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HUMAN SERVICES INTEGRATION

Results of a GAO Cosponsored Conference on Modernizing Information Systems

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Abbreviations

AFDC	Aid to Families With Dependent Children
APD	advanced planning document
CARES	Client Assistance for Re-employment and Economic Support System
GAO	General Accounting Office
HHS	Department of Health and Human Services
HSITAG	Human Services Information Technology Advisory Group
PKI	Public Key Infrastructure
PRWORA	Personal Responsibility and Work Opportunity Reconciliation Act
TANF	Temporary Assistance for Needy Families
WISDOM	Wisconsin Data for Operational Management

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Congressional Committees

Information systems play a central role in the management of human services programs. Ideally, the systems provide information and tools used by case managers to assess individual clients, refer them to needed services, and track their progress. Likewise, information systems have the potential to provide information used by program administrators to ascertain caseload characteristics and service needs and determine the extent to which program objectives are being achieved.

States face new information systems challenges as a consequence of the sweeping changes brought about by welfare reform. The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 (P.L. 104-193) replaced the Aid to Families With Dependent Children (AFDC) program with a block grant to states to provide Temporary Assistance for Needy Families (TANF). TANF has a heightened emphasis on work and job placement and establishes a 5-year lifetime limit on adults' receipt of federally funded TANF assistance. To meet information needs for welfare reform, information systems must be able to share data across the numerous programs that are being used to help support families' movement to economic independence, such as TANF, Medicaid, job training, child care, and vocational rehabilitation. However, previous studies, including those by the U.S. General Accounting Office (GAO), have identified major gaps in the capabilities of states' information systems to meet such needs.

To assist congressional oversight and inform our work in the area of information systems for human services, GAO and the Nelson A. Rockefeller Institute of Government established a working group of experts from diverse organizations in March 1998. The group met eight times over 3 years, culminating in a conference held in Reston, Virginia, on June 28 and 29, 2001, that focused on the critical issues that states face in developing information systems to support objectives such as integrated service delivery and performance monitoring across human services programs. Specifically, the conference examined (1) the capabilities of state information systems to meet information needs for welfare reform, (2) initiatives undertaken by states to improve their information systems, (3) challenges to systems modernization, and (4) strategies to improve state information systems and facilitate service integration. About 70

participants attended the conference, including congressional staff; federal, state, and local program and information technology managers; welfare researchers; information system contractors; and representatives of private, non-profit foundations. The conference featured a mix of paper presentations and discussions and the development of ideas by participants in small discussion groups. This report summarizes the conference proceedings.

Summary of Proceedings

Conference presenters maintained that systems modernization is needed because there are major gaps in the capabilities of states' information systems to meet information needs for administering and overseeing welfare reform. With its shift in emphasis from income maintenance to self-sufficiency, welfare reform has a need for greater data sharing and systems capability to support new partnerships among diverse service providers and variations among local operations. However, the majority of the local TANF administrators surveyed by GAO in 15 states reported that their current systems provide half or less of the information needed to manage individual cases, plan appropriate services for the caseload, and monitor overall program performance. The administrators are missing information, in part, because some of the systems used by agencies that serve TANF recipients do not share data on these recipients, which constrains the ability of case managers to arrange and monitor the delivery of services. In addition, many states are using large, mainframe systems that are old, which compounds the difficulty of meeting new information needs because these systems are limited in their ability to take advantage of recent innovations in technology. These innovations, such as Internet-based technologies, offer significant opportunities for improving the delivery of human services.

Presentations on the systems initiatives in five states—New Jersey, North Carolina, Oregon, Utah, and Wisconsin—highlighted the approaches these states are taking to modernize their information systems and benefit from recent technological advances. While these initiatives are at various stages and have a multitude of stated objectives, all have expanded their data-sharing capabilities in order to enhance program management and service integration—that is, the coordination of services for families and individuals that are delivered by different programs and agencies in a manner that appears seamless. To enhance service integration, the state initiatives are making data from different programs available to case managers and, in some cases, to program applicants using a single computer screen. For example, New Jersey's One Ease-E Link initiative provides hardware and software to counties so they can create county-

level networks comprised of a multitude of public and private service providers, including nonprofit agencies. The Internet-based system enables these providers to share recipient information using case management software and assess applicants' program eligibility by using an eligibility-screening tool. Three of the five states have also created large databases, called "data warehouses," that combine data from various program sources and support program management by generating customized management reports on topics such as recipients' use of government services over time.

Conference participants identified and discussed at length three key challenges for systems modernization: enhancing strategic collaboration among different levels of government, simplifying the cumbersome approval process for obtaining federal funding for information systems, and obtaining staff expertise in project management and information technology. With regard to intergovernmental collaboration, one of the presenters highlighted the need to find ways to facilitate investments by local, state, and federal governments together in information systems to achieve a citizen-centered service delivery model. Other participants focused on the federal government and highlighted what they viewed as an overemphasis on regulation and an insufficient effort to help states and localities invest wisely in technology and learn from best practices. With regard to funding, several participants maintained that the overall process for obtaining approval for federal funding—the advanced planning document process—can be slow, burdensome, and inconsistent with the way modern systems are designed and implemented. The participants also commented that the cost allocation component of this process, which requires costs to be properly allocated to the various programs that benefit from a project, sometimes delays project implementation and that more guidance is needed on acceptable cost allocation methodologies. Finally, several participants cited difficulties that some states have experienced in obtaining sufficient staff expertise in management of information technology projects and emphasized the importance of using proven methods of project management in this specialized field to increase the chances of project success.

Conference participants identified numerous strategies to improve state information systems and facilitate service integration. By identifying broad roles that each of the following sectors could play—the Congress, federal agencies, states and localities, and information technology contractors—they affirmed that diverse groups can contribute to making progress in this area. For example, participants suggested that in addition to authorizing funding for systems demonstration projects, the Congress could play a

broad supportive role in helping to remove barriers and facilitate systems modernization as it obtains further knowledge of technology trends and the specific needs of human services systems. In addition, participants developed more than 20 proposals for actions to facilitate systems modernization. The majority of these proposals are intended to enhance collaboration among different levels of government and simplify the approval processes for obtaining federal funding. However, the list of proposals does not represent a consensus of participants. Participants brought diverse perspectives to the issues discussed at the conference and did not have time to systematically assess the merits or relative priorities of the various proposals. Nonetheless, the proposals represent a rich source of potentially useful ideas for improving the development of information systems for human services and thus merit further analysis and discussion.

Background

The conference, whose theme was "Realizing the Promise of Technology: Modernizing Information Systems for Human Services," was co-sponsored by GAO, the Rockefeller Institute, the National Health Policy Forum, and The Finance Project (Welfare Information Network). To promote an informed dialogue at the conference, invitations were sent to selected individuals from four key sectors involved in developing information systems for human services—the Congress, federal agencies, state and local governments, and information technology contractors—along with research organizations and foundations. Appendix II lists the names and affiliations of conference participants. State representatives included those with responsibility for program management as well as those with expertise in information technology. Participants from 14 organizations were asked to prepare papers for presentation at one of three panels—The Need for Systems Modernization, Possible Approaches for the Future, and State and Local Experiences. Appendix I contains the conference objectives, agenda, and Web addresses for each of the papers and briefing charts presented at the conference. Following the panel presentations, participants were separated into small groups on the first day to discuss the history, roles, and challenges of various sectors in systems modernization, and on the second day to propose actions that would best facilitate systems modernization. Assignments to each discussion group were made to achieve a mix of participants from diverse backgrounds.

Systems Modernization Needed To Better Meet Information Needs For Human Services

Presenters at the conference maintained that state information systems need to be modernized to better meet new information needs that have arisen from shifts in the objectives and operations of states' welfare programs. Research on states' systems has identified major gaps in their capabilities to support the implementation and oversight of welfare reform. In addition, many states are using large, mainframe systems that are old, which compounds the difficulty of meeting new information needs because these systems are limited in their ability to take advantages of recent innovations in technology. Innovations, such as Internet technology, offer significant opportunities for improving the delivery of human services.

Shifts in Welfare Program Objectives and Operations Place New Demands on Information Systems

With the advent of welfare reform, states' programs for needy families with children have experienced dramatic shifts in their objectives and operations, which have created new demands on information systems, according to GAO assistant director Andrew Sherrill and Rockefeller Institute director Richard Nathan and senior fellow Mark Ragan.[1] PRWORA placed a greater emphasis on the importance of work and established various signals to reinforce this emphasis, such as stronger work requirements and a 5-year time limit on federal TANF assistance to families. The shift from an income maintenance focus under the prior AFDC program to a service-oriented, self-sufficiency focus under TANF has significant implications for information systems. The technology challenge of welfare reform is to provide the information needed to integrate services to clients and track their progress towards self-sufficiency. To help needy families prepare for and obtain work, case managers need detailed information about factors such as family circumstances, job openings, and support services, which is very different from the information needed to issue timely and accurate cash assistance payments.

In many cases, states and localities have enhanced their efforts to partner with other organizations to serve needy families, which creates demands for sharing data across organizations. As welfare agencies focus on moving needy families toward self-sufficiency, workers are drawing on other federal and state programs, often administered by separate agencies,

[1]See web addresses in app. I to conference papers by Andrew Sherrill, "The Capabilities of State Automated Systems to Meet Information Needs in the Changing Landscape of Human Services," and by Richard Nathan and Mark Ragan, "Federalism and the Challenges of Improving Information Systems for Human Services."

to provide a wide array of services. While local welfare agencies typically determine eligibility for TANF, food stamps, and Medicaid, other programs that provide key services to TANF clients may be administered by separate entities, such as housing authorities or education agencies. Most notably, because TANF has focused welfare agencies on employment, a focus that has long been the province of state and local workforce development systems, welfare agencies need to work more closely than before with workforce development systems. Finally, in many cases state and local welfare reforms involve a greater effort to partner with community organizations, including faith-based organizations, to meet the needs of low-income families.

Devolution is another factor that has contributed to the expansion of information needs for human services. Under PRWORA, states have greater flexibility in designing and operating their TANF programs and some states in turn have devolved substantial authority to localities for their TANF programs. As a result, state information systems will be called upon to support a potentially more diverse range of local program goals and operations. Moreover, providing automated support for localities is typically an evolving process, since local information needs can change as caseload composition changes, service strategies evolve, or new policy issues emerge.

Current Information Systems Do Not Fully Support Information Needs for Welfare Reform

Andrew Sherrill provided an overview of the research done by GAO, in collaboration with the Rockefeller Institute, on the capabilities of states' information systems. This research, he said, highlights the need for systems modernization. In 1999, GAO surveyed state and local program administrators in 15 states on the overall extent to which their current information systems met different types of information needs for administering and overseeing welfare reform.[2] GAO focused on three broad types of information needs: those for case management, service planning, and program oversight. Agency workers need information for case management to perform the full range of tasks involved in coordinating the various services provided to an individual client, such as making referrals to training and monitoring a client's progress towards

[2]The states were Arizona, Georgia, Kansas, Minnesota, Mississippi, Missouri, New Jersey, New York, Ohio, Texas, Utah, Washington, West Virginia, Wisconsin, and Wyoming. For further information about the methodology and findings, see U.S. General Accounting Office, *Welfare Reform: Improving State Automated Systems Requires Coordinated Federal Effort*, GAO/HEHS-00-48, (Washington, D.C.: 2000).

employment. Service planning, which is performed by local and state program administrators, requires aggregate information on the characteristics and service needs of the caseload to determine the appropriate services that should be made available for the caseload. Program oversight, which is performed by program administrators and oversight officials, requires aggregate information on relevant measures of program performance, such as job entries and job retention. The majority of the local officials that GAO surveyed reported that their current systems provided half or less of the information needed for each of the three types of information needs. Overall, state officials provided a somewhat higher assessment of system capabilities but still acknowledged major gaps in some cases.

Andrew Sherrill explained that GAO's in-depth fieldwork at the state and local level in six states provided more detail about information system shortcomings. A major shortcoming, cited to varying degrees by officials in these states, is that some of the systems used by the agencies providing services to TANF recipients do not share data on these recipients, thus hampering a case manager's ability to arrange and monitor the delivery of services in a timely manner. For example, local officials in New Jersey told GAO that data are not transferred electronically between the labor department, which tracks attendance of TANF recipients at work activities, and the welfare department, which imposes sanctions on TANF recipients who fail to meet work requirements. Consequently, in some cases, TANF recipients have received sanctions in error because the welfare department's system could not obtain the needed data in a timely manner from the labor department's system to verify a recipient's participation in work activities. Another consequence of the lack of data sharing in the states GAO studied is that agency workers have had to input data for some items more than once because the data were not automatically transferred and updated from one system to another. Multiple entries of the same data not only reduces the time available for work directly with clients but also increases the risk of introducing errors into the data contained in information systems.

The extent to which states have established links among information systems for human services varies substantially. In the 15 states that GAO surveyed, the systems that support TANF eligibility determination are, in almost all cases, linked with the information systems for food stamps, child support enforcement, TANF work activities, Medicaid eligibility determination, and transportation subsidies. These links reflect federal mandates and enhanced federal funding for systems in these programs. In contrast, GAO found that information systems for other services that

TANF recipients may need to facilitate their movement toward employment, such as job training, welfare-to-work grant services, vocational rehabilitation, job listings, and subsidized housing were generally not linked to systems for determining TANF eligibility. Some state officials and others attending the conference commented that changed rules governing interactions between welfare and Medicaid have also presented new demands for the modification of information systems. Under these rules, TANF recipients, unlike AFDC recipients, are not automatically eligible for Medicaid. Not only has more work been required to demonstrate the eligibility of TANF families for these programs, but more work has also been required to modify systems so that closures of TANF cases do not generate automatic closures of Medicaid cases, as has happened in some situations.

A second shortcoming of some information systems, which was voiced especially at the local level, was the limited ability to obtain data needed by program managers to meet their particular management challenges. For example, local officials at one site told GAO that data on the characteristics of TANF recipients in the state's information system are often not available in a format that can be easily manipulated, so obtaining data depends on the technical expertise of the user. Overall, local officials cited a need for user friendly tools that provide the capability to generate a locally designed management report. In his comments on the presentation by Andrew Sherrill, Thomas Gais, director of the federalism research group at the Rockefeller Institute, said that the gaps in systems capabilities identified by GAO represent persistent problems that were also identified in earlier fieldwork by Rockefeller Institute researchers and in their follow-up fieldwork in 2000.[3]

Age of Many States' Systems Compounds Difficulty of Meeting New Information Demands

The results of a survey by the U.S. Department of Health and Human Services (HHS) cited in GAO's presentation indicate that many states have been using old information systems. Of the states responding, 26 percent said that the systems they were using when TANF was enacted in 1996 had first become operational in the 1970s and 40 percent said that their

[3]For an overview of the earlier work, see the section on information systems in Richard P. Nathan and Thomas L. Gais, *Implementing the Personal Responsibility Act of 1996: A First Look* (Albany, NY: The Nelson A. Rockefeller Institute of Government, 1999).

systems had become operational in the 1980s.[4] Many of these older systems are housed in large mainframe computers. The HHS report goes on to point out that generally accepted information technology standards assume that the average useful life of a large-scale computer system ranges from 5 to 7 years. Moreover, the report maintains that the age of states' systems has limited their ability to take advantage of technological improvements because the underlying equipment and software platforms of these systems do not lend themselves easily, if at all, to technological advances because of basic incompatibilities. A conference participant commented that New York's large mainframe system has not been modernized because it would be costly and time-consuming. Instead, the state operates a dual system, relying primarily on its mainframe, but with a separate system developed to meet new data reporting requirements. Conference presenters from New Jersey, North Carolina, Oregon, Utah, and Wisconsin noted that their states continue to use older mainframe systems to varying degrees, using upgrades and interfaces where possible, although they are developing new systems to enhance their capabilities.

The continued presence of these older mainframe computers reflects the historical role of the federal government in funding the development of such systems in the 1970s and 1980s, according to some conference participants. The major objectives of these systems were to increase the accuracy of eligibility determinations and cash payments, reduce error rates, and detect and deter fraud and abuse in major entitlement programs. While costs for systems development and operation were shared by the federal government and states, the federal government provided enhanced funding (i.e., more than 50 percent) in many cases. For example, states could receive federal matching funds for 90 percent of their development costs for approved welfare, Medicaid, child support, and certain child care systems. States could also receive federal matching funds of 75 percent for developing statewide food stamps systems, and in the early 1990s, for developing child welfare systems. In the mid-1990s, the federal government eliminated enhanced federal matching payments for all

[4]U.S. Department of Health and Human Services, Administration for Children and Families, Office of State Systems, *Report to Congress on Data Processing and Case Tracking in the Temporary Assistance for Needy Families Program* (Washington, D.C.: HHS, Dec. 1997).

systems except child support and Medicaid management information systems for claims processing.[5]

Information system contractors from the Human Services Information Technology Advisory Group (HSITAG) described various innovations in technology that they said offer significant opportunities for improving the delivery of human services.[6] Today's personal computers can process more data at lower costs, making it possible to automate even small service providers in the local community. Systems can be secured from outsiders using firewall technologies, and confidential information that is transferred among agencies can be encrypted, further increasing security. Telecommunications networks are more widely available, providing greater opportunities for data sharing among different programs that serve the same populations. The Internet and World Wide Web provide opportunities to link program applicants, recipients, case managers, and administrators to each other and to a wealth of information needed to achieve various objectives. Graphical user interfaces allow icons or pictures to be used as well as words, so it is easier to access and navigate systems from the computer screen, and the data accessible can be expanded to include photographs, sound clips, and movies that can facilitate program orientation, assessment, and training. Coding by location and mapping represent new capabilities available to program planners to target services to families and neighborhoods. Other technological advances make it possible to store and retrieve large volumes of data with greater efficiency at less cost than was possible a decade or more earlier to facilitate meeting reporting requirements and providing information for program oversight.

Systems Modernization Efforts Are Underway in Several States

Presenters from North Carolina, Oregon, New Jersey, Utah, and Wisconsin described initiatives that their states had undertaken to modernize information systems for human services. The initiatives—designed to meet the unique needs of each state—are in varying stages of implementation and generally share some common goals, such as enhancing service integration. The states faced a broad range of issues in developing and

[5]For historical background on federal financial participation rates, see U.S. General Accounting Office, *Automated Welfare Systems: Historical Costs and Projections* GAO/AIMD-94-52FS, (Washington, D.C.: 1994).

[6]See app. I for web address for the paper by HSITAG, "Innovations in Technology and Project Management Practices That Can Improve Human Services."

implementing their initiatives, which reflect the complexity and scale of information systems projects.

States' Initiatives Seek to Enhance Service Integration and Program Management Through Expanded Data Sharing

While the states' initiatives have a multitude of stated objectives, their central goals generally include providing enhanced automated support for service integration and program management. Gary Weeks, director of human services reform at the Annie E. Casey Foundation, discussed his experiences in promoting service integration as the former director of the Oregon Department of Human Resources.[7] He said that many program recipients fail because they are among the least prepared to deal with the maze of human services bureaucracy and case management plans—in some cases multiple plans for a single recipient. His strategy in Oregon was to create a system in which each recipient had a single case management plan, based on an initial, comprehensive assessment and coordinated by a lead case manager who was supported by information systems that were linked. Creating such a system, he added, did not require cutting edge technology but rather getting agreement from all the right people on the recipient data that was most important, securing access to critical databases, and authorizing case managers to work with individualized recipient data. Richard Nathan and Mark Ragan of the Rockefeller Institute echoed this point in their presentation, arguing that service integration has been a longstanding aim of program officials, but that the real politics of human services—characterized by bureaucracies with their own cultures and politics—have made this difficult. They went on to say that information technology can allow human service providers to overcome the politics of program proliferation not necessarily through "one-stops"—co-locating staff from different programs at one-stop centers—but through "one-screen," that is, making data from different programs available to a caseworker on a single computer screen.[8]

With respect to the objective of improving automated support for program management, three of the states have developed or plan to develop large data warehouses or smaller data marts, that is, specialized databases that

[7]Gary Weeks, *Integrating Human Services* (Albany, New York: The Nelson A. Rockefeller Institute of Government, 2001), available at http://www.rockinst.org/publications/pubs_and_reports.html.

[8]GAO has reviewed the effects of variations in financial eligibility rules on administrative processes and low-income families' access to federal programs. See U.S. General Accounting Office, *Means–Tested Programs: Determining Financial Eligibility Is Cumbersome and Can Be Simplified* GAO-02-58, (Washington, D.C.: 2001).

store information from multiple sources in a consistent format, usually for a specific subject area, and are separate from the databases used for daily business operations. Using data warehouses or marts, program administrators can generate customized management reports on request without slowing routine business transactions, including reports that track recipients' use of government services over time and respond to varied requests for information from state legislatures, federal agencies, and research organizations.

While the information systems initiatives of the five states share similar broad goals, they vary in terms of stages of development, with North Carolina in the planning phase, Oregon in the pilot phase, and New Jersey, Utah, and Wisconsin fully operational. What follows is an overview of some of the distinctive aspects of each state's initiative.

- Bill Cox, director of information resource management at the state's Department of Health and Human Services, described **North Carolina's** comprehensive planning effort, the **Business Process Re-Engineering Project**.[9] Recognizing that its current mainframe information systems are at the end of their life cycle, the state developed a model of a reengineered business process for human services to prepare for the development of a single, comprehensive statewide information system. This system would support a wide array of programs, including TANF, Medicaid, children's health insurance program, food stamps, child care, child support, child welfare services, and adult services for families. The reengineered business process is intended to resolve a host of deficiencies with the current process, such as excessive paper-based processes, little access to "real-time" data, and minimal communications among agencies and partners. As part of the reengineering initiative, a contractor working with a team of state and county officials for 3 months examined current business processes and concluded that a minimal amount of time is actually spent assisting applicants and recipients while the majority of time is spent on administrative tasks. On the basis of the team's recommendations, the state began implementing its initiative in June 2001, including the development of a data warehouse.

- Gary Weeks of the Anne E. Casey Foundation outlined **Oregon's** pilot initiative that uses information technology to support integrated service

[9]See web address in app. I for paper by Bill Cox, "Reengineering Business Processes to Integrate the Delivery of Human Services in North Carolina."

provision at Family Resource Centers in 4 of the state's 36 counties. Workers from various agencies have been co-located at these centers, where families and individuals receive an initial comprehensive needs assessment, a single case management plan is developed with a lead case manager, and data on the family are available to agencies located at the center. To provide this shared data, the centers use a software tool called MetaFrame, which provides access on a caseworker's computer screen to the separate databases for TANF, child welfare, and mental health and substance abuse systems. Caseworkers can obtain information from these databases on eligibility, services received, and case narrative notes in some cases, and thereby build their own comprehensive file on a client. Gary Weeks noted that the software tool's capabilities are fairly rudimentary because they do not provide a single integrated database, but the tool provides caseworkers access to information in a fairly low-tech and relatively inexpensive manner. To overcome data confidentiality issues, applicants are asked to sign a release form at the time of their assessment that authorizes the sharing of their case file data for program purposes, and about 96 percent of applicants sign this form.[10]

- William Kowalski, director of the **One Ease-E Link** project at the **New Jersey** Department of Human Services, explained that a key aim of the initiative was to employ information technology to support the building of new cooperative relationships among the diverse providers of human services in New Jersey and thereby enhance service integration.[11] The initiative seeks to accomplish this by providing hardware and software to counties so they can create county-level networks comprised of a multitude of public and private organizations, including nonprofits such as United Way organizations. Each county network is part of the larger One Ease-E Link network that includes a website with an eligibility screening tool, case management software, secure e-mail, discussion forums, document libraries, and resource directories. This network is also linked to a single database shared with three state agencies: the Departments of Human Services, Labor, and Health and Senior Services. The sharing of information is secured behind a firewall and protected by Public Key

[10]For information on some of the legal restrictions that can limit the ability of federal programs to effectively share information with one another, see U. S. General Accounting Office, *Benefit and Loan Programs: Improved Data Sharing Could Enhance Program Integrity* GAO/HEHS-00-119, (Washington, D.C.: 2000).

[11]See web address in app. I for William G. Kowalski, "One EASE E-Link: New Jersey's Pursuit to Establish an Electronic, Multi-Tooled Network for the Delivery of Coordinated Social, Health and Employment Services."

Infrastructure (PKI) technology that uses digital signatures and encrypts data.[12] Counties that join One-Ease-E Link maintain their networks through fees they collect from member service providers. One Ease-E Link has been implemented by 17 of New Jersey's 21 counties and more than 900 local service providers have become part of the network.

- Russell Smith, deputy director of information technology at the Utah Department of Workforce Services, described **Utah's** development of the **UWORKS One-Stop Operating System**.[13] In 1996, the state created the Department of Workforce Services, which combined 25 programs from 5 different departments with the goal of merging job training, job development, and welfare-related services such as TANF, food stamps, and child care into a single efficient system. The new department inherited various computer systems that had supported each of the programs and recognized that it needed an integrated case management system that supported all of its programs. The One-Stop Operating System was developed to fill this need at nearly 50 one-stop employment centers throughout the state. The system uses Internet technology and has linkages with databases for program eligibility, job listings, job training, labor market information, and unemployment insurance. Job seekers can access services on their own by using a web browser or obtain help from state staff at the one-stop centers that offer multiple services under a single roof. To expand information for program management, the state has developed a data warehouse that can generate reports in response to on-line queries.

- Paul Saeman, acting director of the workforce information bureau in **Wisconsin's** Department of Workforce Development, explained how his state's extensive information system has evolved in response to changes in program objectives and organization.[14] The system serves two state departments that have split responsibility for human services programs.

[12]For a description of PKI and a discussion of issues involved in its adoption by the federal government, see U.S. General Accounting Office, *Information Security: Advances and Remaining Challenges to Adoption of Public Key Infrastructure Technology* GAO-01-277, (Washington, D.C.: 2001).

[13]See web address in app. I for Russell Smith, "Utah's Development of a One-Stop Operating System."

[14]See web address in app. I for Paul Saeman, "Wisconsin State System Initiatives for Eligibility and Work Based Programs."

His department is consolidating TANF and child care with other employment programs, while the Department of Health and Family Services is expanding benefit entitlement programs like Medicaid and food stamps. To support integrated case management and eligibility determination across these departments and programs, the state has built 22 subsystems that comprise the Client Assistance for Re-employment and Economic Support System **(CARES)**. Teams of workers at one-stop job centers use the Case Manager's Desktop Reference system to access CARES data and monitor participant eligibility and services received in 6 or more programs. A plan for sharing the CARES system and developing it in the future was established by the two departments after many months of negotiation. While CARES supports day to day program operations, it also feeds information into a series of small data marts and a larger data warehouse, called the Wisconsin Data for Operational Management (WISDOM), that are used for planning and reporting purposes. With the help of WISDOM, knowledgeable state and local users expect to be able to create hundreds of different reports in almost endless combinations for programs such as TANF, child care, and food stamps. In addition, CARES data compiled over time on families served by TANF and other programs is being inventoried, documented, and stored as part of the Wisconsin Program and Administrative Data and used for research and evaluation by state staff and the Institute for Research on Poverty at the University of Wisconsin.

States Confronted a Broad Range of Issues in Developing and Implementing Their Initiatives

The information systems initiatives of these states are complex and large-scale undertakings, and states faced a broad range of issues in developing and implementing their initiatives. Table 1 summarizes some of the issues most commonly reported by the state presenters and provides examples of responses taken to these issues. For example, these issues include obtaining support for the initiative, training system users, maximizing the useful life of the system, and managing the project effectively. These issues are not unique to the human services but are the general types of issues that arise in large-scale information systems projects.

Table 1: Issues Faced and Responses Taken by States in Developing and Implementing Their Information Systems Projects

Issues	Examples of state agency responses (States indicated in parentheses)
Obtaining support for the project from state's leadership	Present project plans to governor and cabinet in computer slide show (NJ) or to state executive steering committee (NC) for approval.
Obtaining support for the project from agency staff who will use the system	Include state and local representatives in collaborative planning process (NJ, NC, OR). Focus first on fixing problems that case managers identify as the most annoying or time consuming (WI).
Providing adequate training to staff who will use the system	Provide documentation on system so staff can continue to learn on their own after they have received training (WI). Develop skills of selected agency users who will assist their peers and facilitate cultural change in agency (NJ, OR).
Obtaining adequate funding for development and operations of state and local information systems	Provide state start-up funds; then collect user fees from local provider agencies (NJ). Launch pilot projects in localities to demonstrate value of the systems (NJ, OR).
Maximizing the system's compatibility with other systems and capability to support future upgrades	Follow industry or state standards governing the design and deployment of technology investments (NJ, NC, and UT). Employ Internet technology with a Web browser as the user interface rather than client server technology with Windows or Macintosh as the user interface (UT).
Minimizing the risk that conversion to the new system will result in the loss of functions or data	Maintain existing system, resulting in dual systems, during conversion (NJ). Pilot the project on a test basis and make adjustments as needed (NJ, OR).
Overseeing contractors' performance to maximize cost effectiveness of systems development	Test applications yourself rather than relying on contractor's demonstrations (UT). Specify expectations for funding, ownership, maintenance, and modifications in the contract (UT).
Ensuring adequate state management of the project that can survive personnel changes	Hire the best available project managers and hold them accountable for performance (UT). Provide clear authority, vision, and sufficient resources to the project team (OR).
Minimizing adverse effects of competition among state agencies for information systems resources	Emphasize need to serve the same families to stimulate collaboration rather than competition (NJ). Place authority to prioritize demands about resources with a neutral third party (WI).

Source: Papers presented at conference by state officials as shown in app. I.

Challenges for Systems Modernization Pertain to Intergovernmental Collaboration, Federal Funding Processes, and Project Management

Conference participants identified and discussed at length three key challenges for systems modernization: enhancing strategic collaboration among different levels of government, simplifying the cumbersome approval process for obtaining federal funding for information systems, and obtaining staff expertise in project management and information technology. These challenges were identified in the small group sessions and elaborated in greater depth in several of the conference papers.

Enhancing Strategic Collaboration Among Federal, State, and Local Governments

A key challenge to modernization and integration identified by conference participants is that of achieving greater strategic collaboration across programs and agencies and among levels of government. This challenge was articulated in the presentation by Sandra Vargas, Administrator of Hennepin County, Minnesota, and Costis Toregas, president of Public Technology Incorporated, who provided a local perspective on information technology issues.[15] Vargas and Toregas reminded other participants of the importance of including localities when states and federal agencies develop plans for human service programs and information systems. In their view, the guiding vision in this area should be that of "local, state, and federal governments investing and executing together around a citizen-oriented service delivery model that produces measurable results" and they see technology as the tool to execute the vision. However, they maintained that what is still missing is a framework for achieving this vision that is truly collaborative. They added that greater collaboration could promote such outcomes as information technology investments that build on one another and work being performed by the level of government best able to accomplish the task.

Richard Nathan and Mark Ragan of the Rockefeller Institute echoed the need for more intergovernmental collaboration in their presentation. They maintained that many of the recommendations that have been made in the last decade to facilitate systems improvements have expressed a common theme—that federal agencies should improve and integrate their policies and procedures. However, in their view, it is not reasonable to expect all solutions to come from the federal government or that federal changes will necessarily and quickly result in better state and local information systems. They maintained that federal, state, and local governments, as well as technology contractors, all have a role to play in systems modernization for human services and that improvements are needed in the interactions of these partners. Nathan and Ragan proposed that an institute for the management of human services information systems be created that would, among other objectives, convene federal, state, and

[15]See web address in app. I for briefing charts by Sandra Vargas and Costis Toregas, "The Need to Align Federal, State, and Local Technology Investments: A Local Perspective." Public Technology Incorporated is a nonprofit national organization dedicated to furthering the use of technology in cities and counties for both elected officials and professional managers.

local officials across program areas to discuss ways to remove barriers to system development.[16]

Some conference participants commented that the federal government could play a greater collaborative role in facilitating systems modernization. They explained that in the 1970s and 1980s, the Congress and federal agencies had taken the lead in encouraging states to invest in technology to improve services to needy families. But, they added that they currently see little coordinated federal effort to help states and localities invest wisely in technology, learn from the best practices as well as the mistakes of others, and tailor information systems to meet local needs. Instead, they are left with the impression that federal agencies primarily regulate rather than facilitate systems development for human services, and do so in a narrow context, prescribing details rather than providing broader strategic guidance.

Another area cited in which the federal government could play an improved collaborative role pertains to the enactment of legislation that has implications for state systems. Some conference participants commented that in certain instances, federal legislation is enacted that does not anticipate adequately the time and cost required to develop or modify state information systems. For example, several conference participants noted that legislative deadlines for systems implementation often follow a "one size fits all" approach that places all states in competition for a limited number of private contractors and fails to accommodate differences in state capabilities. Another participant said that states do not receive sufficient federal funding for the costs of providing benefits to needy families through electronic benefit transfers. Several participants also cited the extensive efforts required of diverse state agencies to re-examine the privacy and security of their automated data as a result of the passage of the Health Insurance Portability and Accountability Act of 1996 (P.L. 104-191).

[16]As described in their paper, other roles of such an institute would include developing and training state and local system project managers, showcasing and sharing information about good practices, and facilitating innovative systems designs at the state and local levels. See "Federalism and the Challenges of Improving Information Systems for Human Services."

Simplifying Cumbersome Approval Process for Obtaining Federal Funding

Obtaining approval for federal funding of state information systems development and operations can be a slow and burdensome process that delays project implementation, according to various participants at the conference. Participants cited problems with both the overall approval process for obtaining funding—the advanced planning document (APD) process—and the cost allocation component of this process. As shown in table 2, states must submit required documents under the APD process and receive federal approval from the relevant federal agency to obtain federal funding for systems development for Medicaid, food stamps, child welfare and child support enforcement.[17] An APD is not required if TANF funds only are used for a project, because TANF is a block grant. As part of the APD process, states submit specific documents, including planning, contracting, and purchasing documents, which cover needs, objectives, requirements analysis, alternatives analysis, project management plan, cost benefit analysis, proposed budget, and any proposed cost allocation. If federal agencies do not respond within 60 days, approval is automatic. If federal agencies request further state documentation or clarification, the 60-day clock starts over when the state's additional documentation is received, so the actual approval process may take longer. An updated APD is required annually or more frequently if significant changes are involved.

[17]Prior written approval under the APD process is required for combined state-federal expenditures of $5 million or more for systems acquired through an open competitive process; $1 million or more for systems acquired through a sole source process; and any amount for systems acquired with federal funds under the enhanced match, according to 45 C.F.R. Sec. 95.611.

Table 2: Federal Funding for Human Services Information Systems by Program, 2002

Program	Federal agency	Nature of funding	Federal /state funding percentage for information systems	Rules for funding systems
TANF	Administration for Children and Families, HHS	Block grants	No state match required[a]	No APD
Medicaid —eligibility —claims processing	Centers for Medicare and Medicaid Services, HHS	Entitlement	50/50 – system development 50/50 – system operations 90/10 - system development 75/25 – system operations	APD
Child care	Administration for Children and Families, HHS	Block grants	No state match required	No APD
Child support enforcement	Administration for Children and Families, HHS	Entitlement	66/34 - system development 66/34 – system operations	APD
Food stamps	Food and Nutrition Service, Agriculture	Entitlement	50/50 – system development 50/50 – system operations	APD
Child welfare	Administration for Children and Families, HHS	Entitlement	50/50 – system development 50/50 – system operations	APD
Employment and training	Employment and Training Administration, Labor	Formula grants	No state match required	No APD

[a]Where no state match is required, there may be limits on the amount of federal funds that can be spent for administration. However, information systems under TANF are not subject to the 15-percent limit on administrative expenditures.

Source: Richard Nathan and Mark Ragan, Nelson A. Rockefeller Institute of Government, "Federalism and the Challenges of Improving Information Systems for Human Services."

The current APD process fails to address the fundamental shift that has occurred in information systems practices over the past 20 years, according to Jerry Friedman, former executive deputy commissioner at the Texas Department of Human Services, and John Cuddy, chief information officer at Oregon's Department of Human Resources.[18] In their view, the APD process, designed to mitigate financial risks and avoid incompatibilities among systems, was appropriate when states typically worked for 3 to 5 years to develop mainframe systems that were implemented with a "big bang." Since then, states have generally shifted from investments in mainframes to smaller systems that are developed and

[18]See web address in app. I for paper by Jerry Friedman and John Cuddy, "Reengineering the Approach by Which the Federal Government Approves and Monitors the Creation of State Human Services Information Systems." Jerry Friedman is now the executive director of the American Public Human Services Association.

implemented incrementally through a series of small, quick projects. Friedman and Cuddy explained that in the time it takes to obtain federal funding approval under the APD, states' plans may be obsolete, given the current fast pace of technological advances. They also noted that the APD process was intended for systems in which the design and development stage was distinct from the implementation and operations stage. They maintained that these distinctions no longer fit state practices, which are iterative, with one stage overlapping or running concurrently with another and lessons learned from one project's implementation altering the planning of another. Friedman and Cuddy concluded that the APD process is not working to the satisfaction of anyone and that it is time to reengineer the process. William Kowalski echoed their views, commenting that New Jersey experienced lengthy delays and altered its plans for the development of a data warehouse because of difficulties obtaining approval for federal funding under the APD process.

Rick Friedman of the Centers for Medicare and Medicaid (CMS, formerly the Health Care Financing Administration) agreed that the APD documentation appears daunting, but noted that similar documentation is often required for approval within states. To the extent that the federal requirements are already addressed in the states' own internal approval processes, Rick Friedman said that the federal agencies would be willing to review the documentation previously developed to satisfy the state procurement offices. If there are additional federal requirements, however, these would still have to be addressed. In an effort to expedite the APD approval process, his agency developed a streamlined APD format for use by states interested in receiving federal financial support for Medicaid-related activities under the Health Insurance Portability and Accountability Act. The new format re-packaged existing requirements in a way that simplified the entire process. He added that North Carolina used this format in making its request and found it to be considerably easier and more efficient.[19]

Within the APD process, conference participants identified cost allocation as a component that may delay federal funding approval and impede

[19]Another HHS official added that under the APD process, states gain certain advantages from prior approval of federal funding, such as the ability to "lock in" the federal shares as borrowers might "lock in " interest rates, relief from some cash flow problems, and reduced risk that costs will be disallowed and thus not reimbursed by the federal agencies.

service integration.[20] State information systems that support more than one federal program must have a cost allocation plan approved by the federal agencies that provide funding. To receive federal approval, the cost allocation plan must be complete and provide sufficient detail to demonstrate that the costs are allowable and fairly allocated among the various federal and state programs that benefit from the project, including TANF (if applicable). Within the plan, different methodologies are used to justify the costs for specific objectives, such as eligibility determination. The allocation of costs that must accompany the APD for systems development is usually based on different methodologies than the allocation of costs for systems operations. Federal agencies have not issued guidance on specific methodologies. The cost allocation plans for systems development must be approved by each federal agency expected to provide funding, while the plans for systems operations must be approved by HHS, the lead federal agency.[21]

Cost allocation has received more attention from state human services officials under welfare reform because TANF is now subject to rules governing cost allocation that did not apply to AFDC.[22] AFDC was exempted from Office of Management and Budget cost allocation rules based on HHS' interpretation of the legislative history. Under the exemption, AFDC could be considered the primary program for common costs, such as entering data on applicants' income and assets, and could cover costs that otherwise would have been allocated to various programs like Medicaid or food stamps. The same is not true under TANF. TANF funds may be used to pay for shared systems only to the extent that the TANF program benefits from the systems, so they cannot cover common costs, but only a proportion of these costs in shared systems. As part of

[20]The Congress has asked GAO to review the APD and cost allocation requirements for information systems development for child support enforcement, child welfare, Medicaid, and the food stamp programs.

[21]The cost allocation plan for systems development is reviewed by each of the federal agencies that will finance the effort, and within HHS, by the various program divisions and the State System's Policy Division of the Administration for Children and Families. The plan for systems operations is reviewed by HHS's Division of Cost Allocation as outlined in Office of Management and Budget (OMB) Circular A-87.

[22]Cost allocation requirements are based on appropriations law at 31 U.S.C. 1301 (a) and further explained in OMB Circular A-87 and "A Guide for State, Local, and Indian Tribal Governments: Cost Principles and Procedures for Developing Cost Allocation Plans and Indirect Cost Rates for Agreements with the Federal Government," available at http://www.whitehouse.gov/omb/circulars/a087/a087-all.html and http://www.hhs.gov/grantsnet/state/index.htm.

the transition from AFDC to TANF, HHS requested that states submit new public assistance cost allocation plans that would take effect July 1999 for most states.

Some conference participants cited a need for more guidance or flexibility on acceptable cost allocation methodologies. In his presentation on the development of Utah's UWORKS project, Russell Smith said that obtaining approval for the cost allocation plan took considerably more time and effort than originally estimated. Utah State officials spent 6 months negotiating an acceptable cost allocation plan with federal officials for the project, which used funds from Labor's One Stop grants, TANF funds, and food stamp employment and training funds. Bill Cox identified inflexible cost allocation methodologies as a problem in his presentation on North Carolina's Business Process Reengineering Project. He said that while project costs are commonly allocated based on the size of program caseloads, the state did not think it was appropriate to use this basis for its reengineering project. He explained that while the state's TANF caseload has decreased in recent years, the size of the caseload does not accurately represent the amount of time that caseworkers actually spend on TANF cases. The state proposed using a cost allocation methodology based on the amount of time caseworkers spent on different programs and projects. However, while the CMS and the Food and Nutrition Service had no comments on this change in methods, the Administration for Children and Families did have reservations and indicated that the preferred method is caseloads, according to Cox. Cox also maintained that more guidance is needed with respect to appropriate cost allocation methodologies in complex projects with multiple phases.[23]

Obtaining Staff Expertise in Project Management and Information Technology

In their presentation, Software Productivity Consortium president Werner Schaer and State Information Technology Consortium president Bob Glasser highlighted project management as a key challenge for systems modernization.[24] They explained that in their extensive consulting work on a wide range of state information systems projects, the major problems they observed have involved issues other than technology. The primary

[23]For example, Cox raised the issue of how costs should be allocated in a project in which the first phase of development may benefit only a particular program, whereas the second phase benefits several programs.

[24]See web address in app. I for paper by Werner Schaer and Robert Glasser, "Lessons Learned Helping Organizations Make Smart Information Technology Decisions."

causes of these problems are a lack of wide-ranging management experience with information technology, a lack of management experience with large and complex systems, and insufficient user participation in project processes. They added that most firms that are dependent on software development for their core business have learned significant lessons about how to manage the development and deployment of large, complex software systems. Yet in their view, the states, as a general rule, are very early on this learning curve and could benefit from the lessons that the industry has learned. Information technology contractor representatives from HSITAG echoed these themes in their presentation. For example, they explained that HSITAG members have encountered situations in which states have chosen proven program managers but failed to provide training to help them become successful managers of information technology projects. HSITAG presenters emphasized that as systems projects grow to span multiple programs and increase in complexity, it is important to use proven methods for promoting regular communication among project stakeholders, predicting system impacts, and defining and achieving results. Georgia chief information officer Larry Singer commented that the project management challenges faced by states are similar to those described in GAO testimony on the information system challenges facing the federal government.[25]

Some states have found it difficult to attract and retain staff with the necessary expertise in information technology because these specialists command high salaries and technology is changing so rapidly.[26] For example, due to government salary limits, it is hard to compete for database analysts who can earn $150 to $200 an hour in the private sector, according to Russell Smith. Private contractors also may face staffing problems, lacking the expertise required for specific work they have agreed to undertake or reassigning experienced staff to other work before projects are completed.

[25]See U.S. General Accounting Office, *Electronic Government: Federal Initiatives Are Evolving Rapidly But They Face Significant Challenges* GAO/T-AIMD/GGD-00-179, (Washington, D.C.: 2000) and *Electronic Government: Challenges Must Be Addressed With Effective Leadership And Management* GAO-01-959T, (Washington, D.C.: 2001).

[26]GAO's prior work reported that states have encountered long-standing problems in recruiting and retaining information technology staff. See GAO/HEHS-00-48.

Participants Proposed Various Actions To Facilitate Systems Modernization

Conference participants identified numerous strategies to improve state information systems and facilitate service integration. By identifying broad roles that each of the following sectors could play—the Congress, federal agencies, states and localities, and information technology contractors—they affirmed that diverse groups can contribute to making progress in this area. In addition, participants developed more detailed proposals of actions that could be taken to address challenges for systems modernization and facilitate service integration. The majority of these proposals pertain to the challenges of enhancing collaboration among different levels of government and simplifying approval processes for obtaining federal funding.

Different Sectors Can Play Roles in Systems Modernization

Table 3 summarizes conference participants' suggestions about the roles that different sectors could play in facilitating systems modernization and some of the challenges associated with fulfilling these roles. For example, in addition to authorizing funding for systems demonstration projects, the Congress could play a broad supportive role in helping remove barriers and promoting systems modernization as it obtains additional knowledge of information systems trends and needs. A key challenge in fulfilling these roles is how organizations should target their efforts to better inform the Congress of needs and trends in this area. Beyond their roles as regulators, federal agencies could help states work together to develop information systems and share their models with other states. State and local governments, which are on the front lines of system design and operation, could facilitate progress by developing model information systems and testing innovative system linkages. Information technology contractors could use their unique perspectives and expertise to play a range of educational roles, such as helping states and localities improve their management of information systems projects.

Table 3: Potential Roles of Key Sectors in Facilitating Systems Modernization

Sector	Potential roles in facilitating systems modernization	Challenges in fulfilling these roles
Congress	Providing greater overall support by obtaining additional knowledge of information systems trends and needs, and the implications of federal legislation with respect to the need to modify information systems. Authorizing greater flexibility in the allocation of costs for information system projects. Authorizing funds for information system demonstration projects.	How to stimulate and maintain congressional interest in this technical area that will bridge turnover in congressional leadership and staff. How external organizations should target their efforts to better inform the Congress.
Federal agencies	Facilitating states working together in developing effective information systems and sharing their models with other states. Allowing states greater flexibility in developing information systems. Developing certification processes for state information systems.	How to provide or contract for technical assistance to states, given limited federal resources in this area.
State and local governments	Developing model, client-centered information systems. Testing innovative service delivery and information system links through demonstration projects.	How to disseminate information about these model systems to other states and localities. How to also meet other objectives, such as federal reporting requirements, while focusing on meeting client needs. How to maintain a base of expertise in information technology that can sustain projects through turnovers of agency staff and leadership.
Information technology contractors	Educating human service organizations about how information technology can help solve their problems. Contributing to improving state and local management of information systems projects. Serving as independent advisors to states and helping provide an overall vision for meeting their information systems needs. Serving as a third-party messenger to help obtain the support of state legislators or executive leadership for information systems projects.	How to overcome concerns about using public funds for information systems rather than program purposes. How information technology contractors, which are a community of competitors, can work together for the common good. How to overcome cultural differences between the private and public sectors so they can work together more effectively. How to avoid unrealistic expectations by clients about the development and capabilities of information systems.

Source: Small-group discussions of conference participants.

Conference Participants Offered Varied Proposals

Conference participants, working in small discussion groups, proposed numerous actions to address systems modernization and facilitate improvements in state information systems for human services. These proposals are summarized in table 4. The proposals vary in their scope and specificity, and also whether or not they would require legislative or regulatory changes to be implemented. Some of the proposals are described more fully in papers presented at the conference. However, the list of proposals does not represent a consensus of participants. Participants brought diverse perspectives to the issues examined at the

conference and did not have time to discuss each proposal in detail or systematically assess the merits or relative priorities of the various proposals. Nonetheless, this list of proposals represents a rich source of potentially useful ideas for improving the development of information systems for human services and thus merits further analysis and discussion.

Table 4: Actions Proposed by Conference Participants to Facilitate Systems Modernization

Enhancing strategic collaboration among federal, state, and local governments
• In light of upcoming reauthorizations for several programs, hold a congressional hearing on integrated information technology for human services.
• Focus attention of the Congressional Internet Caucus Advisory Committee on information technology needs in human services
• Inform federal and state political leaders about the positive impacts of information technology for the health and human services
• Create an institute for the management of human services information systems.
• Establish federally funded demonstration projects for information systems that seek to integrate state and local human services
• Shift the federal role in information systems management from that of a regulator to a facilitator
• Harmonize outcome measures across federal agencies toward common goals
• Develop measures of success for systems development that are related to serving customers and could be used for various systems
• Stagger federal deadlines for the implementation of required state information systems so not all states and their contractors face the same deadline
• Require that federal laws and regulations include a statement assessing their impact on costs for state information systems in line with Title II of the Unfunded Mandates Reform Act of 1995.
Simplifying the cumbersome approval process for obtaining federal funding
• In the short term, provide relief from APD requirements within current laws and regulations
• Replace the APD process with a process wherein states' plans for information systems become components of their broader program plans
• Replace the APD process with a process that relies on certification of state capacity to manage information systems,[b] whereby states that are certified receive less federal oversight and more flexibility.[c]
• Use a principled negotiation process to create a replacement for the APD process.[d]
• Create a federal block grant for human services information systems.
• Develop a new approach to cost allocation.
Obtaining staff expertise in project management and information technology
• Develop a set of best practices for the procurement of information technology contractors.
• Allow states to use state procurement rules in states that are certified.
• Develop a project management curriculum and certification process for health and human services professionals.
Miscellaneous
• Promote investment in Internet infrastructure.
• Develop and disseminate a repository of best practices of the use of technology in the health and human services.
• Design information systems with a focus on service delivery and let data and outcomes be a necessary byproduct.
• Eliminate the prohibition on the use of federal funds for proprietary applications software developed for human services programs.[e]

[a]For more information on this law, see U.S. General Accounting Office, *Unfunded Mandates: Reform Act Has Had Little Effect on Agencies' Rulemaking Actions* GAO/GGD-98-30, (Washington, D.C.: 1998).

[b]Carnegie Mellon University's Software Engineering Institute has developed several capability maturity models for assessing an agency's information technology strengths and weaknesses and developing plans for improvement. For more information on such models and an example of their application, see U.S. General Accounting Office, *Air Traffic Control: Immature Software Acquisition Processes Increase FAA System Acquisition Risks*, GAO/AIMD-97-47, (Washington, D.C.: 1997).

[c]This proposal is elaborated in the conference paper by Jerry Friedman and John Cuddy. See web address in app. I.

[d]As outlined in the conference paper by Friedman and Cuddy, principled negotiation is a process in which the relevant parties identify their underlying interests and work together to generate options that satisfy their interests.

[e]See 45 CFR Sec. 95.617 (a), (b), and (c) requiring that state or local governments have ownership rights to software, modifications, and associated documentation developed with federal funds. However, proprietary operating/vendor software packages that are provided at established catalog or market prices and sold or leased to the general public are not subject to these public ownership requirements. Federal funds are not available for proprietary applications software developed specifically for the public assistance programs covered under this subpart. A federal official at the conference explained that the prohibition is designed to prevent duplicate federal funding for software development.

Source: Small-group discussions of conference participants. Proposals may not represent the views of all or most participants in these groups.

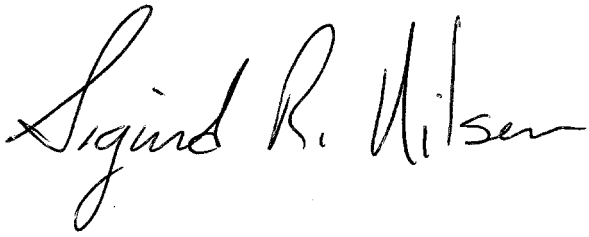
Many of the proposals pertain to enhancing strategic collaboration among different levels of government and these proposals present various approaches to this objective. For example, several proposals focus on informing federal or state political leaders about, and involving them in, issues related to systems modernization, such as by holding a congressional hearing on integrated information technology for human services. Other proposals would create a forum for intergovernmental collaboration by creating an institute for the management of human services information systems or establishing federally funded systems demonstration projects to integrate state and local services. Other proposals are intended to minimize the occurrence of perceived adverse effects on state information systems resulting from federal legislation.

The proposals related to improving the federal funding process also encompass a wide range of approaches, ranging from making incremental changes to the APD process to creating a federal block grant for human service information systems. Several proposals call for replacing the APD process—in one case with a process in which states' information systems plans would be reviewed as a component of their overall program plans and in another with a process based on states' certified capacity to manage information systems. Another proposal suggests a negotiating procedure that could be used to develop an acceptable replacement for the APD process.

There is an effort underway to implement changes to address one of the broad challenges identified by conference participants: simplifying the

approval process for obtaining federal funding. Partly in response to a recommendation in GAO's April 2000 report on information systems, a federal interagency group has been established and is focusing its attention on the APD process.[27] Rick Friedman of the CMS, who chairs the group, gave conference participants a status report on the work of the group. He said that the interagency group includes representatives from five HHS offices and the U.S. Department of Agriculture's' Food and Nutrition Service. The group has met several times to examine the APD process, has consulted with state officials, and has formulated some recommended changes, but the proposed changes have not been approved by the respective federal agencies.

We are sending copies of this report to appropriate congressional committees; the Secretary of Health and Human Services; the Secretary of Agriculture; the Secretary of Labor; and other interested parties. We will also make copies available to others on request. If you or your staff have any questions concerning this report, please call me at (202) 512- 7215. Other GAO contacts and staff acknowledgments for this report are listed in appendix III.



Sigurd Nilsen
Director, Education, Workforce and
Income Security Issues

[27]GAO recommended that a federal interagency group be established to identify, and develop implementation plans for, federal actions that would facilitate states' efforts to improve their information systems for federal programs that serve low-income families. The report said that the group should consider actions in several areas, such as disseminating information on best practices for managing information technology; reviewing, and modifying as needed, the APD process; and facilitating links among the automated systems used by different state and local agencies through such means as supporting demonstration projects and coordinating data reporting requirements for different programs. See GAO/HEHS-00-48.

List of Recipients

The Honorable Tom Harkin, Chairman
The Honorable Richard G. Lugar, Ranking Minority Member
Committee on Agriculture, Nutrition, and Forestry
United States Senate

The Honorable Max Baucus, Chairman
The Honorable Chuck Grassley, Ranking Minority Member
Committee on Finance
United States Senate

The Honorable Joseph I. Lieberman, Chairman
The Honorable Fred Thompson, Ranking Minority Member
Committee on Governmental Affairs
United States Senate

The Honorable Edward M. Kennedy, Chairman
The Honorable Judd Gregg, Ranking Minority Member,
Committee on Health, Education, Labor, and Pensions
United States Senate

The Honorable Larry Combest, Chairman
The Honorable Charles Stenholm, Ranking Member
Committee on Agriculture
House of Representatives

The Honorable John A. Boehner, Chairman
The Honorable George Miller, Ranking Member
Committee on Education and the Workforce
House of Representatives

The Honorable W. J. "Billy" Tauzin, Chairman
The Honorable John D. Dingell, Ranking Member
Committee on Energy and Commerce
House of Representatives

The Honorable Dan Burton, Chairman
The Honorable Henry A. Waxman, Ranking Member
Committee on Government Reform
House of Representatives

The Honorable Bill Thomas, Chairman
The Honorable Charles B. Rangel, Ranking Member
Committee on Ways and Means
House of Representatives

The Honorable Patrick Leahy, Co-Chair
The Honorable Conrad Burns, Co-Chair
The Honorable Robert Goodlatte, Co-Chair
The Honorable Rick Boucher, Co-Chair
U.S. Congressional Internet Caucus

Appendix I: Conference Agenda

Realizing The Promise Of Technology: A Conference On Modernizing Information Systems For Human Services

Sponsored by: U.S. General Accounting Office
The Nelson A. Rockefeller Institute of Government
National Health Policy Forum
Welfare Information Network (The Finance Project)
June 28 and 29, 2001 in Reston, Virginia

CONFERENCE OBJECTIVES

With its heightened emphasis on employment and time-limited assistance, welfare reform significantly expanded the information needed to support activities ranging from integrated service delivery by front-line caseworkers to program performance monitoring by administrators and oversight agencies. To meet such needs, automated systems must be able to share data across the numerous programs that serve low-income families, such as Temporary Assistance for Needy Families, Medicaid, child care, job training, vocational rehabilitation, and child welfare. For three years, members of the GAO / Rockefeller Institute Working Seminar on Social Program Information Systems have met regularly to study system capabilities, obstacles to modernization, and strategies to facilitate progress. In April 2000, GAO issued a report that identified major gaps in the capabilities of state automated systems to meet information needs for welfare reform.

This conference will build on prior work by providing diverse perspectives on key issues and options. To help develop a literature in this area, the presenters at this conference will write papers that we plan to publish, along with an overview of conference proceedings. Attendance will be by invitation only, and conference participants will include congressional staff, federal and state program and information technology managers, welfare researchers, information technology vendors, and others. A key objective will be to tap this collective expertise by having participants take part in breakout sessions each day. Participants will consider proposals for actions that could be taken in four key sectors to facilitate systems modernization: the Congress, federal agencies, states and localities, and information technology vendors. We will then determine the level of consensus for these proposals. By documenting current knowledge and highlighting collaboratively developed proposals—an action agenda—the report issued from this conference should provide the Congress, Administration, and states and localities with timely suggestions pertinent to the reauthorization of welfare.

AGENDA

JUNE 28

8:00-9:00 **CONTINENTAL BREAKFAST**

9:00-9:10 **WELCOME AND CONFERENCE OVERVIEW**
Cynthia Fagnoni, General Accounting Office (GAO), and Richard Nathan, Rockefeller Institute of Government

9:10-10:00 **THE NEED FOR SYSTEMS MODERNIZATION**
Chair: Barbara Blum, Research Forum on Children, Families, and the New Federalism

The Capabilities of State Automated Systems to Meet Information Needs in the Changing Landscape of Human Services
Andrew Sherrill, GAO
http://www.gao.gov/special.pubs/GAO-02-121/ap1.pdf
Briefing charts: *http://www.gao.gov/special.pubs/GAO-02-121/ap2.pdf*

The Need to Align Federal, State, and Local Technology Investments: A Local Perspective
Sandra Vargas, County Administrator, Hennepin County, Minnesota, and Cost is Toregas, Public Technology Incorporated
http://www.gao.gov/special.pubs/GAO-02-121/ap3.pdf

Reactor: Thomas Gais, Rockefeller Institute of Government

10:00-10:10 **Break**

10:10-12:00 **POSSIBLE APPROACHES FOR THE FUTURE**
Chair: Judith Moore, National Health Policy Forum

Re-engineering the Approach by Which the Federal Government Approves and Monitors the Creation of State Human Services Information Systems

Jerry Friedman, Texas Department of Human Services, and John Cuddy, Oregon Department of Human Resources
http://www.gao.gov/special.pubs/GAO-02-121/ap4.pdf

Briefing charts: *http://www.gao.gov/special.pubs/GAO-02-121/ap5.pdf*

Federalism and the Challenges of Improving Information Systems For Human Services
Richard Nathan and Mark Ragan, Rockefeller Institute of Government
http://www.gao.gov/special.pubs/GAO-02-121/ap6.pdf
Briefing charts: *http://www.gao.gov/special.pubs/GAO-02-121/ap7.pdf*

Innovations in Technology and Project Management Practices That Can Improve Human Services
Representatives from the Human Services Information Technology Advisory Group
http://www.gao.gov/special.pubs/GAO-02-121/ap8.pdf
Briefing charts: *http://www.gao.gov/special.pubs/GAO-02-121/ap9.pdf*

Lessons Learned Helping Organizations Make Smart Information Technology Decisions
Werner Schaer, Software Productivity Consortium, and Robert Glasser, State Information Technology Consortium
http://www.gao.gov/special.pubs/GAO-02-121/ap10.pdf
Briefing charts: *http://www.gao.gov/special.pubs/GAO-02-121/ap11.pdf*

Reactors: Joseph Leo, Science Applications International Corporation, and Bruce Eanet, Employment and Training Administration, U.S. Department of Labor

12:00-1:30 **LUNCH**

The Oregon Experience and Looking to the Future
Gary Weeks, Director of Human Services Reform, Annie E. Casey Foundation (former director of the Oregon Department of Human Resources)
http://www.rockinst.org/publications/pubs_and_reports.html

1:30-3:00 **BREAKOUT SESSIONS**

	Participants are divided into the following groups to discuss the historical involvement, role, and special challenges of that sector in facilitating systems modernization. Group 1: The Congress Moderator/Reporter: Elaine Ryan, American Public Human Services Association, and Gregory Benson, Rockefeller Institute of Government Group 2: Federal Agencies Moderator/Reporter: Rick Friedman, Centers for Medicare and Medicaid Services, and Richard Roper, The Roper Group, New Jersey Group 3: States and Localities Moderator/Reporter: Lorrie Tritch, Iowa Department of Human Services, and Michael Rich, Emory University Group 4: Information Technology Vendors Moderator/Reporter: Vicki Grant, Supporting Families After Welfare, and Robert Stauffer, Deloitte & Touche Consulting Group
3:00-3:15	**Break**
3:15-5:00	**PLENARY SESSION: REPORTS FROM BREAKOUT GROUPS AND DISCUSSION OF THEIR IDEAS** Discussion Leader: Barry Van Lare, Welfare Information Network
5:15-6:30	**RECEPTION**
6:30	**DINNER**

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8:00-9:00 **CONTINENTAL BREAKFAST**

9:00-10:35 **STATE AND LOCAL EXPERIENCES**
Chair: Sigurd Nilsen, GAO

Wisconsin's System Initiatives for Eligibility and Work-Based Programs
Paul Saeman, Wisconsin Department of Workforce Development *http://www.gao.gov/special.pubs/GAO-02-121/ap12.pdf*
Briefing charts: *http://www.gao.gov/special.pubs/GAO-02-121/ap13.pdf*
http://www.gao.gov/special.pubs/GAO-02-121/ap14.pdf
http://www.gao.gov/special.pubs/GAO-02-121/ap15.pdf

One Ease E-Link: New Jersey's Pursuit to Establish an Electronic, Multi-Tooled Network for the Delivery of Coordinated Social, Health And Employment Services
William Kowalski, New Jersey Department of Human Services
http://www.gao.gov/special.pubs/GAO-02-121/ap16.pdf
Briefing charts*: http://www.gao.gov/special.pubs/GAO-02-121/ap17.pdf*

Utah's Development of a One-Stop Operating System
Russell Smith, Utah Department of Workforce Services
http://www.gao.gov/special.pubs/GAO-02-121/ap18.pdf
Briefing charts*: http://www.gao.gov/special.pubs/GAO-02-121/ap19.pdf*

Reengineering Business Processes to Integrate the Delivery of Human Services in North Carolina
Bill Cox, North Carolina Department of Health and Human Services
http://www.gao.gov/special.pubs/GAO-02-121/ap20.pdf
Briefing charts*: http://www.gao.gov/special.pubs/GAO-02-121/ap21.pdf*

Reactor: Rachel Block, Centers for Medicare and Medicaid Services

10:35-10:45	**BREAK**
10:45-12:00	**BREAKOUT SESSIONS** Participants are divided into the same four groups in which they participated the previous day. Building on their previous discussions, they develop proposals for actions that could be taken to facilitate systems modernization. However, participants are not limited to any particular sector (e.g., federal agencies) in developing their proposals. Group 1 Moderator/Recorder: Sheri Steisel, National Conference of State Legislatures, and Jono Hildner, Hildner and Associates Group 2 Moderator/Reporter: Jan Lilja, Food and Nutrition Service, U.S. Department of Agriculture, and Eileen Sweeney, Center on Budget and Policy Priorities Group 3 Moderator/Reporter: Evelyn Ganzglass, National Governors' Association, and Costis Toregas, Public Technology Incorporated Group 4 Moderator/Reporter: Catherine Born, University of Maryland School of Social Work, and Mark Ragan, Rockefeller Institute of Government
12:00-1:00	**LUNCH**
1:00-2:30	**PLENARY SESSION: REPORTS FROM BREAKOUT GROUPS AND DISCUSSION OF THEIR PROPOSALS** Discussion Leader: Cynthia Fagnoni, GAO
2:30	**ADJOURN**

Appendix II: Conference Participants

Brenda Aguilar, Office of Information and Regulatory Affairs, U.S. Office of Management and Budget
Robin Arnold-Williams, Executive Director, Utah Department of Human Services
Gregory M. Benson, Jr., Executive Director, New York State Forum for Information Resource Management, Rockefeller Institute, State University of New York
Rachel Block, Deputy Director, Center for Medicaid and State Operations, U.S. Centers for Medicare and Medicaid Services
Barbara Blum, Director, Research Forum on Children, Families, and the New Federalism National Center for Children in Poverty, Columbia University
Catherine E. Born, Research Associate Professor, University of Maryland School of Social Work
Constance Brines, National Industry Director, Social Services, Oracle Service Industries (HSITAG)
Bart Broz, Executive Assistant, Office of Management Information Systems, Texas Department of Human Services
Elizabeth Caplick, Intern, Education, Workforce, and Income Security Issues, U.S. General Accounting Office
Jeremy Cox, Senior Analyst, Education, Workforce, and Income Security Issues, U.S. General Accounting Office
Bill Cox, Director, Division of Information Resource Management, North Carolina Department of Health and Human Services
John Cuddy, Chief Information Officer, Oregon Department of Human Resources
Colleen Daly, Director of Office of State Systems, U.S. Department of Health and Human Services
Randolph Desonia, Senior Research Associate, National Health Policy Forum
James T. Dimas, Senior Associate, Annie E. Casey Foundation
Marc Dreilinger, Director of MIS Planning, New York State Office of Temporary & Disability Assistance
Martin Dunning, Operations Manager, State and Local Government, Sun Microsystems, Inc. (HSITAG)
Bruce Eanet, Administrator for Technology and Information Services, Employment and Training Administration, U.S. Department of Labor
Patricia Elston, Senior Analyst, Education, Workforce, and Income Security Issues, U.S. General Accounting Office
Cynthia M. Fagnoni, Managing Director, Education, Workforce, and Income Security Issues, U.S. General Accounting Office
Gene Falk, Specialist in Social Legislation, Congressional Research Service, The Library of Congress
Jerry Friedman, Executive Director, American Public Human Services Association
Rick Friedman, Director, Division of State Systems, U.S. Centers for Medicare and Medicaid Services
Thomas Gais, Director, Federalism Research Group, Rockefeller Institute, State University of New York
Evelyn Ganzglass, Director, Employment and Social Services Policy Studies, National Governors' Association Center on Best Practices
Robert Glasser, President, State Information Technology Consortium
Melinda Gish, Analyst in Social Legislation, Congressional Research Service, The Library of Congress
Vicki Grant, Deputy Director, Supporting Families After Welfare
Gale Harris, Assistant Director, Education, Workforce, and Income Security Issues, U.S. General Accounting Office
Norman Heyl, Senior Information Systems Analyst, Information Technology, U.S. General Accounting Office
Jono Hildner, President, Hildner and Associates
Sean Hurley, Director, Data Collection and Analysis Division, Administration for Children and Families-OPRE U.S. Department of Health and Human Services
Judy Miller Jones, Director, National Health Policy Forum
April Kaplan, Program Manager, Welfare Information Network, The Finance Project
Rachel Kelly, Analyst in Social Legislation, Congressional Research Service, The Library of Congress
William G. Kowalski, Director, One Ease-E Link, New Jersey Department of Human Services
Linda Lambert, Assistant Director, Information Technology, U.S. General Accounting Office

Brenda Aguilar, Office of Information and Regulatory Affairs, U.S. Office of Management and Budget
Erin Lee, Program Director for Information Technology, National Governors' Association
Joseph J. Leo, Vice President, Civilian Government Programs, Science Applications International Corporation
Susan Lerman, Senior Principal, AMS (HSITAG)
Janice G. Lilja, Acting Deputy Administrator for Management, Food and Nutrition Service, U.S. Department of Agriculture
Judith Moore, Co-Director, National Health Policy Forum
Richard Nathan, Director, Rockefeller Institute of Government, State University of New York
Zoe Neuberger, Policy Analyst, Center on Budget and Policy Priorities
Sigurd Nilsen, Director, Education, Workforce, and Income Security Issues, U.S. General Accounting Office
Lee Posey, Policy Specialist, National Conference of State Legislatures
Mark Ragan, Senior Fellow, Rockefeller Institute, State University of New York
Michael Rich, Professor, Emory University
Richard Roper, President, The Roper Group
Elaine Ryan, Director of Governmental Affairs, American Public Human Services Association
Paul Saeman, Acting Director, Workforce Information Bureau, Wisconsin Department of Workforce Development
Sandra C. Salter, Manager of Information Systems Unit, Delaware Department of Health and Social Services
Werner Schaer, President and CEO, Software Productivity Consortium
Suzanne Scherr, Industry Solutions Executive, Electronic Data Systems (HSITAG)
Melissa Seeley, Intern, U.S. Office of Management and Budget
Andrew Sherrill, Assistant Director, Education, Workforce, and Income Security Issues , U.S. General Accounting Office
Bard Shollenberger, Director of Government Relations, Children and Family Services, Lockheed-Martin/IMS
Larry Singer, Chief Information Officer, State of Georgia
Russell Smith, Deputy Director, Workforce Information Technology, Utah Department of Workforce Services
Reuben Snipper, Statistician/Policy Analyst, Office of Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services
Robert Stauffer, Deloitte Consulting (HSITAG)
Shay Stautz, Staff Director, National Association of State Chief Information Officers
Rae Ann Steinly, Information Systems Specialist, American Public Human Services Association
Sheri Steisel, Senior Director, Human Services Committee, National Conference of State Legislatures
Eileen Sweeney, Director of State Low-Income Initiatives Project, Center on Budget and Policy Priorities
Costis Toregas, President, Public Technology Incorporated
Lorrie Tritch, Deputy Director for Administration, Iowa Department of Human Services
Barry Van Lare, Executive Director, Welfare Information Network
Sandra Vargas, County Administrator, Hennepin County, Minnesota
Gary Weeks, Director of Human Services Reform, Annie E. Casey Foundation
Matt Weidinger, Staff Director, Ways and Means Subcommittee on Human Resources U.S. House of Representatives

Appendix III:GAO Contacts and Staff Acknowledgments

GAO Contacts

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Staff Acknowledgments

Elizabeth Caplick also helped arrange the conference that resulted in this report.

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