. There is a need for more coordination and communication between the SESAs to learn from each other's research experiences and results. This will improve the SESA research efficiency and help identify general trends and forces pertaining to the labor market.
State Research Offices are investigating the fundamental elements, resource allocations, and institutionalized patterns of behavior in the labor market using wage records and other administrative databases. The object of these discoveries is to answers questions raised by Workforce Development Boards, educators, and employment and training program managers that have been unanswered at the State and local (and in many cases at the national) level ever since it was deemed important to ask them. Developing the administrative database strategy requires an initial investment at the State level in a basic research process that is unlikely to have immediate tangible results. Current State Research Office involvement with administrative databases generally proceeds from State-unique series of events, circumstances, and personalities. As we shall see in subsequent chapters, nearly all of the key administrative data needed to answer State and local labor market questions are owned by the States. Since no other level of government holds State interests dearer than the States themselves, it is clearly the States' responsibility to take the initiative in developing administrative databases that meet State and local needs. In the absence of State initiative, there is no guarantee that local needs will be addressed.

III. Current Problems Posed by WIA and Proposed System Design.

Published discussion relating to the development and administration of administrative databases involving records on employers and workers has focused primarily on the role of federal agencies (Haltiwanger et al 1998, Lane and Atrostic 1998). However, administrative data can be used to meet growing expectations of State Executive branch agencies, local Workforce Boards and component agencies. Under these circumstances, it becomes an organizational imperative for State Employment Statistics offices to produce a proposed mechanism to meet these needs.

WIA creates an imperative for local information about the labor market, its participants, and the relationship between the two. At the same time, the mismatch between available skills and demand, and the scarcity of labor itself, is driving community concern across an array of educational, training, economic development, labor exchange, and other programs. Taken together, this array of institutions and programs constitutes the workforce development system.

Understanding how the workforce development system functions depends on understanding the role of each institution and the function of each program, and identifying the process linking workers to employers, employers and workers to training institutions, and workers to temporary support such as unemployment insurance. Each step in this dynamic process generates an administrative record relating to individuals, training institutions, services provided and received, and pertinent tax information identifying worker-employer relationships. As demonstrated in Chapter II, several SESA Research Offices have succeeded in collecting and managing these administrative data sets to shed light on how the workforce development system and the labor market function. This analysis tracks the flow of workers over time and is broadly referred to as the analysis of labor dynamics.

WIA capitalizes on administrative data, in the form of wage records, to produce outcome measures. But there are other reasons to emphasize developing administrative databases, compared to other sources of data, as a strategy to obtain locally relevant information about the structure and functioning of the labor market. First, wage records for all workers related to all employers represent the only measure of the market context comparable to wage records based outcome measures required under WIA. Program evaluation of WIA can only take place when program and market outcome measures use the same unit of analysis. Second, States have already incurred the initial cost of collecting wage records and other administrative databases. Other available and proposed systems of data collection are neither comparable to wage records based labor market measures, current, nor cost effective.

A. An Administrative Database Program as Imperative.

The administrative database approach is founded on a strategy of effectively managing data already collected at the State and local level for administrative purposes, and transforming these data into labor market information. Section 309 of WIA requires an administrative records statistical program, wage records are required for evaluations of WIA based on quasi-experimental design, and wage records are required to objectively define the role of local socio-

economic conditions in program outcome. In contrast to other strategies of developing labor market information and conducting program evaluations, administrative data is affordable, locally relevant, timely, and necessary.

WIA's Section 136, parts (c) and (e), describe how the playing field for performance standards will be kept even between States and localities and how program evaluation will be conducted. State and local evaluation is to be conducted in "...coordination with the activities carried out under section 172...." Section 172 indicates that the Secretary shall conduct evaluations which determine whether or not the outcomes associated with WIA would have been achieved had the program not existed. This is to be accomplished by determining "the extent to which programs ... improve the employment competencies of participants in comparison to comparably-situated individuals who did not participate in such programs...." Completing this task requires that outcome measures for participants and non-participants use common definitions. Common outcome definitions require that wage records be available at the State and local level to carry out appropriate evaluation research design. Unless States conduct a certain level of quality control on wage records and archive them for research purposes, the requirements of Section 172 cannot be met.

Under the Job Training Partnership Act (JTPA), ETA's contractors constructed multiple regression models using Service Delivery Area specific unemployment rates, employment and wage rates in services and retail trade, and crude demographic variables to "adjust" expected levels of performance for the wage at placement and placement rate outcomes. In contrast to JTPA, the task of establishing an even playing field between localities for performance standards, incentives, and sanctions in WIA is accomplished by metaphor. "In determining such local levels of performance, the local board, the chief elected official, and the Governor shall take into account the specific economic, demographic, and other characteristics of the population to be serve in the local area." At this time, the relationship between wage record based outcomes and such measures as the local unemployment rate are not well documented or understood. Consequently, it is difficult to objectively quantify (e.g. through regression modeling) the share of a program's performance level that is a function of program activities, in comparison to the share that is a function of the local economic context. Further, there is no current LMI program activity national in scope, that focuses on describing how unemployment, the industrial composition of localities, and other factors influence wage records based market outcomes in a manner permitting either local Boards or WIA program managers to make informed decisions at either the strategic or operational level.

Providing pertinent State and local information regarding the functioning of the labor market in forms readily understood by all participants in the market would be cost-prohibitive were conventional strategies applied. The Bureau of Labor Statistics (BLS) FY 2001 budget request of $453.7 million represents a sample survey statistical approach to the field of labor economics which produces only a select number of State and sub-State data sets. These are important statical snapshots. However, sample survey based statistical products (including moving average estimates) do not address issues of greatest need and provide data only as a profile in time. Improving the relevance and timeliness of survey snapshots at geographic levels at which labor markets function is a costly proposition. These statistical snapshots are incapable of tracking

either the progress of workers through the workforce development system or how employers obtain and use human resources. From the standpoint of understanding how the labor market functions, statistical snapshots are among the least relevant tools in the labor market information system.

The alternative traditional strategy, used to obtain State and local information, is the census. However, census statistical snapshots are costly, quickly outdated, and tend to be available only at great intervals. The 1997 quinquennial Economic Census results for the Construction industry, for example, were not published until March of 2000. The FY 2000 budget request for the collection of the Decennial Census was $4.5 billion. And this cost does not include the planning and rehearsal costs incurred after the last Decennial Census in 1990 from 1992 until the eve of Census Day 2000. The standard strategy of gathering information through sample survey and census to meet State and local needs is neither timely nor cost effective, and rarely meets the test of relevance. The alternative strategy, using administrative records alone or integrated with current sample surveys, is the only cost effective approach to meeting State and local needs to understand market dynamics and the role of the workforce development system.

Finally, the employment statistics section of WIA includes both the necessary confidentiality restrictions and the necessary authorizing language requiring the establishment of an administrative records program. Section 15 of the Wagner-Peyser Act, as amended, states:

> (a)(1) The Secretary...shall oversee the development...and continuous improvement of a nationwide employment statistics system...that includes —
>
> (A) statistical data from...survey...programs and data from administrative reporting systems...including statistics on ... (iv) employment and earnings information maintained in a longitudinal manner to be used for research and program evaluation ...
>
> (B) information on State and local...labor market dynamics, which — (i) shall be current and comprehensive ...
>
> (F) analysis of data...described in subparagraphs (A) and (B) for uses such as — ... (iv) researching labor market dynamics...
>
> (e) State Responsibilities — ...
>
> (2) Duties. — In order to receive Federal financial assistance under this section, the State agency shall — ... (I) utilize the quarterly records described in section 136(f)(2) of the Workforce Investment Act of 1998 to assist the State and other States in measuring State progress on State performance measures.

WIA describes the statistical use of administrative data for purposes of research, program evaluation, and the analysis of labor dynamics, moreover, it requires State employment statistics offices to acquire wage records for performance measurement purposes as a condition of receiving federal funds.

Administrative data, wage records tied to patterns of employer human resource utilization and linked to investments in training, and the balance of the workforce development system are the most appropriate statistical tools to address workforce issues. It seems apparent that the absence of an administrative data program focusing on this arena represents the single most important gap in the current labor market information system.

B. Proposed Design.

1. Overarching Policy and Initial Steps

As we shall see in the next chapter, neither the Department of Labor nor the Bureau of Labor Statistics have the need, capacity, or interest to develop an administrative statistical program that is current and locally relevant. In addition, the proposed system requires information above and beyond wage records and employer information from the ES-202 program. Organizing information relating to the workforce development system depends upon State Research Offices obtaining confidential data from other State and local education, training, labor exchange entities, additional agencies with pertinent information, and other State Research offices through the use of confidential data sharing agreements. These agreements are central to the proposed system and normally include prohibition against disclosure of individually identifiable information to third parties. Therefore, the proposed system can only take on the character of a national program through State reporting of data in aggregate statistical form.

State Research Offices, if they have not already done so, can begin archiving wage records and the EQUI, mapping the workforce development system in their State and sub-State areas, and establishing regional work groups among Research offices. (See minutes from Region 7 and Region 8 Wage Records and Data Sharing Regional Meeting, August 2001, at **http://lmi.state.wy.us/wage_records_meeting.htm.)** These work groups can begin cataloguing strategies to improve the quality of wage records[2] and other data sets used to characterize the participants in the workforce development system, and can study ways the States have used to describe the structure of the labor market and its underlying dynamics. These efforts should have as their goals the development and refinement of market concepts in a stock and flow environment, and the replication of analytical techniques across State boundaries.

As described in Chapter II, several States have developed analytical techniques to answer questions for educators, WIBs, and program managers. These LMI solutions should be profiled and consideration given to documenting the underlying analysis and theoretical framework.

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[2] As we shall see in the chapter that follows, The Advisory Council on Unemployment Insurance found the quality of administrative data available through the UI program to represent a barrier to completing their analysis of the program and in making policy recommendations. These observations suggest that quality improvements need to be considered and made to UI administrative data before they are used for statistical purposes by the State and Federal UI agencies in evaluating and administering the UI program.

Priority should be given to the development of standardized software that each State can use to answer a limited set of specific, frequently asked questions (e.g. those associated with turnover and retention).

A key to the development of overall knowledge about how the market functions and how the workforce development system relates to it is our ability to replicate analysis and findings in a variety of settings. Therefore, developing comparable analysis across States is essential to the advancement of each State's understanding of the market. Several issues can and should be explored among regional work groups including standardizing ways of measuring the inter-State migration of labor, labor turnover, commuting patterns, patterns in the distribution of earnings among workers, worker dislocation and relocation behavior, identifying the scope of UI monetary eligibility, identifying patterns in the way employers use labor and building typologies to classify these patterns, identifying ways to measure the utilization of labor, and identifying variables which predict market and program outcomes. One of the few measures assuring that any State has fully described the relationship between labor supply and demand is the capacity of other States to replicate analysis and findings.

2. The Workforce Information Council.

The Workforce Information Council (WIC) should charter and delegate authority to a Policy Council responsibility for the development of an administrative data labor market information program.

In developing the Charter and delegating responsibility to the Policy Council, the WIC should give priority to the following issues:

a. The importance of determining whether or not Federal Rules should be issued regarding the confidentiality provisions of Section 309.

b. Determining level of responsibility, in the WIC and the Policy Council, and authority for proposing, reviewing, and designing wage records enhancements for labor market information purposes.

c. Identifying a mechanism for coordinating with entities representing State Unemployment Insurance concerns.

d. Identifying a mechanism for coordinating with the Department of Education and other entities responsible for administrative records within the workforce development system.

In providing guidance in the Charter and otherwise, the WIC should identify a work plan and proposed funding levels which address the following issues:

a. Assessing the status of State Research Office's capacity to archive and use administrative databases. Identify a funding mechanism to ensure that all State Research offices have access to the technology required to store and manage administrative data.

b. The development, codification, cataloguing, and sharing techniques and software from States currently working with wage records and other administrative data. This agenda item should include consideration of the development of a library of administrative records analysis documents, the development of a journal to promote education regarding research design into labor dynamics, and the development of training required to facilitate WIB and WIA program managers in the effective use of labor dynamics analysis.

c. Identifying current concerns and proposed solutions regarding the integrity of wage records in concert with State Research and UI agencies and the organizations which represent them.

d. Providing financial support for regional workgroup activity and providing financial incentives for the establishment of additional workgroups.

e. Develop a mechanism to fund State Research work with WIA providers to assist educational institutions and private sector training entities in the interpretation of outcome information.

f. Develop a partnership mechanism with individuals and entities in academia interested in the field of labor dynamics.

At this time, most State Employment Statistics Offices have access to pertinent confidential data sets to carry out a wage records based labor dynamics and evaluation program. However, the development of skills in the use of administrative data for labor market analysis and program evaluation has been uneven. Some States have not developed further in some cases because of prohibitive computer costs. In some cases State Executive branch constraints on staffing are in place and there is no national offsetting program raising the status of the importance of program evaluation. Frameworks which may be considered as alternatives to State Employment Statistics Offices for the development of a comprehensive wage records program, such as academic venues or private sector consulting firms, simply do not have consistent access to wage records, a vested interest in editing them, inter-State agreements related to data sharing, and companion records from other systems to produce and sustain a comprehensive and consistent evaluation program.

Our initial analysis of the work items involved, and the current capacity of SESA Research Offices to engage in this work, indicates an initial funding level of $20.3 million, 95 percent of which should be allocated to States by formula. A reserve of 5 percent is to be made available to the Workforce Information Council. The list of activities is not considered exhaustive while the funding amount only begins to address the gap between where we are today and the enormous potential represented by wage records and other administrative databases. The examples of State Research Office work provided in Chapter II allude to the potential uses of administrative data. State Research Offices recognize that we have only begun to realize the potential applications of administrative data especially when it is linked to survey data. Our proposed direction represents

an attempt to make the realized potential in some States the standard in all States. This potential has been recognized by many people during the last dozen years. Given that we are not the first to identify the enormous value and potential of administrative data, we are forced to ask why so little has been accomplished to bring about an administrative database program that is relevant at the State and local level. Identifying the causes of failure will allow us to evaluate the strength of the current proposal.

IV. Historic Context.

I simply do not see any organizational barriers to the LMI shops doing follow-up using wage records given the proper momentum and a little bit of creativity. — Ray Fongemie, correspondence to Tom Plewes and James Vollman, August 12, 1994.

Given developments in computing technology, a State-based wage records program could have been available across the nation by the middle of the last decade. Not only was an administrative records program possible, it also met the requirements of an increasing need for accountability systems. Congress enacted requirements for accountability in the Government Performance and Results Act of 1993 (GPRA) and WIA in 1998. The decade also saw an expanding use of wage records which went beyond describing outcomes to the production of true evaluations, and examples of analysis which have been described as approaching the "Holy Grail" of labor economics. The expansion of these uses in decentralized, non-Department of Labor environments not only demonstrated the conceptual power associated with administrative databases, it also demonstrated their uncontrolled potential. In addition to destabilizing Federal control over program outcome knowledge, the chief barrier to the development of a wage records based system capable of describing the labor market's dynamics, has historically been the principal Federal agency responsible for labor economics statistical programs. Considering DOL opposition from its program and principal statistical office, the emergence of a systematic wage records program at the State level during the 1990s stood little chance.

At the beginning of the new century, circumstances are changing in ways that make a wage records based program more likely. First, meeting State and local needs for labor market information through traditional survey techniques is too costly. Second, WIA requires a wage records based performance measurement system. This means that local outcomes for program participants can only be effectively understood in the context of information about the performance of the market in general based on wage records measurement systems. Third, knowledge of the potential uses of wage records is becoming more broadly known among program managers, State LMI offices, academics, policy makers, and others. And finally, computing efficiency continues to expand.

At the opening of this decade we are left with unanswered questions about why, with so many obvious benefits, we lack a wage records based labor market information program with national coverage. The history of the development of wage records use may help us understand the barriers to progress toward this goal.

Almost ten years ago, an amendment to the Job Training Partnership Act directed the Bureau of Labor Statistics (BLS) to develop a proposal for a National wage records database for research and evaluation purposes. The Bureau's response was to treat the proposed database as "... intended to serve eligibility, regulatory, or enforcement purposes (that) would be in direct conflict..." with its statistical mission. In order to avoid this potential threat to its mission, BLS proposed developing a database whose contents were two years old and that would be made available only to "researchers" in controlled environments. BLS estimated that it would take four years to develop the database and that some State confidentiality statutes would have to be

altered to permit the proposed design to function. Moreover, BLS argued that Federal "...legislation is needed to provide BLS with specific statutory language requiring the agency to protect the confidentiality of data on both individuals (wage records) and firms (the EQUI)."[3] The national database structure could have provided the necessary information about the dynamic market context within which employment, training, and educational activities take place. While the proposal may have failed for other reasons, the database would have had no relevance for current State and local informational purposes even if States were willing to modify their confidentiality statutes to allow sharing data with BLS for purposes of third party disclosure. Further, BLS did not identify a strategy to cope with the privacy concerns associated with the creation of another national database on citizens. In a sense, the proposal can be seen as designed obsolescence. This may not have been unexpected since BLS did not seek the amendment to JTPA for a national database but instead opposed it.

The second major obstacle to the development of a program based on administrative data that is national in scope is that the program specific initiatives of non-statistical agencies (without context data) using wage records yield little, if any, information useful for program management or accountability purposes. Program specific initiatives cannot be justified as cost effective. Not only is the efficacy of program outcome measurement difficult to justify in terms of returns on their investment, there are few other potential benefits to the marketing of such systems.

Non-statistical agencies have difficulty finding a basis for the development of program outcome measures because they are neither effective management nor accountability tools. However, program outcome data can prove useful in responding to the normative expectation for rational management and making at least some attempt to demonstrate subscription to the value of accountability. Thus, a key barrier to the development of true evaluation strategies is the wide-spread cultural acceptance of substitutes for it.

A. The Fallacy of Indivisible Knowledge.

The history of the wage records approach to market analysis and experimental design for program evaluation purposes suggests several reasons for the current absence of a comprehensive wage records program. Underlying the specific roles of the players and the participants in the events of the last decade is the fallacy of indivisible knowledge. This fallacy is a constant cultural background assumption which serves as a barrier to comprehensive outcome measurement and evaluation. The fallacy holds that no special knowledge is required to conduct program evaluation except for the special knowledge gained from, and reserved to, those with direct program operation experience or management responsibility. Without general acceptance of this fallacy, it is impossible to justify the assignment to, or assumption by, non-statistical agencies of the evaluation function.

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[3] BLS's position, of course, raises the questions of whether or not BLS can protect the confidentiality of State ES-202 data, and whether or not Congress should be funding BLS to obtain confidential State data.

The fallacy assumes that non-statistical agencies possess a knowledge of research design and statistical functions sufficient to produce meaningful reporting structures and evolve them into ever more transparent and useful management tools (see, for example, Levesque and Alt 1994).[4] Limited methodological and statistical expertise among non-statistical State and Federal agencies leads to the development of measurement systems whose costs outweighs their value but whose appearance creates the facade of responsible management. Even though the normative goal of improved program management may be publicly endorsed by an agency, the lack of statistical expertise means that performance measurement is cast in forms and language intended to reinforce anecdote and "common sense" notions about the manner in which the world and the program works. Evaluation designs are inevitably non-experimental and thus open to interpretation, but only by those responsible for program management who have demonstrated a good faith effort to be accountable.

The corollary to the fallacy is disregard for the concept of controlling competing explanations for outcomes through an investment in control or comparison groups and related data regarding market circumstances. The application of experimental strategies relies on knowledge about the entire population from which program clients themselves are drawn (or a significant segment of it) as well as contextual information which non-statistical agencies may not find intrinsically useful, cost worthy, or interpretable. Exercising the fallacy is marked by a disregard for the need to systematically collect information outside the boundaries of the program proper. Consequently, the fallacy of indivisibility leads to the appearance of accountability through enactment of various myths in the ritual of "reporting," rather than to substantive analysis of the problems associated with managing from a position of limited but objective knowledge. So long as the appearance of accountability is sufficient for those responsible for oversight, ersatz knowledge will be substituted for the genuine article.

Despite the investment in WIA required performance measures using wage records and proposals to develop them in other areas, program managers and policy makers are still left with enormous gaps in knowledge, tabular data nearly impossible to interpret, and an uncoordinated, underdeveloped, and fragmented reporting system. There is broad based normative support for the rational management of employment, training and educational programs, and statutory requirements to produce such systems. However, the question still remains as to why we seem unable to develop measurement systems which move beyond non-experimental and uninterpretable design.

[4] Subscription to the fallacy is necessary to understand why wage survey requirements and other statistical activities were assigned to the Department of Labor in the Immigration Act of 1990 - and its amendments, the Services Contract Act, Davis Bacon Act, JTPA, WIA, several State programs, and in other legislation.

B. August 1998 to Present.

Since WIA was enacted, non-statistical program agencies have exercised responsibility for the development of outcome measures, there has been little visible interagency coordination at the Federal level, and agencies have focused on narrow program specific measurement rather than on strategies aimed at developing an understanding of the context variables which are likely to explain more about outcomes than the programs themselves. The promise of a comprehensive and coherent set of outcome measures across the One Stop partnership seems unlikely to be fulfilled in the near future.

WIA became law in August of 1998. Since that time, Federal and State agencies have struggled to comply with requirements for wage records based reporting using, in many respects, strategies developed prior to WIA. At the same time, other programs such as TANF have financed wage records use in pilot studies, and at least one additional significant proposal for the use of wage records to measure program outcomes has been advanced.

On the eve of the enactment of WIA, the Department of Labor issued an interpretation of Federal law regarding the release of confidential wage records by State agencies administering the Unemployment Insurance program. Unemployment Insurance Program Letter 34-97 encouraged State agencies to disclose confidential records to public officials "in the administration or enforcement of a law by the public official. The Department encourages such disclosure..." (UIPL, 1997). Over the decade leading up to the enactment of WIA, the presence of wage records in each State, their increased availability, and the scope of their application made the administrative approach to describing how the labor market worked and how workforce development components interacted with it both a more common approach and one whose value was becoming increasingly apparent.

Major program changes during the decade, such as implementation of the Temporary Assistance for Needy Families, were rarely studied using conventional analytical approaches when administrative records were available. Lane and Stevens (1997), for example, analyzed the interactions between welfare clients and employers in an attempt to define the characteristics of employer, job seeker, and the interaction between them that could lead to more effective work first strategies. It became increasingly apparent to more people that archived, unobtrusive, administrative data could be used to quickly bring pertinent analysis to significant policy issues.

Late in 2000, the American Association of Community Colleges (AACC) issued a White Paper calling for a wage records based national program which would demonstrate the value of a Community College education (Mundhenk, 2001). AACC's White Paper proposal highlights several problems related to current and historic developments in performance reporting. First, the current proposal for performance reporting is non-experimental. This means that other influences, such as those stemming from the economy or the human capital students bring to the educational environment, which also explain earnings, are not accounted for. The positive outcomes of a College education may to some (or a considerable) degree represent the effects of a growing economy. It may be that the call for performance reporting will vanish in the midst of the next

recession.[5] On the other hand, if a State-based administrative records program can be implemented, an AACC-SESA Research Office partnership could be developed to systematically address problems of outcome design that had not before been possible.

Often, proposals for outcomes reporting have represented responses to perceived (but potentially transitory) advantages that are likely to accrue to a program from such reports. On the other hand, those with vested interests in an existing program may perceive a need to defend a program's value. These purposes are outside the scope of evaluation in the sense that the question of evaluation is to identify how a program functions rather than ascertain its value. Given this distinction, sponsorship for evaluation is more difficult to justify by those responsible for a program activity.

If a wage records reporting system for the Colleges were produced as described by the AACC paper, to some extent it would duplicate the reporting requirements for WIA and Carl Perkins supported College students. Even if the outcome reports AACC described in its Paper were available, those operating related program activity could legitimately vie for any positive credit associated with College education. The second major problem, associated with program specific non-experimental outcomes based measurement proposals is that of allocating the appropriate importance to each source of several public investments.

The third problem associated with program specific proposals for outcomes measures is that the proposal's authors are only interested in investing in an outcomes based system to the extent that the system applies to their specific program. Controlling for competing explanations for outcomes, however, requires an evaluation based system which can develop comparison and/or control groups with comparable characteristics and histories. In the case of Community College students, the appropriate comparison would be to individuals with comparable characteristics but who did not receive a Community College education. Outcomes based proposals originating with non-statistical agencies disregard the analytical requirements to verify cause and effect relationships and relate those relationships to program business processes. Consequently, there is no inter-State or Federal structure in place that could uniformly acquire Community College student data (or any other program data), match these data with wage records, and produce the comparable and standardized reports AACC describes in its Paper.

The Workforce Investment Act of 1998 represents the first statutory attempt to implement wage records based program outcome measures on a national basis. Although progress is uneven, State WIA program operators appear to be nearing this objective. There are several barriers yet to overcome. Most notable among the long-term barriers is the issue of uncertainty over the quality and coverage integrity of wage records from State to State. A second long-term barrier is that the States are not required to archive source wage records data, making program outcome measures virtually unauditable and confounding the management of incentives and sanctions. The third barrier is the absence of comparable rigor across programs which would lead to outcome

[5]These issues were discussed during a meeting with Association Research staff and NASWA LMI subcommittee members who prepared this report on June 27, 2001. The meeting was facilitated by Dr. David Stevens.

reporting across the One Stop system, adapted where necessary to program unique goals and population segments, which was similar in appearance to the Title I initiative. Other programs that are part of the One Stop delivery system are further behind schedule and there is no apparent coordination among Federal agencies to produce a complementary reporting mechanism which would represent a coherent overview of the nation's Workforce Development System.

Language within WIA identifies specific equations States must use when developing Title I performance measures. This language includes the mechanics of calculating pre-program and post-program earnings change and identifies the specific time frames involved. The Act also requires that all program initiatives it brings under the One Stop roof use common performance outcome measures. Section 112(b)(8)(B) of WIA requires each State plan developed pursuant to the Act to describe the "...common data collection and reporting processes used for the programs and activities..." delivered in the One Stop environment required by the Act. Vocational and technical education programs funded under the Carl Perkins Act represent one of the key mandatory One Stop partner programs. The Perkins Act section 122(c)(21) cross references WIA's section 112(b) in describing the requirement for common collection and reporting processes. However, the Office of Vocational Education's guidance to States (OVE, 2001) indicates that the use of wage records for performance measures, as well as the manner in which they are used when employed, is an option State Education grantees may exercise at their discretion. Given the fragmented approach to performance reporting among Federal entities, it appears unlikely that information pertinent to the system as a whole will be available for consideration during WIA re-authorization hearings.

Until the enactment of the Government Performance and Results Act in 1993, there was little incentive for Federal program agencies to demonstrate program effectiveness to Congress. And there is still no incentive to incur the cost of experimental or quasi-experimental design so long as reports to Congress based on non-experimental design serve the purpose. In effect, even were Federal program agencies to succeed in reporting outcome measures in a consistent and complementary manner under WIA, there would still be no mechanism to distinguish between the effects of program activity from the effects of the local and national economy, the level of human capital program participants bring to the program, or whether or not education or particular types of educational training were factors in program outcome.

C. The Job Training Partnership Act; the National Occupational Coordinating Council and the Bureau of Labor Statistics.

In 1988, the Deficit Reduction Act eliminated the wage request option as a tool available for State Employment Security Agency (SESA) administration of the Unemployment Insurance Program (Baj et al 1991:i). The movement of wage records to a more standardized set of practices in each State led to greater interest in using wage records for employment and training performance measurement programs and for other research.

Performance measurement is distinguished from evaluation in that performance measurement observes a change over time in the value of one or more variables without the capacity to identify

the reasons for the change. Evaluation, on the other hand, incorporates performance measurement as well as strategies to account for the reasons for change in the value of a variable (see, for example, Stevens 1994a). Strategies used to account for explanations which compete as answers for program outcomes include random assignment to control and experimental groups, the use of non-randomly assigned comparison groups, longitudinal analysis, and statistical modeling.

Performance measurement only requires information on program activity and clients. Evaluation reporting, on the other hand, requires additional data. In the 1990s, two Federal initiatives incorporated the statistical use of wage records. In the first instance, Congress directed that the National Occupational Information Coordinating Committee (NOICC) institute performance measurement programs on a demonstration basis for vocational training programs. The second initiative was implemented through a Job Training Partnership Act requirement of the Bureau of Labor Statistics (BLS) to develop a national wage record database. This second initiative would have created the circumstances under which true evaluation studies could represent the standard approach to measuring returns on investment. Despite these legislatively based initiatives, neither program specific Carl Perkins efforts nor the national endeavor identified in the 1992 amendments to JTPA brought about the desired goals of either a wage records based performance measurement system, or evaluation analysis as a national standard.

Why did these Federal initiatives fail? In contrast to WIA, where DOL compels the cooperation of State agencies, under the NOICC demonstration approach, State agency participation was voluntary. Moreover, like NOICC, the State agencies in question were, non-statistical entities. In the case of BLS, the proposal may have been in competition with the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 requirement for the use of wage records. In addition, public comments by BLS representatives, at the time, indicated that the use of wage records for the purposes identified in the JTPA amendment was not within the scope of its statistical mission.

In 1990, Congress directed the National Occupational Information Coordinating Council (NOICC) to conduct a demonstration project using wage records. "Section 422 (c)(1)(A) of the Carl D. Perkins Vocational and Applied Technology Act of 1990 ... required that NOICC establish a demonstration program to monitor education outcomes for vocational education using wage and other records (NOICC 1994)." Shortly thereafter section 462(g) of the1992 amendments to the Job Training Partnership Act directed that

> "... the Commissioner of Labor Statistics, in cooperation with the States, shall determine appropriate procedures for establishing a nationwide database containing information on the quarterly earnings, establishment and industry affiliation and geographic location of employment, for all individuals for whom such information is collected by the States ... The Commissioner ... shall determine appropriate procedures for maintaining such information ... for making such information available for policy research or program evaluation ... The Secretary shall prepare and submit to the Congress, not later than 12 months after the date of enactment of the ... Amendments of 1992, a report that shall describe the costs and

> benefits ... of a nationwide database ... and a schedule that would allow for the establishment of such a database."

NOICC's initiative under the Carl Perkins Act focused on performance outcome measures without control or comparison groups. Thus, from the beginning, the value of the initiative was questionable. As a non-statistical agency, NOICC's attempt to implement Section 422(c) of Carl Perkins was hampered by a lack of research design and analysis staff. In addition, its initial attempts to fulfill its responsibility engaged non-statistical State agencies in the development of performance measures. In a NOICC-sponsored National Governors Association survey of State Vocational Education agencies, the assumption is made that if wage records based performance measurement occurs, it occurs because the Vocational Office receives wage records from the SESA UI section. The study reported that "... eighteen States have actually conducted a one-time study or pilot test or implemented a system to use wage records data ... Only three States indicated that data sharing was taking place at both (the secondary and postsecondary) levels..." (Amico 1993:11). The results of the survey of States reveal a sparse and unevenly distributed "system" of performance measurement.

The final NOICC effort to meet its Congressional charge was to contract for a "Guide," or lay instructions for vocational education agencies and "other institutions." This initiative was predicated on the assumption that almost anyone with a computer and access to the appropriate data can fulfill the goal of developing program based performance measurement (Levesque and Alt 1994). The Guide does not discuss the value of comparability of the measures between vocational programs, school systems, or States. Given this tradition of open ended performance measurement for vocational programs, it seems likely that attaining a standardized approach to performance measurement for the Carl Perkins program in each State will remain an elusive goal.

The legacy of NOICC and the National Commission for Employment Policy sponsored performance outcome measures is unclear, especially since remnant State agencies that may be carrying out these activities do not sponsor a national profile. NOICC's approach was to market performance measurement to non-statistical agencies on a voluntary basis. It appears that the outcome may have been different had it attempted to work through the infrastructure represented by the SESA Research community and conducted its strategy in a more broad based manner. If performance measurement in the form NOICC advanced had been a cost effective management tool, the seeds of the demonstration project would have taken deeper root.

The 1992 amendments to JTPA directed that a federal statistical agency, the BLS, develop a proposed approach for the design of a national wage records database that would also include employer data from State Unemployment Insurance files. The endeavor was described with enthusiastic support in 1996 by the Advisory Council on Unemployment Insurance:

> Throughout its long history, the UI program has produced a vast amount of information....
>
> Individual states use UI information to operate the program, to evaluate efficiencies, and to conduct research on UI issues. The federal UI Service uses the data to monitor the work of the states, to carry out UI research, to administer the

> system, and to ensure that federal UI program standards have been met. In addition, the Bureau of Labor Statistics (BLS) ... relies on the state employment and earnings reports for survey benchmarks, and it uses the UI tax records to form the universe of business establishments for sample surveys.
>
> In spite of these varied uses, little systematic attention has been given to the comparability, accuracy, and completeness of this rich data source. Indeed, the Council frequently found it impossible to obtain comparable state data for analyzing many of the questions it addressed. Further, only occasional attention has been given to the format, editing standards, uniformity of data definition, completeness, and ease of computerized access to the base of information that flows from the UI system.
>
> These conditions are not surprising. Until recently, the informational value of administrative data was not universally recognized. Few have understood the need for the precision and quality control that distinguish a statistical database for research purposes from a program database that ensures the delivery of services. Today, data are increasingly used to monitor the economy and to evaluate public policy, and the value of administrative program records as an efficient and cost-effective source of information with minimal need for additional reporting burden cannot be overlooked. To allow fuller utilization of this resource, the quality and comparability of these administrative data should be improved.
>
> Congress has already taken some steps to meet this need. In 1992, it required the BLS to determine procedures for creating a national longitudinal wage record database with information on earnings, establishment and industry classification, and geographic location of employment for all workers covered by the UI system. This improved database will be extremely valuable for research, program evaluation, and statistical purposes.
>
> Source: "Defining Federal and State Roles in Unemployment Insurance," Advisory Council on Unemployment Compensation, 1996, p.15.

The BLS proposal for a National Wage Record Database (NWRD) envisioned a centralized wage records and ES-202 database that would be made available to "researchers" in the BLS national office and initially in one other urban center. A second wage records database would remain at the State level for use in JTPA outcomes measurement. The proposal did not envision a linkage between State and Federal agencies for purposes of evaluation or controlled designs, let alone a role for SESA Research Offices.

The BLS designed NWRD would only contain data that was two or more years old in order to discourage potential attempts to use the data for administrative purposes. It was expected to take four years to develop the database. The "National Wage Record Database Design Project Report" was submitted by the Department of Labor to OMB in August of 1995 with a request to send the report to Congress as required by JTPA. Thus, if the database came on line in 1999, as proposed, the most recent data contained in the files would have been from 1997. This strategy

was endorsed to ensure that enforcement agencies did not find the database an attractive source of information for program administration, fraud detection, and other non-statistical uses. By design then, the NWRD project would have been a source of information that was neither timely nor available to those most likely to use the information for State and local analysis.

However, the "Project Report" was never authorized for US DOL transmittal to Congress by OMB. According to a BLS informant, the NWRD would have been in conflict with proposals for welfare reform which included a national "new hires" database complemented by State wage records files to be used for program enforcement purposes. The administration did not want to appear to be supporting two national wage records databases and the statistical agenda for wage records was abandoned.

A comprehensive database would have allowed for appropriate comparison groups to be selected for program evaluation purposes. However, BLS transformed the directive in 462(g) to develop a proposal for a NWRD to make "such information available for policy research or program evaluation" into a proposal which would take four years to make data available to the "research community." The research community is, presumably, located exclusively in academia and among private consulting firms who would have access to data two years removed from current events. Given that BLS opposed the amendment to JTPA, it appears that BLS may have developed a proposed design of so little value and relevance that had the report been transmitted to Congress it would have stood little likelihood of being funded.

The success of the proposal developed under the JTPA amendment depended upon a strategy focused on producing current local analysis that would at the same time permit inter-State comparison and aggregation to regional and national statistical profiles of the workforce development system. With the exception of a minor initiative relating to follow-up analysis of UI claimants found in Mass Layoff Statistics files and the occasional technical memorandum, the Bureau has provided no public indication of its support for improving the quality of UI administrative data in response to the UI Commission's observations. It seems apparent that a national wage records database developed in the manner proposed by BLS over the time frame involved, and for purposes of restricted access would not have met the intent of the amendment to JTPA, produced data useful to future UI Commissions, nor served purposes that would elicit State support for Congressional funding.

V. Methodological Note: From Performance Measures to Evaluation.

The contributions of research initiatives using wage records in the academic setting have been significant. However, a review of the literature drawn from academic and consulting sources is beyond the scope of this paper. Although rich in imaginative approaches, from the standpoint of the proposal in Chapter III, the chief contribution of these initiatives has been methodological.

Chapter III proposed developing a State labor dynamics program as a necessary pre-condition to the evolution of an evaluation program. Evaluation conducted in the context of State and local economic-demographic and socio-economic analysis often requires more specialized research staff than has traditionally been available in State Research Offices. Bringing more specialized and advanced research staff to State LMI operations will require the support of this infrastructure with disciplines outside the traditional mainstream staffing within the Department of Labor. For this and other reasons, it is proposed that the required Policy Council include a substantial role for academia. This role is best described as coordinative and falls into four functional areas: (1) supporting the methodological integrity of evaluation, (2) facilitating the organization of State applied research to obtain the cumulative value added knowledge of basic research, (3) developing confidentiality protocols, and (4) providing part of the leadership to coordinate the Policy Council's relationship with the Secretary's Research plan as defined in Section 171, and Evaluations outlined in Section 172 of WIA . These four functional areas represent gaps which can best be filled by individuals who have specialized advanced knowledge and links to institutions which have much to offer and much to gain through liaison with the Policy Council and the State-Federal relationship.

A. The Academic World.

There are two key problems in labor economics which prevent effective State and local management of workforce development programs. First, given the substantial resources devoted to the collection and analysis of information about the labor market, it is remarkable how little we actually know about it. Second, the nation lacks a consistent standardized means of either describing or evaluating how workforce development systems interact with the labor market.

The purpose of the proposed administrative data analysis program is to understand the structure and dynamics of the labor market. We propose identifying the determinants (industrial structure, demographics, firm characteristics, economic conditions, etc.) of market outcomes, the strategies workers and employers use to obtain their goals in the labor market, and describe how the determinants and strategies produce outcomes under a variety of circumstances. Achieving this purpose is a prerequisite to developing ways to accurately describe how non-market institutions (the workforce development system) produce outcomes for employers and workers. An objective of the proposed analysis program is to provide the States, and by extension the Secretary of Labor, with the capacity to conduct true evaluation analysis of program activity that is locally relevant and national in scope.

Understanding how the labor market works is a prerequisite to understanding the role of its subsets or segments and how workforce development institutions relate to market segments. Absent a broad based knowledge of how the market as a whole works, information about a selected (nonrandom and therefore biased) segment of market participants makes interpretation of that information extremely problematic. Each employment and training program represents a nonrandom subset of market activity. Performance measures of these subsets, taken by themselves or set in anecdotal context, are virtually uninterpretable.

Our strategy is to assemble and join economic, demographic, and programmatic administrative databases common to all States for purposes of statistical analysis. Extracts of administrative data, including wage records, would reside exclusively in and under the sole control of State Employment Statistics Offices pursuant to the confidentiality and statistical provisions of WIA's section 309 as well as associated State and Federal confidentiality statutes pertinent to each data set. Several States have and are developing these systems which may serve as the basis for a comparable system in each Employment Statistics Office. The proposed common element of each State's administrative analysis system is the capacity to create standardized and comparable labor dynamics and evaluation analysis.

The proposed system has as a first priority the development of an understanding of how the labor market works. This knowledge is essential to accounting for factors which compete with training and other services as explanations for outcomes. In recommending a wage records based post-program tracking of JTPA participants in 1991, the National Commission for Employment policy described an analytical strategy to account for program effects:

> One of the major advantages of UI wage-record data is its flexibility. (This) Chapter... illustrates this flexibility by examining the pre- and post-program employment and earnings patterns of PY86 Title IIA adult terminees...
>
> Prior to presenting these findings, it is necessary to offer several words of caution... Findings from ... simple descriptive analyses ... are often taken out of context ... There is a ... temptation to attribute gross changes in employment rates and average earnings to (JTPA) participation. However ... (m)any other factors also contribute to these differences. For example, changes in local labor market conditions are likely to have a significant impact on observed differences in pre- and post-program employment rates and average earnings. Unless these factors are ... controlled, their effects will mistakenly be attributed to program participation.
>
> The fact that ... analyses (of pre- and post program outcomes) cannot be used to draw inferences concerning the net impact of the JTPA program cannot be overemphasized. In order to estimate net impact, it is necessary to identify the incremental gains in employment and earnings of JTPA participants over and above what would have happened if they had not participated in the program ... (T)he net impact of the program can only be

> assessed after the effects of other factors have been removed from the ... differences observed between pre- and post-program periods.
>
> The only guaranteed way to remove nonprogram effects is to use a research design that directly relates the experiences of program participants to a control group of nonparticipants ... studies employing ... experimental designs randomly select program participants from the pool of people eligible for the program and place those not selected in a control group. Another approach is to use a quasi-experimental design. These studies typically use administrative data to assemble a comparison group (in lieu of a pure control group) and rely on statistical methods to adjust for the inherent differences between the comparison group and program participants.
>
> Regardless of which net impact design is employed, the objective is to use the experiences of non-participants to approximate what the post-program labor market experiences of participants would have been if they had not participated in the program (Baj et al 1991: 49-50).

From an analytical standpoint the real question is not whether or not a program is effective, but rather, what would have happened had the program or service not been available to employers and/or workers. Since random assignment of participants to training programs and control groups to account for net effects is unlikely, the alternative of quasi-experimental design is chosen as the mechanism to develop for purposes of addressing the issue of how the workforce development system interacts with the market.

The common unit of analysis for segments of the market receiving services (e.g. WIA Title I, TANF, Vocational Rehabilitation, college and vocational training, employer job development, employer needs assessment and/or economic development services, etc.) are individuals interacting with employers. This interaction is measured, or operationalized, with wage records. Wage records measure the exchange of wages for labor services. Therefore, in order to "assemble comparison group(s)" of workers and employers for quasi-experimental designs across the entire array of market segments, we propose developing a system of labor market information based on a system of linked administrative databases which broadly characterize the market's components, and which has wage records and the ES-202 employer records at its core.

In order to account for the influence of the workforce development system, administrative data from that system will also need to be incorporated into the analysis program. Providing such entities as workforce development boards and affected parties (e.g. public and private providers of workforce services) with information on the efficacy of program activity, means that administrative records (e.g. GPA, Classification of Instructional Program, UI claimant characteristics) will need to be made available to Employment Statistics Offices for record matching purposes.

Past proposals (Baj et al 1991) and current systems (WIA) for pre- and post-"performance measurement" have focused on developing descriptions peculiar to a particular program, service, or population. These systems do not permit the identification of net program impact because they lack the requisite capacity to assemble appropriate comparison groups and apply appropriate analytical techniques. Because the characteristics of workers and employers for any program cannot be known in advance, there can be no basis for limiting the scope of the administrative databases to a subset or sample of administrative data. The proposed administrative data analysis program has as its top priority organizing a comprehensive set of data around the census of work place transactions measured by wage records.

Historically, State Research Offices have focused their human resource strategies on obtaining economists and statisticians. Evaluation research and the analysis of market dynamics, human populations, and the institutions that bind them are not peculiar to any one discipline. However, these research strategies tend to be associated with methodological traditions found in experimental psychology, demographics, sociology, social psychology, and economics. Meeting the goals of the proposed system means that State Research Offices will need to establish human resource policies to obtain the analytical skills appropriate to an expanded emphasis on program evaluation and labor dynamics. At the same time, there is a need to complement the State infrastructure with inter-State coordination of the research program to ensure that common methodological standards are met and that the research agenda and processes of the States achieve cumulative and broadly applicable goals. These are roles most appropriately fulfilled by academic traditions which supersede the traditional disciplines found in the Department of Labor.

B. A Role for Academia.

The chief distinction between outcome measurement and evaluation is methodological. Unless these methodological concerns are systematically addressed in each State Research Office and among the States, there is little justification for an administrative database program. This principle makes involvement of academics with ties to outside institutions in the Policy Council crucial to the success of the proposal.

The output of State Research Offices is driven by the immediate needs of State, local, and Federal entities. These imperatives result in Research Offices addressing similar research questions in each State under a regime of quick turn-around environments and a focus on short-term goals. This focus results in the production of answers to the immediate problem without a strategy to transform this iterative process into an understanding of broader principles of labor market supply and demand issues. Working through the Policy Council, individuals from academia can facilitate ensuring that States have the understanding of appropriate methods to support their analysis and that the broader implications of short-term applied analysis is also made part of a broader body of knowledge. More commonly known as basic research, academics can assist in structuring the need for applied knowledge into a broader framework that can be used to evolve general research questions guiding each State's individual efforts.

Academics with ties to independent institutions can evaluate the importance of State research from a perspective more removed from the immediate needs and values of agencies conducting or sponsoring the resources used in the research. This cross check on products from State agencies can serve to ensure that the program funds are meeting minimum standards warranting the funds used to produce them.

The informational demands of the workforce development system tend to be short-term and focus on immediate needs. This environment stresses production output for reports that often use novel approaches to answering questions that can threaten the confidentiality of individuals and employers. Solutions to this dilemma are crucial to the success of State research programs using administrative data. At present, there is no solution to the problem other than painstaking review by professional staff prior to the release of reports. The States need assistance to develop fail safe means of efficiently reviewing the products of analysis for disclosure issues. This is an area in which the Policy Council needs to take immediate steps. Among those steps is recruitment of academics who can promptly engage the problem with the States.

The Secretary of Labor is required under Section 172 of WIA to "...provide for the continuing evaluation of programs..." These evaluations are supposed to "...utilize appropriate methodology and research designs, including the use of control groups chosen by scientific random assignment..." Federal and State efforts are supposed to be coordinated as described in Section 136(d). The reference to appropriate methodologies presupposes an applied academic[6] rather than lay interpretation of the term "evaluation." While the bulk of the tools, including staff, for evaluation research are available in State Labor Market Information offices, many Research offices lack staff specializing in this form of research. There is clearly a need to link current endeavors together and begin accumulating the results of State research for purposes of sharing and building a national inventory of results. It is unlikely that the Secretary can develop a research agenda which meets State and local needs for continuous program improvement independently from State entities with the capacity to conduct locally relevant research which meets minimum methodological standards. Academics serving on the Policy Council should be selected for their background in research methods and their experience in cumulating and organizing research results across the nation.

Additional considerations should be given to developing and sharing evaluation research results. First, Federal agencies should be prepared to issue funds to academics to reimburse State Employment Statistics Offices for the preparation of statistical analysis and the application of disclosure avoidance routines to administrative data. Toward this end, States should make full documentation of the structure of administrative databases available to the public and academic community. Second, the Departments of Labor and Education, and other Federal agencies, should establish programs to provide funds to enable employment statistics offices to employ academics to conduct research on topics consistent with Federal and State missions and the goals of academics. Third, States should have access to funds under Section 172, to conduct statistical

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[6] See, for example, *New Directions for Evaluation*, A Publication of the American Evaluation Association, Jossey-Bass, Publishers.

analysis and produce summary data in cooperative work relationships with academic partners in so far as the requested analysis is consistent with the mission of State Employment Statistics offices and the goals of Section 172. As more States develop increasingly rich longitudinal databases, and as State-academic relationships grow, more complex permutations will develop which meet the needs of Federal, State, and academic partners, while preserving the confidentiality of respondents. One of the most obvious targets of such research is longitudinal comparative analysis across programs participating in the One Stop system.

The benefits of academic involvement in administrative analysis is related to the need for a focus on basic cross-cutting research strategies and the development of overall system knowledge. The demands of the workforce development system, on the other hand, tend to be short-term, applied, and focused on meeting immediate needs. These State organizational imperatives tend to shift the research focus from overarching analysis of problems common to programs, customers, and the States as a whole. If we are to reap the benefits of the work done in each State, a strategy must be found to incorporate the broader based theoretical perspectives of individuals whose focus is upon the longer-term goals of understanding how labor markets work.

VI. Confidentiality.

> Many citizens believe increasingly and with some justification that their privacy is being eroded by organizations that develop and control the use of large data bases that contain detailed information about them. They see the linkage of data from different sources as a particular threat.
>
> *Private Lives and Public Policies, 1993.*

Past analysis of confidentiality issues relating to wage records have been conducted in anticipation of federally based national databases (Haltiwanger, et al 1998, Stevens 1994b), and have been discussed from the standpoint of making progress in opening (SESA) confidential record access to a larger pool of qualified (academic) analysts (Stevens 1998, Brady et al 1999). The current analysis is based on a proposed State based system of administrative records and inter-State data sharing developed within the context of federal and State confidentiality considerations.

State Employment Statistics offices propose funding for an administrative database program that would support the goals and objectives of WIA and State One Stop partners. State wage records and ES 202 files for the foundation of the proposed program. Section 309 describes these files as "employment and earnings information maintained in a longitudinal manner to be used for research and program evaluation." Employment and earnings data, even when linked to employer data, suffer several limitations when the research objective is simply the description of the available workforce or the evaluation of training programs.

There are two strategies available to account for training or other service program outcomes: random assignment of program participants to experimental and control groups, and accounting for the influence of competing explanations for outcomes other than the training itself through quasi-experimental and modeling techniques. Random assignment of program participants to experimental and control groups is unlikely. Model building and interpreting quasi-experimental design requires the acquisition of additional information about program participants, comparable populations, and the socio-economic context.

Some of the most common explanations for training outcomes, not available from wage records, are the demographic, educational, and social background of program participants and the economic context within which they are served. Analytical control over these variables can only be obtained where they are available for program participants and a sample of the population (or the population itself) which represents the effects of all conditions except the training or other services received. In order to account for factors which compete with training as the explanation for outcomes, employment statistics offices also propose funding for the collection of demographic and other data from administrative records and the combining of those data with wage records. Accounting for factors coinciding with training, that could also explain outcomes, requires the manipulation of data at the individual level prior to presenting the results in summary form.

The proposed program involves the merging of wage records data with demographics and geographic codes from State driver's license files, voting registration files, and other

administrative records. While each administrative database by itself creates confidentiality and disclosure issues, merged databases create a special set of circumstances that must be thoroughly and systematically addressed as part of this program. Moreover, as State Employment Statistics offices attempt to quickly respond to the need for current, detailed, and local information they face a greater risk of violating confidentiality.

Working with administrative databases which may be drawn from sections within parent organizations, community and technical colleges, service providers (e.g. TANF) outside the parent agency, and agencies with different missions altogether (e.g. Departments of Transportation), brings about escalating degrees of concern over privacy, confidentiality, and security that must be addressed as part of implementing an administrative database program in State Statistics offices. "We are not unaware (declared a recent report) of the threat to privacy implicit in the accumulation of vast amounts of personal information in computer data banks or other massive government files" (Brady et al 1999:6). Other than the administration of State confidentiality statutes and implementation of BLS confidentiality rules and informed consent statements, there is no clear assurance that State employment statistics offices understand or have uniform programs for the protection of administrative data either as individual or integrated data sets.

Two key themes re-occur throughout the literature and federal and State statutes governing the sharing of individually identifiable data: the purpose of the data sharing must be statistical in nature, and the data, once shared, may serve statistical purposes exclusively.

In 1997, the Office Of Management and Budget (OMB) issued an Order Providing for the Confidentiality of Statistical Information. The Order applies to all BLS (but not ETA) programs and State employees serving as "agents" of federally funded statistical programs. "...(I)f the State agency has agreed that certain State officers or employees will use statistical information as 'agents' of a (Federal) statistical agency or unit ... the designated officers or employees of the State agency would be accountable for the responsibilities imposed on such agents" (OMB 1997:35045). Despite OMB's Order, BLS guidance to State Employment Statistics contracting offices has not been issued.

The central feature of OMB's Order is the concept of functional separation. This concept specifies that data collected for statistical purposes (e.g. copies of data originally collected for administrative purposes) may not subsequently be used for administrative purposes. The Order indicates that this separation is achieved by establishing separate "units,"or statistical offices, whose primary function is statistical, and by establishing policies insuring that information collected exclusively for statistical purposes "shall not be disclosed or used in identifiable form forany other purpose unless otherwise compelled by law." This language parallels language in the Privacy Act and in section 309 of WIA[7].

[7] Even though BLS is the lead federal statistical agency (as defined by OMB's Order) for the administration of section 309, it has not taken any steps to implement the confidentiality requirements of this section.

Many State Employment Statistics offices are engaged in measuring the performance of employment and training programs through the analysis of program data matched with wage records. Matching and analysis is generally predicated on a memorandum of understanding in which a State or local agency or educational institution agrees to disclose individually identifiable personal information (the disclosure of firm specific data occurs less often) to the employment statistics office on condition that subsequent release of information from matching programs occurs in statistical form only. Frequently, the prohibition against re-disclosure of individually identifiable data is found in federal statute. For example, State agencies who administer driver's license programs are permitted by Public Law 103-322 (Title XXX Protection of Privacy of Information in State Motor Vehicle Records) to release driver's license data "For research activities, and for use in producing statistical reports, so long as the personal information is not published, re-disclosed, or used to contact individuals." Similarly, the Family Educational Privacy Rights Act allows release of personally identifiable student information to "...organizations conducting studies for, or on behalf of educational agencies ... for the purpose of ... improving instruction, if such studies are conducted in such a manner as will not permit the personal identification of students and their parents..." (20 U.S.C. 1232g). In many instances, intrastate data sharing agreements are covered by both State and federal statutes and focus on managing disclosure of information by the recipient research entity. However, not all States engage in data sharing activities and inter-State common standards have not been developed and adopted.

Intentional disclosure of personally identifiable information under the proposed administrative data program appears highly unlikely. However, given the large volume of data about individuals and employers, guaranteeing against inadvertent release of identifiable information and/or increasing the amount of information that can be derived about individuals and employers requires a systematic plan and set of uniform procedures in each State. Manual intervention to ensure that published tabular data do not inadvertently disclose individually identifiable information on persons and firms is time consuming and may be imprecise. There is clearly a need for automated systems to be made available to the States, training in their use, and a role for federal oversight. Inadvertent disclosure in one State may jeopardize the program of linking administrative data in all States. The Bureau of the Census has a program effort to automate the masking of Decennial data for confidentiality purposes. It is proposed that their expertise, along with expertise from academics on the Policy Council, be drawn upon to develop screening algorithms for administrative data products (see Moore, 1996).

Confidentiality Recommendations and Considerations:

1. Under guidance from the WIC, the LMI institute provides training to State staff on confidentiality, privacy and related issues.

2. WIC provides its first Statistical Policy paper for State LMI staff with an executive summary for SESA administrators, workforce development councils, One Stop staff and clients. This Policy paper should form the basis of State confidentiality procedures in conjunction with recommendations 3-4.

3. Funding must be made available to enter into an agreement with the Bureau of the Census to develop automated confidentiality edit procedures for standardized and ad hoc reports.

4. The WIC and the Policy Council need to determine whether or not, under Section 309 of the Workforce Investment Act, there is a need to promulgate rules regarding confidentiality procedures. Secondly, there is clearly a need to develop a common data sharing agreements for use among employment statistics offices.

Definitions of commonly used terms:

Routine use "means, with respect to the (federal) disclosure of a record, the use of such records for a purpose which is compatible with the purpose for which it was collected..."

Matching program "means any computerized comparison of – two or more (federal) automated systems of records or a system of records with non-Federal records for the purpose of establishing ... the eligibility of ... applicants for ... services .. under Federal benefit programs ... but does not include matches performed to produce aggregate statistical data without any personal identifiers..." source 5 U.S.C. 552a; the Privacy Act.

Administrative data means "data collected (by government agencies) for administrative purposes... (the) purpose of data collection concerns a course of action that affects a particular person or business. The purpose can be regulatory, administrative, legislative, or judicial."

Statistical purpose means "collecting data ...to generate an aggregate description of a group of persons or businesses. No direct action is taken for ...a specific individual or business ... policy changes based on such information could result in benefits or costs to persons or businesses."

Privacy means "an individual's freedom from excessive intrusion in the quest for information and ... (the) ... ability to choose the extent an circumstances under which his or her beliefs, behaviors ... and attitudes will be shared ... or withheld from others."

Confidentiality means "...a ... condition accorded to information as an obligation not to transmit that information to an unauthorized party ... (it) ... has meaning only when the promises made to a data provider can be delivered ... the data gatherer must have the will, technical ability, and moral and legal authority to protect the data."

Disclosure "relates to ...(the)... attribution of information to a data subject ... (it) occurs when a data subject is identified from a released file ... or the released data make it possible to determine (infer) the value of some characteristic of an individual more accurately than otherwise would have been possible..." (Duncan et.al. 1993).

Appendix A: NASWA LMI Workforce Analysis Subcommittee Membership and Charge

Phil Baker - Administrator, Labor Market Information, Nebraska Department of Labor

Gerry Bradley - Chief Economist, Economic & Analysis Bureau, New Mexico Department Of Labor

Tom Gallagher - Assistant Administrator, Research & Planning, Wyoming Department of Employment

Jay Mousa - Research Director, Research & Statistics Office, Minnesota Department of Economic Security

Roger Therrien - Director, Research & Information, Connecticut Department of Labor

This subcommittee will focus ... on data integrity of UI wage records and the rich possibilities that use of administrative databases hold, such as measurement of labor turnover, multiple job holding patterns, worker retention, underemployment and low wage concentration. They will also address issues relating to merging data sets, data sharing within and across State boundaries, and confidentiality. The subcommittee will examine quality issues relating to standardization, uniformity and consistency. The importance of data quality is heightened in light of the use of wage records for performance measurement and in support of WIA planning. The... (subcommittee) ... will ... document and define quality at it relates to ... UI wage records. This work will be prepared into a "white paper" to be used for discussion with the UI Committee during a joint meeting to be held in the summer. The "white paper" will examine the value of analysis using these data; who can benefit from its use; shortcomings of these data; and, the skill sets, as well as hardware and software needed to effectively "mine" these data sets. (Minutes, National Association of State Workforce Agencies, Labor Market Information Committee Meeting, December 19-20, 2001)

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