The C. Everett Koop Institute

MAPPING THE HEALTH INFORMATION INFRASTRUCTURE (HII)
October 1994

Summary:

The purpose of this project is to develop and distribute a runtime geographic information system (GIS) database with a supporting book of plates of the HII. The outcome will aid businesses, policy makers and administrators in tracking and visualizing the national distribution of HII demonstrations, pilots, testbeds, and infrastructure development projects. The GIS system will assist both public and private sector institutions in planning their HII development efforts based on the current HII activities and an understanding of the HII as a whole. The four elements that will initially be captured are: 1) geography; 2) technology; 3) functional health application area; and 4) target populations. The first release is planned for August of 1995.

Project Stages:

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   The Koop Institute is working with ARPA, ESRI and consultants to define the scope and technical steps of the project.

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   An interdisciplinary team will be responsible to:

   a) identify present and projected sources of information about HII projects
   b) identify available and projected technology
   c) identify technology vendors
   d) identify domain experts and input staff to build the GIS

3. Develop 10 to 20 conceptual plates for HII Consortium.

4. Survey Data:

   Appropriate data will be collected, analyzed and synthesized. The Koop Institute's private sector HII Consortium is a key source of secondary data. The interagency task force will also be able to assemble government sponsored activities. Dr. John Silva has recommended utilizing his Health Information Application Working Group which is part of the Information Infrastructure Task Force chaired by Secretary Brown. Other important sources of information and assistance include the various national centers for GIS technology such as the Urban and Regional Information Systems Association, and the supporting health information centers such as the New Media Projects branch of the Public Health Service.

5. Obtain Project Equipment:

   Off-the-shelf commercial technology will be used to minimize cost and optimize distribution of the final product.

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   Design and implement appropriate database and GIS logic mapping to support current and future data.

7. Develop Book of Plates:

   Design and implement appropriate book of plates (icons, color coding, etc.) to support current and future data.

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   Design and implement end-user loadable version of product (PC and MAC).

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   Develop and implement a "product" strategy for packaging, updates, quality control, distribution, and maintenance.

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    a) mapping health status for Healthy People 2000
    b) integrating with a dynamic simulation of the evolution of the HII marketplace

Conclusion:

It is the intention of the HII MAPPING Project to help businesses, policy makers and administrators better understand the current and future activities incorporating information systems to improve health. Initially, we believe it will help decision makersto visualize the geographies, technologies, functional health areas and target populations involved with these activities.

For example, an administrator responsible for a rural health plan may begin his/her research by viewing a map of U.S. telemedicine projects (color and icon coded that describes the subclassification area of telemedicine and level of maturity of each project), and then "double clicking" on a specific project to receive information on the developers, administrators and evaluators of the information system complete with specific contact information.

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The Health Information Infrastructure Consortium

Executive Summary

Landmark changes in telecommunications and the American health system are providing extraordinary opportunities within the emerging health information marketplace. However, public policy in this area is still ill-defined and many barriers and hurdles must be overcome by both the public and private sectors in order to optimize the health of Americans through the health information infrastructure. The Koop Foundation, acting on the request of Vice President Gore, formed a private sector consortium in December of 1993 in order to ensure the full implementation of the Health component of the National Information Infrastructure.

Background

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The health information infrastructure will make profound contributions to medical cost savings, access, and quality of care, if properly designed and implemented. Given the high level of collaboration required to optimize the HII, Vice President Gore has requested that the Koop Foundation bring together key leaders in the private sector to form the Health Information Infrastructure Consortium. This private sector Consortium will work in conjunction with a governmental interagency working group called the Health Information Applications Working Group of the Information Infrastructure Task Force (IITF). Together these public and private sector bodies will envision the use of the National Information Infrastructure for improving the health of Americans and explore the policy and marketplace issues which will enable the health information

infrastructure to reach its potential.

HII Elements

Seven elements of the national health information infrastructure must be enabled in order to optimize the functioning of the American health system:

* Administrative Information Systems
* Clinical Information Systems
* Educational Information Systems
* Telemedicine
* Personal Health Information Systems
* Population Databases and System Coordination
* Community Networks

All of these elements must be seamlessly connected and interoperable, while assuring quality, security, and privacy. Standards must be developed and evolve with the progress of the technology, medical knowledge, and the public's expectation. The policy environment must be designed to encourage the full development of the health information marketplace. It must stimulate investment and innovation by the private sector and encourage competition because the private sector will inevitably fund, build, operate, and maintain the vast majority of the health information infrastructure.

In addition to enabling a fully competitive marketplace, there is a need to have mechanisms amongst private sector players as well as between the public and private sectors which help to remove barriers and optimize the health information infrastructure. The HII Consortium will be a key mechanism for merging the public/private sector visions and for private sector companies, who are often direct competitors, to work on issues of common benefit. A high degree of collaboration on issues of common concern will be a prerequisite for success in the health information infrastructure because of need for an ever increasing degree of integration in the era of the intelligent network ahead.

The Koop Foundation's Involvement in Health Informatics

The C. Everett Koop Foundation is assembling some of the country's top experts in health informatics in order to develop the vision and build an implementation strategy for the health information infrastructure. In addition to its initiatives in redesigning the American medical education for the 21st century, the Koop Foundation will engage in four major directives in developing the health information infrastructure.

1) HII Consortium (national policy and marketplace development)

2) Pilots (Local, Regional, National, and International)

3) Research and Development

4) Assistance on Network Applications Development

Consortium Activities

The Koop Foundation will be administering nine activity areas in association with the consortium:

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A dynamic model of the HII and its marketplace has been proposed to test the outcomes of different public policy initiatives and the interaction of various private sector contributions. In the first phase of this project a geographic information system will be used to map the major health information infrastructure activities now underway. Ultimately, fitness landscape simulations will allow businesses, policy makers, and administrators to explore the dynamics and interactions associated with different levels of investment, government intervention, and development in different parts of the health information infrastructure. Special emphasis will be placed on identifying economic and social enabling factors (e.g., telemedicine service reimbursement schemes, cross-state telemedicine licensure) in the diffusion of key health-oriented telecommunications applications.

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This consortium will meet two to four times per year as a group as well as interact in a collaboratory on an ongoing basis asynchronously. Its membership consists of approximately forty top executives from computing, telecommunications and the health sector. The Consortium will also convene subcommittees (e.g., HII marketplace, regulations, legislation, standards, privacy, interoperability, quality assurance) to explore key opportunities and barriers to the full implementation of the health information infrastructure. A subcommittee of this private sector consortium will meet semi-annually with the interagency HII task force (affiliated with the Information Infrastructure Task Force) in order to foster a common public/private vision and strategize optimal implementation.

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HII Leadership Awards

Each year, the Koop Foundation will provide awards to companies making substantive contributions to the development of the Health Information Infrastructure or who have produced and marketed outstanding health informatics applications. The purpose of the HII Awards is two fold: 1) to reward innovation; and 2) to publicize the evolution of the health-oriented telecommunications and computing applications.

Key Koop Foundation Personnel

C. Everett Koop, M.D.	Medical Director and Senior Scholar
David Serra, J.D.	Administrative Director
Michael D. McDonald, Dr.P.H.	Director of Health & Telecommunications
Alexander Sloan, M.D.	Project Executive

David Taylor	General Counsel
Doug Foellmer	Chief Financial Officer
Art Schiller	Health Information Network Specialist
Jane Preston	Telemedicine Advisor
James Dickson, M.D.	HII Advisor
Joseph Rosen, M.D.	Research Advisor
Joseph Henderson, M.D.	Multimedia and Research Advisor
Clarence Pearson	Health Business Sector
John Kelso	Management Advisor

Legal Status, Affiliations, and Facilities

The C. Everett Koop Foundation is a separate nonprofit (501C3) foundation overseeing the management of its health information infrastructure initiatives. The Koop Foundation is associated with the C. Everett Koop Institute, which is affiliated with, and has offices at, Dartmouth College. The Koop Foundation HII activities are managed from its Washington D.C. area offices. The Koop Foundation is developing an advanced interactive communications system to form a virtual institute linking centers of excellence in health informatics nationally and internationally.

Koop Foundation and HII Consortium Resources

The C. Everett Koop Foundation is funded from private foundations and public grants and contracts, as well as from revenues from health information infrastructure directives and activities. The C. Everett Koop Institute is funded by public and private sector grants and contracts, affiliated with medical education and other health-related activities.

THE VICE PRESIDENT
WASHINGTON

March 8, 1995

MEMORANDUM TO DONNA SHALALA
SECRETARY OF HEALTH AND HUMAN SERVICES

FROM: AL GORE

SUBJECT: PROPOSED AGENDA FOR PROMOTING HEALTH CARE APPLICATIONS OF THE NATIONAL INFORMATION INFRASTRUCTURE

As you know, new information and communications technologies will have a pervasive impact on the way we work, learn, live and communicate with each other. The emerging National Information Infrastructure will eventually allow Americans to send and receive voice, video, images, and data with the same ease as we use telephones today.

Although the health sector is highly information-intensive, it has not capitalized on computers and information networks to the same extent as other sectors of the economy. Applications such as automated claims and payment transactions, telemedicine, computer-based patient records, and on-line access to the latest treatment and prevention information will help improve quality, expand access, and contain costs.

To accelerate the progress towards an efficient, useful, and accessible health information system, I would like the Department of Health and Human Services to lead an inter-agency effort to address and resolve the major policy issues discussed below. This effort should include representatives from Commerce, Defense, NASA, Veterans Affairs, and the Office of Management and Budget. It should also coordinate with the Administration's Information Infrastructure Task Force and build on the work of the IITF Privacy and Health Information Applications working groups. Because the private sector will take the lead in deploying, owning, and operating much of our nation's health information system, extensive consultation with the private sector will also be necessary.

Based on the Administration's work to date on health care applications of the NII and the public comments we have received, I believe that progress must be made in the following four areas: health data standards, privacy, health information for consumers, and telemedicine.

Health Data Standards

There is a developing consensus that everyone -- consumers, industry, policy makers -- would be better served by more uniform, shared standards for collection and transmission of health information. HHS has a unique opportunity to help create a national forum for the collaboration of all interested parties, with the long-term goal of increasing the interoperability of diverse health information systems. Such a forum could accelerate the development of a national health information infrastructure that dramatically reduces data collection and paperwork burdens and allows for multiple uses of data, while protecting the privacy of individuals.

The Department, together with a federal advisory committee on health information systems, should address the following questions:

- What short-term actions can the federal government take in developing its own health information systems to facilitate the development of uniform data standards that meet the needs of all users?
- How can computer networks such as the Internet be used to accelerate the adoption of health information standards?
- How can HHS ensure that the Medicare Transaction System is fully compatible with the multiple health uses of the NII?
- What are the long-term activities the federal government can undertake to facilitate the evolution of public and private health information systems toward common data standards?
- How can we promote demonstrations, based on public-private partnerships, that facilitate the development and adoption of standards?

The general steps identified in response to each of these questions should be taken, as appropriate, in the other policy areas as well (for example, identification of short- and long-term federal actions to promote policy goals; use of the Internet to catalogue existing activities; and demonstration projects).

Privacy

A cornerstone for health applications of the NII must be strong privacy protection. Existing state and federal laws are not equipped to handle privacy and confidentiality in an electronic environment. The privacy policies of institutions that hold health information are of varying efficacy. Privacy policies should have procedural components (for example, determining who requires access for a given purpose) and technological components (for example, audit trails and encryption).

Accordingly, the Department should develop model institutional privacy policies and model state laws for health information. These models should be consistent with the privacy principles developed by the IITF working group and informed by the advisory committee. A starting point for model institutional policies should be the most cost-effective policies in use in the private sector today. The model state laws should be designed to assist state legislatures, which will be struggling with these issues over the next few years.

The Administration should also consider what type of federal framework is needed to support these models. The framework could range from federal legislation to ideas for evaluating the efficacy of the suggested models.

Enhanced Health Information for Consumers

The NII presents nearly unlimited opportunities to make information on health, medical care, and health insurance available to consumers. HHS is already involved in health-related information sharing activities, such as dissemination of AHCPR guidelines and distribution of information about Medicare. The federal government is one of the largest health information disseminators. Like most federal dissemination it tends to be one-way broadcasting of information through more traditional channels of communication -- that is, written or oral. Electronic communications can help us reinvent our existing activities. For example, by using Internet technology such as the World Wide Web, the federal government could help create a "virtual library" on a wide range of health-related topics. Multimedia kiosks may also be an effective means of disseminating consumer health information.

The Department should develop recommendations for federal activities to provide enhanced health information to consumers through the NII. These recommendations should avoid the development of new stand-alone dissemination networks, and should instead build upon existing networked capabilities.

Telemedicine

Telemedicine holds remarkable promise for extending the benefits of medical progress to underserved areas, speeding medical intervention in emergencies or on the battlefield, improving medical education, and many other applications. At the same time, there are barriers to numerous applications of telemedicine (such as state credentialing requirements for physicians and reimbursement policies).

The Department should 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.

* * * *

I know that good work in all of these areas is already underway at HHS. I would like you to consolidate these efforts into a coherent strategy that is coordinated with other agencies and pays particular attention to an enhanced private-sector and state role.

Given the role that information and communications technologies can play in expanding access, increasing quality, and containing costs, I think it is imperative that the Department commit to making significant progress on these issues in the next year. Please keep me informed of your progress with a six- and twelve-month report and notices of significant achievements as they occur.

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Realizing the Potential of Health Information Technology for People and Communities

In the decade ahead, our nation faces unprecedented economic and demographic challenges. Our population is aging at the same time we are facing overwhelming budgetary and public pressures to contain health care costs, while the demand still increases for improved quality and access. The combination of innovative health services and the use of advances in information technologies has great potential for effectively addressing these seemingly contradictory pressures. This meeting, if it establishes the beginnings of a public/private sector vision and generates clear action steps, can take us to the next level in our efforts to solve these conflicting goals.

In an environment in which we are all committed to eliminating our Federal deficit, we must find ways of doing more with less, by working smarter, engaging new innovations, and drawing upon the still untapped strengths in the American public. Over the past two decades, computer and technologies have transformed many sectors of American society. Every 18 months to 2 years, the price of computing power drops in half. In fact, American children now have access to more computing power in their personal computers and game machines than was accessible to only the world's largest corporations a little more than decade ago. Over the next few years, these improvements will continue and will bring interactive multimedia

capability into your home, our schools, and the workplace.

Health information products and services are already improving quality and access to health care, while reducing the costs of health services. The health information infrastructure is essentially the nervous system for the nation's health system. Today, this nervous system is still only partially formed, yet it is becoming even more critical given that market-based reform has few controls and many avenues which could decrease quality and access under the pressure of reducing costs. For example, we are still not capturing and analyzing the basic data which will allow us to evaluate whether present changes in health care are improving or worsening the health status of Americans.

The contributions of the health information infrastructure (HII), of course, do not end with just administrative simplification, that is -- electronic claims forms, reducing paperwork, and evaluating the impact of changing the mechanisms for financing health care. An effective HII can provide better avenues for educating physicians and nurses, such as through clinical simulations and instant access to the world's medical literature. This is important not only during the time of formal medical training, but becomes even more valuable by providing just-in-time information and training, even out in the remotest areas of the country throughout a clinician's practicing life.

As interoperable health care information systems become common tools in the everyday practice of medicine, clinical decision-making will be enhanced and medical outcomes will be improved, while unnecessary waste due to redundancy and inefficiencies declines. For example, in the case of a 74 year old grandmother with

multiple health problems, who is seeing several different specialists, it is not uncommon for her to experience adverse drug effects compromising her health. Through integrated pharmaceutical care tracked with the help of health information networks, compliance is improved and conflicting therapeutic approaches are dramatically reduced. As a result, unnecessary hospitalizations are avoided and costs drop, while quality of life improves.

Telemedicine can bring some of the capabilities of the advanced medical center out to the generalist in remote practice combined with improved communications amongst colleagues, and help to encourage and enable clinicians to remain in practice in underserved areas. Personal health information systems empower the public to make better decisions regarding their own health. These systems, which will soon be providing millions of Americans access to health information and decision-support through their televisions, computers, personal data assistants promise to greatly improve health status through prevention, health promotion, and self care, as well as to save tens of billions of dollars per year through demand management. In addition, information systems, such as the Centers for Disease Control's INPHO, are allowing clinicians, public health workers, and policy makers access to aggregated health information -- absent personal identifiers to protect confidentiality -- in order to fight epidemics and endemic disease (disease present at all times) in populations.

Much of health and human prosperity is dependent upon the psycho-social elements impacting individuals and the family and community that surround them. The problems such as teenage pregnancy, drug abuse, gun violence -- which impact the health of Americans so greatly -- can not be fixed in a doctor's office alone. They

cannot be solved by centralized government alone. They must be addressed by empowering the people most affected by these problems, and their advocates, to engage solutions at the local level. For this reason, some of the community networks that strive to improve the ability of communities to identify their own problems and to act in consort to resolve them show great promise.

Computers and interactive media are, of course, only a part of the solution. Individual responsibility, community action, and the engagement of human innovation and intelligent human resources are becoming evermore crucial. Just as machines extended the capabilities of the muscles in the Industrial Revolution, now the Information Age is extending the capability of the human mind.

The President and I realize that many of the impediments to a seamless health information infrastructure will not yield to simple solutions. Dr. Koop has explained to me that those of you present today represent some of the best minds in the country engaged in improving the health status of Americans through the use of health informatics. He tells me that although much work remains to be done, you have identified some of the crucial issues that must be faced in developing a nervous system for the American health system. It is my understanding that you are prioritizing these issues and considering the best mechanisms for developing effective policies regarding such concerns as: privacy and confidentiality protections; implementing practice guidelines and standards; the appropriate roles for the private sector, the Federal government, states, and communities; engaging HHS to remove barriers to the HII; developing core datasets for medical outcomes research; reimbursement and interstate licensure of telemedicine; and providing technical and policy solutions for

ensuring access for all Americans. The President and I applaud these noble efforts and support your actions.

We believe, along with the Vice President, that the benefits of the health component of the National Information Infrastructure will make a huge difference in improving the effectiveness and efficiency of our health system. We believe that in solving some of the problems of the health system, we will enhance the competitive edge of American businesses in the global market, go a long way toward balancing the budget, and ultimately, further improve the health and prosperity of Americans. Keep up the good work and let us know how this Administration can work with you to remove the barriers and accelerate the development of this system of systems that will become the health care nervous system for healthy Americans.

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HII Leadership Awards

Each year, the Koop Foundation will provide awards to companies making substantive contributions to the development of the Health Information Infrastructure or who have produced and marketed outstanding health informatics applications. The purpose of the HII Awards is two fold: 1) to reward innovation; and 2) to publicize the evolution of the health-oriented telecommunications and computing applications.

Key Koop Foundation Personnel

C. Everett Koop, M.D.	Medical Director and Senior Scholar
David Serra, J.D.	Administrative Director
Michael D. McDonald, Dr.P.H.	Director of Health & Telecommunications
Alexander Sloan, M.D.	Project Executive

David Taylor	General Counsel
Doug Foellmer	Chief Financial Officer
Art Schiller	Health Information Network Specialist
Jane Preston	Telemedicine Advisor
James Dickson, M.D.	HII Advisor
Joseph Rosen, M.D.	Research Advisor
Joseph Henderson, M.D.	Multimedia and Research Advisor
Clarence Pearson	Health Business Sector
John Kelso	Management Advisor

Legal Status, Affiliations, and Facilities

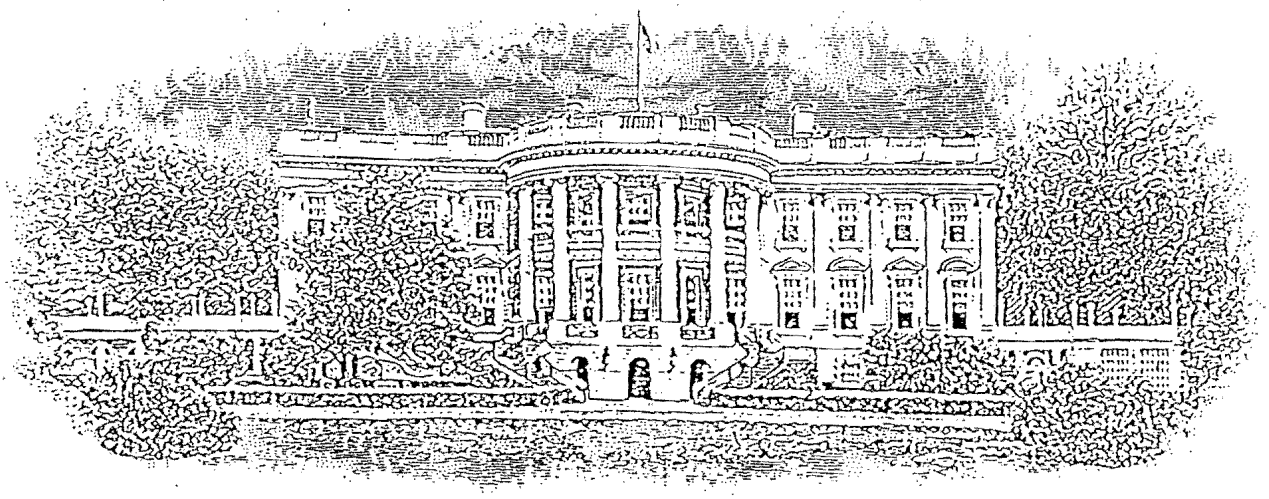
The C. Everett Koop Foundation is a separate nonprofit (501C3) foundation overseeing the management of its health information infrastructure initiatives. The Koop Foundation is associated with the C. Everett Koop Institute, which is affiliated with, and has offices at, Dartmouth College. The Koop Foundation HII activities are managed from its Washington D.C. area offices. The Koop Foundation is developing an advanced interactive communications system to form a virtual institute linking centers of excellence in health informatics nationally and internationally.

Koop Foundation and HII Consortium Resources

The C. Everett Koop Foundation is funded from private foundations and public grants and contracts, as well as from revenues from health information infrastructure directives and activities. The C. Everett Koop Institute is funded by public and private sector grants and contracts, affiliated with medical education and other health-related activities.

per request – pls send back orig. Gore letter neg. to Shalala for files

The White House



DOMESTIC POLICY

FACSIMILE TRANSMISSION COVER SHEET

TO: Eric Toder

FAX NUMBER: 622-8784

TELEPHONE NUMBER:

FROM: Chris Jennings

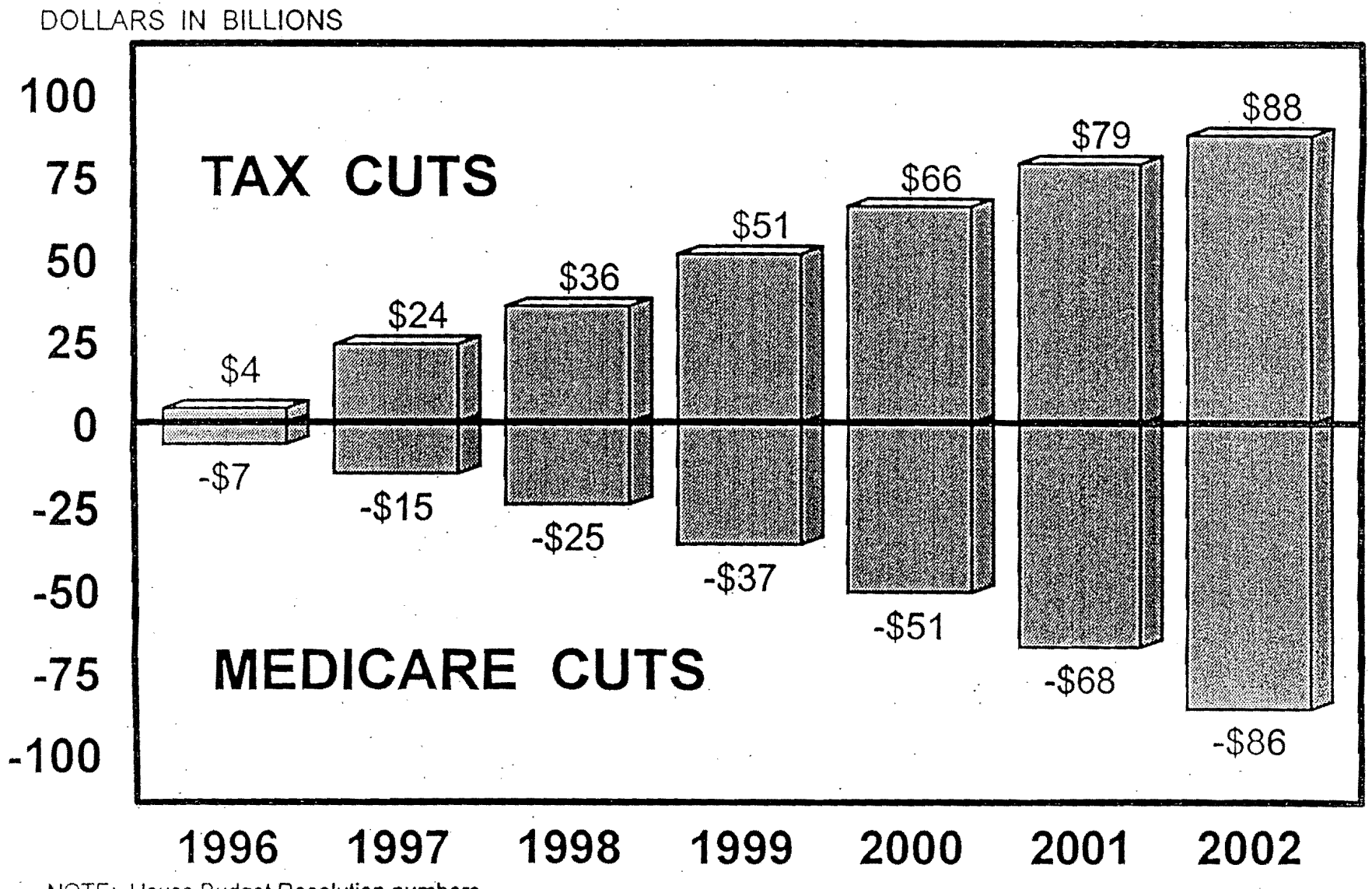
TELEPHONE NUMBER:

PAGES (INCLUDING COVER): 2

COMMENTS: Per our conversation. I look forward to getting the MSA info.

Thanks

REPUBLICAN TAX CUTS REQUIRE DEEP MEDICARE CUTS



NOTE: House Budget Resolution numbers.

Koop Foundation Inc.
C. Everett Koop Institute
Office of Health and Telecommunications
10306 Great Arbor Drive
Potomac, MD 20854
Tel: (301) 299-1507, Fax: (301) 299-1509

Koop File

FAX COVER SHEET

DATE: 7/3/95

TO: Chris Jennings

FAX NUMBER: 202-456-5560

BUSINESS PHONE: 202-456-7028

FROM: Mike McDonald

ITEMS: - Ideas for First Lady's speech
Working Draft 0.4
Working Draft 0.5 (Silva Edits)

COMMENTS/SPECIAL INSTRUCTIONS: Chris,
I hope this is of help.
I will have another version with John Silva's comments to you this afternoon.
Mike

TOTAL PAGES (Excluding Cover Sheet):

Please call us if you do not receive all pages.

Working Draft 0.4 *For Discussion Purposes Only*

Realizing the Potential of Health Information Technology for People and Communities

Given the direction that the budget and policy debate is going in Congress, there is a greater need than ever to be clear about our nation's priorities today and into the future. The American public, over the past two and half years, have conveyed their interest in finding ways of improving the health and quality of life of American at lesser cost. The combination of innovative health services and the use of advances in information technologies will most likely play prominent roles in maintaining and improving health over the next decade in which our nation will grapple with balancing the Federal budget.

During the years ahead, our society must simultaneously balance the needs of all Americans with our ability to reliably remove the debt which endangers the future prosperity of our nation. "Balancing the budget", however, can not be a smokescreen behind which our society casts aside its responsibilities for those whose lives are most at risk. We cannot blindly forge changes in the fundamental fabric of our society that would leave our children, our elders, and our sick with insufficient means of sustaining themselves and their families.

We must find ways of doing more with less, by working smarter, engaging new innovations, and drawing upon the still untapped strengths in the American public.

One of the most promising ways of doing this is through the engagement of information technologies. Over the past two decades, computer and technologies have transformed many sectors of American society. Every 18 months to 2 years, the price of computing power drops in half. In fact, American children now have access to more computing power in their personal computers and game machines than was accessible to only the largest corporations a little more than decade ago. Over the next few years, vast improvements in communications bandwidth, will bring about orders of magnitude changes in communications speed, making available new interactive multimedia capability into the home, schools, and the workplace.

Over the past decade and a half, ATM machines have transformed banking, automated cash registers and credit approvals have altered the manner in which retail business is performed, and robotics and CAD/CAM have revolutionized American manufacturing -- again making it a top producer globally. These types of innovations and vast improvements in cost and performance have to be applied to resolving the problems of our health sector as well.

In many ways, health information products and services are on their way to becoming an essential part of the equation for improving quality and access to health care, while reducing the costs of health services. During the health care reform debate in the 103rd Congress, health information was slated to play a role in managing the complexity of the health system, especially in the form administrative simplification. In market-based health reform, the role of health information is even more critical.

The health information infrastructure is essentially the nervous system for the nation's health system. Today, this nervous system is still only partially formed, yet it is

becoming even more critical given that market-based reform has few controls and many avenues which could decrease quality and access under the pressure of reducing costs. For example, we are still not capturing and analyzing the basic data which will allow us to evaluate whether market-based health care reform is progressing successfully, or whether it is worsening the health status of Americans.

The contributions of the health information infrastructure (HII), of course, do not end with electronic claims forms, reducing paperwork, and evaluating the impact of changing the mechanisms for financing health care. The computerized patient record promises to improve the ability of doctors to provide the best and most up-to-date care. The HII, in the form of telemedicine, would improve access to the best technology and medical expertise even in underserved areas such as in rural areas and in the inner cities. An effective HII can provide better avenues for educating physicians and nurses, such as through clinical simulations and instant access to the world's medical literature, not only during the time of formal medical training, but also by providing just-in-time information and training, even out in the remotest areas of the country. This mechanism, for bringing some of the capabilities of the advanced medical center out to the generalist in remote practice combined with improved communications amongst colleagues, is thought to also show promise in helping to encourage and enable clinicians to remain in practice in underserved areas.

Perhaps, of even greater impact, will be the introduction of personal health information systems, which will give the public access to almost anything they want to know about their health, 24 hours a day, 7 days a week. Consumer health informatics is already beginning to empower the public to make better decisions regarding their own health. These systems, which will soon be providing millions of Americans access to health

information and decision-support through their televisions, computers, personal data assistants promise to greatly improve health status through prevention, health promotion, and self care, as well as to save tens of billions of dollars per year through demand management.

In addition, information systems, such as the Centers for Disease Control's INPHO, are allowing clinicians, public health workers, and policy makers access to aggregated health information -- absent personal identifiers -- in order to better fight epidemics and endemic disease (disease present at all times) in populations. Traditionally, Socioeconomic status was controlled for, in other words its influences were removed from consideration, in health and medical trials. On the forefront of epidemiology today, it is understood that only a small part of the causality of disease can be understood by focusing only on the genetic and medical factors contributing to health and disease.

Much of health and human prosperity is dependent upon the psycho-social elements impacting individuals and the family and community that surround them. The problems such as teenage pregnancy, drug abuse, gun violence -- which impact the health of Americans so greatly -- can not be fixed in a doctor's office alone. They cannot be solved by centralized government alone. They must be addressed by empowering the people most affected by these problems, and their advocates, to engage solutions at the local level. For this reason, some of the community networks that strive to improve the ability of communities to identify their own problems and to act in consort to resolve them show great promise.

Computers and interactive media are, of course, only a part of the solution. Individual

responsibility, community action, and the engagement of human innovation and intelligent human resources are becoming evermore crucial. Just as machines extended the capabilities of the muscles in the Industrial Revolution, now the Information Age is extending the capability of the human mind.

Where is knowledge in this information? Will we find the wisdom hidden in so much knowledge in order to guide this process forward in the interests of all Americans? Our society is dependent upon you and your colleagues, who are working so diligently to build ubiquitous interoperable health information systems that break through having to trade off quality or accessibility to care for reducing the cost of care. The President and I realize that many of the impediments to a seamless health information infrastructure will not yield to simple solutions.

Dr. Koop has explained to me that those of you present today represent some of the best minds in the country engaged in improving the health status of Americans through the use of health informatics. He tells me that although much work remains to be done, you have identified some of the crucial issues that must be faced in developing a nervous system for the American health system. It is my understanding that even today, you are struggling with prioritizing these issues and considering the best mechanisms for developing effective policies regarding such concerns as: privacy and confidentiality protections; implementing practice guidelines and standards; the appropriate roles for the private sector, the Federal government, states, and communities; engaging HHS to remove barriers to the HII; developing core datasets for medical outcomes research; reimbursement and interstate licensure of telemedicine; and providing technical and policy solutions for ensuring access for all Americans. The President and I applaud these noble efforts and support your actions.

We believe, along with the Vice President, that the benefits of the health component of the National Information Infrastructure will make a huge difference in improving the effectiveness and efficiency of our health system. We believe that in solving some of the problems of the health system, we will enhance the competitive edge of American businesses in the global market, go a long way toward balancing the budget, and ultimately, further improve the health and prosperity of Americans. Keep up the good work and let us know how this Administration can help you engage your ideas and efforts.

Working Draft 0.5 *For Discussion Purposes Only*

WITH JOHN SILVA'S EDITS

Realizing the Potential of Health Information Technology

for People and Communities

In the decade to come, this nation faces unprecedented economic and demographic challenges. The aging of our population is occurring at the same time we face overwhelming economic and public pressure to find ways to contain health care costs and improve quality.

Given the direction that the budget and policy debate is going in Congress, there is a greater need than ever to be clear about our nation's priorities today and into the future. The American public, over the past two and half years, have conveyed their interest in finding ways of improving the health and quality of life of Americans at lesser cost. The combination of innovative health services and the use of advances in information technologies ~~should play prominent roles in maintaining and improving health over the next decade during which time our nation will contend with an aging population and the balancing the Federal budget.~~ has great potential to be responsive to this interest. All of this will take place as our nation faces unprecedented economic and demographic challenges, at a time when simultaneously we ... these seemingly contradictory pressures. In fact, these technologies can ... this challenge, ... serve as the answer to the seemingly impossible challenge.

~~We cannot blindly "balance the budget" in an irresponsible way that would leave our children, our elders, and our sick with insufficient means of sustaining themselves and their families. Confronted with Global competition, American businesses have found ways to work smarter - by creating new ways of doing business by drawing upon the strength in American knowhow and ingenuity and by harnessing the tremendous advances in information technologies.~~

In an environment where ~~the Federal Government is attempting to eliminate our deficit~~ we all are committed to eliminating our Federal deficit, ~~and the private sector~~ is ~~facing increasingly~~ strong ~~competition~~ ~~from abroad~~

We must find ways of doing more with less, by working smarter, engaging new innovations, and drawing upon the still untapped strengths in the American public. Over the past two decades, computer and technologies have transformed many

sectors of American society. Every 18 months to 2 years, the price of computing power drops in half. In fact, American children now have access to more computing power in their personal computers and game machines than was accessible to only the largest corporations a little more than decade ago. Over the next few years, these improvements will continue and will bring interactive multimedia capability into your home, our schools, and the workplace.

Health information products and services are already improving quality and access to health care, while reducing the costs of health services. The health information infrastructure is essentially the nervous system for the nation's health system. Today, this nervous system is still only partially formed, yet it is becoming even more critical given that market-based reform has few controls and many avenues which could decrease quality and access under the pressure of reducing costs. For example, we are still not capturing and analyzing the basic data which will allow us to evaluate whether present changes in health care are improving or worsening the health status of Americans.

The contributions of the health information infrastructure (HII), of course, do not end with just administrative simplification, that is -- electronic claims forms, reducing paperwork, and evaluating the impact of changing the mechanisms for financing health care. An effective HII can provide better avenues for educating physicians and nurses, such as through clinical simulations and instant access to the world's medical literature, not only during the time of formal medical training, but also by providing just-in-time information and training, even out in the remotest areas of the country.

Telemedicine can bring some of the capabilities of the advanced medical center out to

the generalist in remote practice combined with improved communications amongst colleagues, and help to encourage and enable clinicians to remain in practice in underserved areas. Personal health information systems empower the public to make better decisions regarding their own health. These systems, which will soon be providing millions of Americans access to health information and decision-support through their televisions, computers, personal data assistants promise to greatly improve health status through prevention, health promotion, and self care, as well as to save tens of billions of dollars per year through demand management. In addition, information systems, such as the Centers for Disease Control's INPHO, are allowing clinicians, public health workers, and policy makers access to aggregated health information -- absent personal identifiers -- to protect confidentiality -- in order to fight epidemics and endemic disease (disease present at all times) in populations.

Much of health and human prosperity is dependent upon the psycho-social elements impacting individuals and the family and community that surround them. The problems such as teenage pregnancy, drug abuse, gun violence -- which impact the health of Americans so greatly -- can not be fixed in a doctor's office alone. They cannot be solved by centralized government alone. They must be addressed by empowering the people most affected by these problems, and their advocates, to engage solutions at the local level. For this reason, some of the community networks that strive to improve the ability of communities to identify their own problems and to act in consort to resolve them show great promise.

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We believe, along with the Vice President, that the benefits of the health component of the National Information Infrastructure will make a huge difference in improving the effectiveness and efficiency of our health system. We believe that in solving some of the problems of the health system, we will enhance the competitive edge of American businesses in the global market, go a long way toward balancing the budget, and ultimately, further improve the health and prosperity of Americans. Keep up the good work and let us know how this Administration can work with you to remove the barriers

and accelerate the development of this system of systems that will become the health care nervous system for healthy Americans.