

Appendix D

Executive Branch Telemedicine Activities

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In September 1993, the Clinton Administration published its *Agenda for Action* report, outlining its vision of the National Information Infrastructure (NII) and specific actions the government would take.¹ By Executive Order 12864, the President appointed the Information Infrastructure Task Force (IITF), under the direction of the Secretary of Commerce. The IITF is comprised of high-level representatives of the federal agencies that play a role in developing and applying information and telecommunications technologies, including independent agencies and commissions such as the Federal Communications Commission. The President also appointed the Advisory Council on the NII, which broadly represents the key constituencies affected by the NII (business, labor, academia, public interest groups, and state and local governments).²

The IITF's Committee on Applications and Technology coordinates efforts to develop, demonstrate, and promote applications of the NII and develops and recommends technology strategy and policy to accelerate its implementation. One of the subgroups of the Health Information and Applications Working Group is responsible for telemedicine. The purpose of the telemedicine subgroup is to promote the efficient, effective use of telemedicine in the delivery of health care services through the coordination of federal resources and policies. In August 1994, the IITF Health In-

¹Information Infrastructure Task Force, "The National Information Infrastructure: Agenda for Action," National Telecommunications and Information Administration, Washington, DC, Sept. 15, 1993.

²NII Principles and Actions: A Checklist of the Clinton Administration's Progress, September 1993-94, September 1994, p. 3.

formation and Applications Working Group convened a meeting of experts to devise a policy strategy for telemedicine. In April 1995, a report of the conference's conclusions and recommendations was released.³

In March 1995, Vice President Al Gore requested the Department of Health and Human Services (DHHS) to lead an interagency effort to address and resolve major policy issues involved in the NII and the health sector.⁴ This effort is to be coordinated with the ongoing work of the Information Infrastructure Task Force. With respect to telemedicine, DHHS was asked to prepare a report on current telemedicine projects, the range of potential telemedicine applications, and public and private actions to promote telemedicine and to remove existing barriers to its use.

The federal government has funded a number of pilot projects in telemedicine over the past 30 years. There is currently a good deal of interest in and funding for both demonstration projects and evaluation projects, although proposed budget cutbacks could have a significant negative effect on funding for telemedicine projects. A sample of executive branch telemedicine activities is provided below.

DEPARTMENT OF HEALTH AND HUMAN SERVICES

The *Office of Rural Health Policy* (ORHP), in the Health Resources and Services Administration, has been involved in telemedicine for more than 5 years, mainly providing grant funding for demonstration projects. These have included Texas Tech University (in cooperation with the Health Care Financing Administration and the Assistant

Secretary for Planning and Evaluation), West Virginia University's Robert C. Byrd Health Sciences Center in Morgantown, and RODEO NET in Oregon (described in chapter 5). ORHP sponsored a workshop in November 1993 to explore major telemedicine policy issues and the role of telemedicine systems in rural health care network development. Conference deliberations resulted in the publication of the report, *Reaching Rural*.⁵

In November 1994, ORHP awarded three-year grants totaling \$4.5 million to support 11 telemedicine projects in 10 states. These were awarded under the Rural Telemedicine Grant Program, and will demonstrate the use of telemedicine as part of rural health network development and provide a baseline of information for conducting a systematic evaluation of telemedicine systems serving rural areas. Cost participation was required on the part of grantees. In addition, continuation funding of \$800,000 was granted to the Robert C. Byrd Health Sciences Center telemedicine pilot project in West Virginia. In the fall of 1994, ORHP also awarded a grant for an 18-month evaluation of telemedicine projects.

The *Health Care Financing Administration* (HCFA) is a key player in telemedicine in terms of developing policies for Medicare and Medicaid reimbursement of telemedicine services. The agency has supported several research projects in telemedicine, most notably at Texas Tech University (with the Assistant Secretary for Planning and Evaluation and ORHP) and Iowa Methodist Hospital in Des Moines. HCFA also supported the University of Colorado's Center for Health Policy Research in a study to develop a framework for

³*Report of the Working Conference on Telemedicine Policy for the NII*, sponsored by the Health Information and Application Working Group of the IITF Committee on Applications and Technology and the Senate/House Ad Hoc Steering Committee on Telemedicine and Health Care Informatics, April 1995.

⁴Vice President Al Gore, memorandum to Donna Shalala, Secretary of Health and Human Services, Washington, DC, Mar. 8, 1995.

⁵*Reaching Rural*, Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service, Department of Health and Human Services, 1994.

evaluating various types of telemedicine.⁶ In the summer of 1994, new grants were awarded as part of a congressionally supported research and demonstration program. HCFA provided startup funding for the Clinical Telemedicine Cooperative Group, an ad hoc alliance to share common telemedicine research protocols and testing methodologies; it also provided some startup funding for the Telemedicine Information Exchange (TIE), a database established at the Telemedicine Research Center, Oregon Health Sciences University. HCFA is also providing some of the support for the Institute of Medicine's study of evaluation criteria for telemedicine.

The National Library of Medicine (NLM), through the High Performance Computing and Communications Program (HPCC), funds applications research in a number of areas, including telemedicine. For example, the National Laboratory for the Study of Rural Telemedicine at the University of Iowa has recently received a three-year grant of \$7.3 million to test the use of Iowa's fiberoptic network to link medical facilities and libraries at the University to hospitals, clinics, and perhaps doctors' offices, throughout the state. Oregon Health Sciences University, University of Pittsburgh, and West Virginia University also received funding for telemedicine projects from the HPCC Health Care Awards. NLM is the principal funder of an Institute of Medicine study under way on criteria for evaluation of telemedicine projects. NLM has also compiled a telemedicine bibliography containing more than 1,600 citations that is also available on the Internet.⁷

The *Agency for Health Care Policy and Research (AHCPR)* helped to support the develop-

ment of telemetry (transmitting electrocardiograms and vital signs), and telemedicine (including the early NASA STARPAHC project on the Papago Indian Reservation in Arizona). It has also provided support for meetings on telemedicine.

DEPARTMENT OF AGRICULTURE

The *Rural Utilities Service (RUS)* (formerly the Rural Electrification Administration) sponsors the Distance Learning and Medical Link Grant Program, which demonstrates the ability of rural communities to utilize existing or proposed telecommunications systems to achieve sustainable, cost-effective distance learning or medical-link networks. Implemented in fiscal year 1993, a total of \$20 million in funding has been committed to a total of 61 projects. Approximately 20 of these are primarily medical links and a majority have some health-related aspects. For fiscal year 1995, a total of \$7.5 million is available to fund \$75 million in applications from about 250 applicants.⁸ For Medical Link Projects, RUS funds equipment used in physician consultation, teleradiology, and educating rural health care providers. Some of the equipment includes teleradiology workstations, x-ray scanners, and digital microscopes, as well as distance-learning equipment such as encoding and decoding devices, specialized cameras and video monitors, video switchers, microphone mixers, computers, and local area networking equipment.

DEPARTMENT OF COMMERCE

In October 1994, the *National Telecommunications and Information Administration (NTIA)*, through its Telecommunications and Information

⁶The Center for Health Policy Research, Denver, CO, produced four reports for HCFA. Jim Grigsby et al., *Analysis of Expansion of Access to Care Through Use of Telemedicine and Mobile Health Services: 1) Literature Review and Analytic Framework*, December 1993; 2) *Telemedicine Policy: Quality Assurance, Utilization Review, and Coverage*, August 1994; 3) *Study Summary and Recommendations for Further Research*, December 1994; and 4) *Telemedicine Policy: Coverage and Payment*, February 1995.

⁷"Telemedicine: Past, Present, and Future, January 1966 through March 1995," Current Bibliographies in Medicine, CBM No. 95-4, National Library of Medicine, U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, Bethesda, MD. Internet access through FTP to nlmpubs.nlm.nih.gov and login as anonymous.

⁸J.R. Binder, Director, Rural Development Assistance Staff, Rural Utilities Service, personal communication, May 10, 1995.

Infrastructure Assistance Program (TIIAP), awarded more than \$24 million for fiscal year 1994 to support the development of the NII. A total of 14 of 92 grants were for planning and demonstration projects that are designed to develop, demonstrate, and promote applications of information technology that will educate, restrain health care costs, improve quality, and increase access to health care with the potential for wide-scale deployment and interconnection over NII networks. Grantees were required to provide matching funds.

DEPARTMENT OF DEFENSE (DOD)

The Medical Research and Materiel Command, Fort Detrick, is conducting several telemedicine and teleradiology projects in cooperation with other branches of the military and various universities. The Walter Reed Army Medical Center (WRAMC) has successfully employed telemedicine in Somalia, Croatia, Macedonia, and Haiti. WRAMC is also working with several southern states to develop peacetime clinic and hospital consultation procedures. The Center has also taken the lead with the Uniformed Services University of the Health Sciences in establishing a military telemedicine initiative to provide retrospective and prospective evaluations of the various projects.

The Medical Diagnostic Imaging Support (MDIS) system, developed by DOD based on the commercial Picture Archiving and Communication System (PACs), is employed in several teleradiology networks that use satellites as well as land lines to connect military treatment facilities with each other and with ambulatory clinics and university medical centers throughout the world. These projects include the Hilltop Plan (based on four central sites in the United States and Korea), the AKAMAI project (linking Tripler Army Medical Center in Hawaii with several sites around the Pacific Rim), and Project Daybreak (linking sev-

eral remote sites in Korea with Tripler as well as the central site in Seoul). Future plans envision integration of MDIS with other health care information systems, including computer-assisted diagnosis programs, multimedia devices, and reference databases.

Other branches of the military are also using a variety of telemedicine systems to better meet their needs to deliver health care to their members in a variety of settings. The Tri-Service Telemedicine Testbed Project, established in September 1994, provides a plan for guiding the Testbed Project and integrating telemedicine technologies into the Military Health Services System. This action also implemented the National Digital Telemedicine Testbed initiative of the DOD National Performance Review. In July 1995, the Army Medical and Materiel Development Command and the ISIS Center, Georgetown University Medical Center, co-sponsored a meeting to develop approaches for DOD technology assessment and evaluation of telemedicine.⁹

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)

NASA has had a long-term involvement in telemedicine activities. The agency is interested in telemedicine for medical care in space for future long-duration space platforms and to minimize risk to astronauts. NASA was involved in the early STARPAHC Program, as well as the Spacebridge to Armenia, which provided consultations via satellite to a disaster area in 1988. NASA was recently involved in a joint effort with Russia, the Spacebridge to Moscow, to link several U.S. medical centers with a hospital in Moscow. The agency also participated with the Mayo Clinic in a telemedicine feasibility study with the Pine Ridge Indian Reservation in 1994. In September 1994, NASA joined with the Uniformed Services University of the Health Sciences in sponsoring the Second International Conference on Teleme-

⁹The Chestertown Roundtable, "Developing Approaches for DOD Technology Assessment and Evaluation of Telemedicine," Chestertown, MD, July 30-August 1, 1995.

dicine: Remote Health Care and Disaster Response.¹⁰

DEPARTMENT OF VETERANS AFFAIRS (VA)

The VA is testing the use of its electronic mail systems for teleconsultation. This system handles text, images, voice, scanned documents, electrocardiogram signals, and patients' reports. Using the VA's wide area network, this capability will allow consultations between physicians at different VA locations. The Birmingham (AL) VAMC plans to purchase videoconferencing equipment for all VA medical centers in Alabama. This equipment will be placed in the treatment areas of

the hospitals. Physicians will be able to consult with specialists prior to transporting patients for specialty care, including discussing x-rays and other pertinent medical data. The patient will also be able to participate in these discussions, if feasible and medically advisable. It is believed that this will greatly reduce the number of patients needing to be transported for care, and will also serve as an education tool for physicians. Also, the Tuscaloosa VAMC has transmitted radiology images to the Birmingham VAMC for reading by the radiologist in residence. The VA is also a supporter of the Institute of Medicine study of evaluation criteria for telemedicine.

¹⁰The conference proceedings are published in three special issues of the *Journal of Medical Systems*, vol. 19, No. 1, February 1995; vol. 19, No. 2, April 1995; and vol. 19, No. 3, June 1995.