Wright Mega-centers of Innovation Request For Information (RFI)

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Wright Mega Centers of Innovation (WMI) RFI Response

Section 1: General considerations

1. ***Is the magnitude and type of funding from the Third Frontier Project appropriate to achieve the stated objectives for this program? If not, please provide an explanation of the limitations and what would be required to overcome them.*** The magnitude and type of funding appear to be adequate to the stated objectives. However, the stipulation of having a two to one match from other funding sources will limit the scope of projects that might be funded. Projects that are on the bleeding edge of development do not typically garner extensive private sector support, yet, the State must protect any investment of this scale. As a compromise between these two forces, we would recommend that equal consideration be given to innovative products and processes that will result in cost savings in the public sector. Mega Centers should be conceived of as being transformative and revolutionary, effecting a major sector of the State's economy.

   Consider the effect of saving health care costs. Government pays almost one half of the $1.9 trillion health care bill in the US and employers are staggering under the burden of health insurance premiums. A mega center that proposes reductions in both public sector cost, (savings in the cost of Medicaid) and private sector stimulation, (reduction in the cost of health insurance) will have a resulting "match", but not a direct contribution.

   Conventional "match" will have the effect of stifling public sector contributions and of providing private organizations in large communities with a competitive advantage. In arenas where government intervention is necessary to forestall economic disaster, the idea of public private partnership for transformation to enhance the public good should carry equal value.

   Please consider the following revision:
   "Cost share or cost savings must be demonstrated. Cost share shall be committed at a level of at least two dollars of non-Third Frontier funding for every dollar of Third Frontier funding awarded by the end of the project period. Cash commitments are expected to be a component of the cost share and will be given added weight in the evaluation of cost share quality. It is also expected that the center will be structured to attain a combined cost share and leverage ratio of at least three dollars for every dollar of Third Frontier funds awarded by the end of the project period. Cost savings must be directly attributable to a reduction in the cost of programs or services for the State of Ohio, County governments or other units of local government. Cost savings may also be demonstrated using a cost-benefit analysis model that demonstrates improvement in quality of life, health, and environment in Ohio."
   The original language is found on page 3 of the RFI and reads:
   "Cost share must be committed at a level of at least two dollars of non-state funding for every dollar of state funding awarded by the end of the project period.

Cash commitments are expected to be a component of the cost share and will be given added weight in the evaluation of cost share quality. It is also expected that the center will be structured to attain a combined cost share and leverage ratio of at least three dollars for every dollar of state funds awarded by the end of the project period."

2. ***What should be considered to strengthen the concept of the Wright Mega-Centers of Innovation as presented and to enhance the quality of proposals received?*** The WMI initiative needs to be viewed as a tool for economic transformation. Trickle down effects of technological advances are diffuse and, slow to be realized. The impact of cost savings in the public sector is direct, measurable and far reaching. Reduction of costs to the State should be considered in evaluating projects because of the direct impact on the public good.
3. ***Are you aware of initiatives in other states with similar objectives to the proposed Wright Mega-centers of Innovation that may serve as a model or have elements that should be considered for incorporation into the WMI concept?*** Not aware of any.
4. ***Are there any major issues with the WMI concept as presented?*** The multi-regional approach might receive greater weight in evaluating the responses to the RFP.

Section 2: Center Concept for **e-HIO: electronic-Health Information Ohio**
In the context of the program objectives and structure provided above, please describe a specific opportunity that your organization would propose for a Wright Mega-center of Innovation addressing the following information:

1. ***Provide a vision statement for the center.*** : e-HIO will build, broker and distribute primarily open source software applications that comply with national standards and provide web accessed personal health information for all Ohioans. The goal of this project is to offer a public utility infrastructure supported by subscriptions from health care providers that will facilitate the availability of accurate patient information at the point of care for all Ohio citizens. In keeping with the National Health Information Network (NHIN) e-HIO will demonstrate implementation of regional health information hubs supporting the electronic exchange of patient data first in three Ohio markets and by the end of the funding period will be implemented across the entire state. The commercial impact of this project will ripple across the Ohio economy and provide a template for a national transformation of health information technology and exchange.

The e-HIO collaborative recognizes the importance of populations with access issues to both health care and information technology. Health disparities and the digital divide that cobble the progress of racial ethnic and economically disadvantaged groups are real life issues that such projects must address. e-HIO will work with safety net providers and human service organizations to include both those organizations and their consumers as users of the developing systems.

2. ***Describe the technology platform(s) that will be the focus of the center.***
This information technology project will demonstrate health information exchange supported on an NCR Teradata platform with enhanced data mining capability. The Teradata platform will provide scalability and extensibility for the massive amounts of data contained in electronic health records. The incubation period demonstrated on the currently funded Teradata platform located at Wright State University

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3. Describe the Ohio strengths—not just in one region—that justify building a major center around the technology platform(s) identified:

- ***a. Is it a significant source of competitive differentiation that provides a unique signature for the State?***
- ***b. Is it hard for competitors to imitate?***
- ***c. Is it relevant to a significant base of existing businesses?***
- ***d. Does it have potential to support the creation of new businesses?***
- ***e. Does it have the potential to attract new to Ohio business activity?***
- f. ***Is the economic development potential sufficiently large to have a meaningful impact on the State's economy?***

Background:
Across the state there are many groups actively discussing the formation of regional health information organizations, RHIOs. These organizations would provide the

“community will” and governance structure to facilitate the electronic exchange of health information. Following is a review of the discussions that are occurring in northwest, northeast, central, and southwest Ohio.

The Community Health Alliance of Northwest Ohio (Toledo) is clinically focused and patient focused. The infrastructure includes a neutral community-centric data processing center, and a highly leveraged service center. Key components of the system are the consistent identification of each patient across institutional boundaries, and the automatic distribution of information between care sites according to privacy-protected routing rules.

Many groups in the northeast area of Ohio (Cleveland, Akron, Canton, and Youngstown) are engaged in activities to promote the effective adoption of health information technology and health information exchange (HIE). This work includes individual projects aimed at promoting greater use among long term care facilities, among small physician practices, and between federally qualified health centers and the region's major hospitals. In addition, several Cleveland hospitals compose the third community of the Northrup Grumman AHRQ award to develop HIE architecture (the University Hospital, Cleveland Clinic, and MetroHealth hospital systems). The organizations in northeast Ohio agreed to pursue creation of NEORHIO.

In central Ohio, three major health systems, The Ohio State University Medical Center, Ohio Health and Mt. Carmel Health System along with Select Specialty Hospitals have a Clinical Working Group that is in the process of developing a clinical transaction based on the Continuity of Care Record concept. The initial stages of the project will focus on the transfer of demographic and clinical data on patients being referred from one of health systems to a Select Specialty facility. The technology partner in this project is HealthCare Transaction Processors, Inc. (HTP) who will provide the transaction processing. This will establish proof of concept and return on investment (ROI). Later phases will move towards more interoperability between these sites and other members and look at expanding the services to the members.

In the southwestern part of the state, two projects are operational: HIEx™ in Dayton and HealthBridge of Cincinnati. In Dayton, the Center for Healthy Communities (CHC), a division of Wright State University Boonshoft School of Medicine, has implemented a shared, community-wide health record based on the Continuity of Care Record standard. The database, called HIEx™, now houses patient and household-centric demographic and health data on 22,000 individuals. CHC is also the lead organization in the HealthLink Regional Health Information Organization, and has participation from some thirty organizations providing referrals and four organizations sharing patient data.

Cincinnati is home to HealthBridge. HealthBridge is an internet portal through which more than 100 entities supply, and thousands of users retrieve, clinical information in a standardized format, developed through the collaboration of the members. The HIE has several critical components, including secure connections between physician organizations and hospitals, access to existing hospital information and a community-

wide clinical messaging system. Data from multiple sources are standardized across the community and delivered electronically to physicians. Information is currently physician-centric and remains in the central database. Efforts are being developed to provide a patient-centric record.

In the heavily rural southeastern part of the state, the Appalachian Regional Informatics Consortium (ARIC) has been funded by the National Library of Medicine; funding has supported planning activities for a nine-member coalition. The consortium's mission is to create a sustainable and replicable model for advanced integrated information management systems for rural health care in Appalachian Ohio. The model will establish a formal organizational structure and a comprehensive technical plan for a shared medical information system to benefit primary and behavioral health care providers, biomedical researchers and medical educators.

All of these regional efforts are both helped and hampered by the same issues. The costs of vended electronic health records (EHRs) are extremely high, up to $40,000 per physician per year. Clinical adoption of EHRs has occurred in only 10% of all physician practices and 15% of all hospitals. The fact that most physicians will say that they hope to retire before EHRs are implemented is a reflection of the difficulty inherent in changing the methods of practicing medicine. As other industries have demonstrated, computerization involves change in workflow; it is not simply a process of taking paper forms to the computer. The solution for electronic health records will involve multiple disciplines, public and private sector cooperation and an iterative approach. If Ohio were to fund the development of a health information public utility on a scalable platform using industry standards, there are multiple public and private sector organizations that would participate both inside of Ohio and outside Ohio.

<u>The national scene:</u> Health care costs that are rising at a faster rate of growth than gross domestic product, inflation and population are driving the establishment of the National Health Information Network (NHIN). As yet only a concept, NHIN would define the infrastructure to provide accurate up-to-date health information on all citizens at the point of care. To date many variations on solutions have been proposed and are being tested by the Office of the National Coordinator for Health Information Technology (ONC); one of those is in both Cleveland and Cincinnati.
The reasons health care is rising at such a rapid rate are complex, but thought to result primarily from the cost of preventable medical errors, duplicative tests, and administrative costs (estimated at 20% of the total cost). In the US 1.9 trillion dollars were spent on health care in 2004 (latest data available), a per capita cost of $6280. The primary literature that has influenced American thinking in this area started with the Institute of Medicine (IOM) report "To Err is Human" (1999) that showed that preventable medical errors result in more deaths than automobile accidents in this country. In 2001, IOM published "Crossing the Quality Chasm" that specified ten rules for redesigning the health care system, the fourth of which was "Knowledge is shared and information flows freely." Citing the problem of paper records that are seldom readable, located in many places, difficult to retrieve, etc., this report suggested the elimination of paper records by 2010, a goal that has been adopted by the ONC.

Health care provision has become increasingly complex, with an ever increasing division of labor that requires greater coordination and the ability to provide accurate and complete information at the point of care. “Yet health care organizations, hospitals, and physician groups typically operate as separate ‘silos,’ acting without the benefit of complete information about the patient’s condition, medical history, services provided in other settings, or medications provided by other clinicians.” (IOM) The use of health information technology, and in particular health information exchange, will help to address these problems and improve the quality of care.

The ability to exchange data among information systems, referred to as interoperability, is seen as the most critical element to effective health information exchange. Information on one patient is often resident in many locations, sometimes in many locations within one organization. The challenge is to coalesce all of that information into one single view that provides up-to-date accurate information at the point of care. Solutions offered to integrate patient information from multiple organizations and to deliver that information at the point of care fall into two general categories: one is known as a *federated system*, the other as a *central data repository*. The federated systems leave data managed by an organization in its own database and, using a master patient index and middleware, pull data from multiple organizations to create a virtual record. The central data repository takes data from multiple organizations into a central database.

To date, the private sector has tested systems involving middleware and a master patient index. These federated systems have had both lengthy and costly implementations and suffer from security vulnerabilities. Although this federated technology has been in use for ten years or more, the adoption rates for EHRs remains very low. The resistance to EHR adoption focuses first on cost and secondly on the lack of adopted standards for electronic health records. As the seventh most populous state Ohio’s 11 million citizens would benefit from a standards based electronic solution for a “no frills” personal health information public utility. As envisioned the six distinct and differing regions across the state would provide the structure necessary for information sharing. E_HIO would provide a central data repository as the core of the infrastructure on a scalable platform. The central data repository model is the easiest to implement on a large scale and will provide a secure cost effective solution. The development and adoption of standards such as the evolving HL-7 DSTU and the approved Continuity of Care Record (CCR) offer a paradigm for information to be captured, stored and exchanged.

As a personal health record the CCR provides information to both health care providers and to the patient about their health conditions. For example, patients with diabetes, hypertension, asthma and other conditions can record their own observations. Many of these patients do not have access to technology. e-HIO plans to address the digital divide by the inclusion of safety net organizations in the planned implementation. The type of information needed by case managers, community health workers, school nurses, and health care providers intersect. e-HIO will provide appropriate role based

access to patients, social workers and paraprofessionals with an eye toward improving Ohio's performance in health disparities.

Is it a significant source of competitive differentiation that provides a unique signature for the State?

While the discussions of electronic health records and regional health information organizations have proliferated, state wide, regional or even city wide implementation has not occurred in any location with a full electronic health record. The currently operational examples like HealthBridge in Cincinnati and UHIN in Utah exchange information but it is just part of the information in an electronic health record. HealthBridge exchanges laboratory results and UHIN has administrative data, such as billing information.

e-HIO proposes using the Continuity of Care Record as the starting point for health information exchange regionally and state wide. A health information technology public utility product that provides no frills basic information presented in a culturally competent paradigm is a critical first step along the path to improving health care quality and consequently reducing health care costs. The effect of Ohio winning the health information exchange and technology race for all Ohioans, predicated upon the first implementation of a central data repository on a scalable platform, will revolutionize Ohio's economy in ways we can only now imagine.

Ohio, as home to the NCR Corporation, with its Teradata products that provide advanced data mining and eliminate concerns about scalability in systems, is positioned to model solutions for many industries, most particularly health information technology and exchange. The central data repository model is evolving as a necessary lynchpin to the solution for the NHIN. The Teradata model is designed to address these types of data management needs. Other platforms currently being tested have been challenged to provide effective solutions. The State of Ohio as the seventh most populous state in the country will provide a prototypical model. The racial, ethnic and economic diversity of its population residing in areas that range from extremely rural to heavily urban will provide the opportunity to build a system that works for all groups.

Beyond having the capability to prove the concept of health information housed in a central data repository, Ohio has strong native expertise in medicine, medical education, and has a highly evolved safety net. The involvement of the Board of regents in the Third Frontier can extend from connectivity to intellectual investment. David Brailer the National Coordinator for HIT has remarked that when we discuss re-engineering health care, we need to consider that it was never engineered in the first place. The result is that there is a lot to learn. Clinical adoption, or the use of IT by health care providers has been viewed as one of the primary challenges in this field. Human factors engineering must be considered, re-engineering workflows, adapting technology to improve data capture, streamline workflow and to provide essential information at the point of care are all challenges that can be readily addressed in Ohio's universities and schools of medicine. 85% of all medical care occurs in

ambulatory care settings, in diverse communities, so Ohio's community schools of medicine have important data and participation of community partners. In the private sector the cost of clinical review of products is a major portion of the investment to build electronic health record systems. Ohio needs to use its clinical, cultural and IT expertise as a marriage for national leadership in health information technology.

In addition to developing technology that can be commercialized and result in cost saving for the State of Ohio as a health care payer, Ohio employers will experience reduction in health insurance costs. Ohio would enhance its ability to attract new and relocating business with reductions in the cost of health care for employers. These cost savings will result in advancing Ohio's economic health and stature as a visionary state. The rippling effect of such a profound change can only be estimated. Rand Corporation estimates that "If efficiency in the nation's healthcare system increased by an additional 1.5 percent per year — what economists generally agree was the impact of information technology on the wholesale and retail industry — savings could be as high as $346 billion annually…" Based on population the savings in Ohio would annualize to 13.8 billion.

Today we know that readings from glucose meters, scales, thermometers and many other medical devices could be uploaded into data storage using Bluetooth, infrared or other automatic means; technology is not the issue. Medicine today is practiced in essentially the same modality as it was practiced at the end of the nineteenth century. The need for electronic health records has been accepted and set as a national priority and the implementation of these records is anticipated to cost 115 billion dollars. (Rand 2005). A health information technology public utility product that provides no frills basic information is a critical first step along the path to improving health care quality and consequently reducing health care costs. The effect of Ohio winning the health information exchange and technology race, predicated upon the first implementation of a central data repository on a scalable platform, will revolutionize Ohio's economy in ways we can only now imagine.

Imagine a system that can provide the sophisticated verbiage that a health care specialists needs, but at the same time has the ability to simplify the concept for the lay person in ways that they can understand. There is no reason that this system cannot be built with interfaces for those with challenges in literacy, language, or other challenges. These are all included in the vision of e-HIO.

Is it hard for competitors to imitate?

Competitors are unlikely to be able to imitate this product with any ease both from a technological and a "community will" perspective. The computer code required for an EHR is very extensive and the need to address clinical adoption issues in the engineering of the interface adds to the complexity. When this project is completed, Ohio firms will be in a position to "sell" installations of the e-HIO system to and in other states.

Is it relevant to a significant base of existing businesses?

Health care costs effect all business ventures, existing businesses, newly developing businesses, and relocating businesses. Reduction in health care costs and health insurance costs will enhance Ohio's ability to attract and retain business.
The health care industry is also very interested in the exchange of health information and the resultant cost savings and efficiency gains.

Does it have potential to support the creation of new businesses?

New business creation is outlined under question 4.

Does it have the potential to attract new to Ohio business activity?

New businesses that may be attracted to such a project are those that are peripheral to health care. These companies could work on joint development with e-HIO for interface of medical devices and other products sued in the provision of health care.

Is the economic development potential sufficiently large to have a meaningful impact on the State's economy?

Consider the effect of saving health care costs. Government pays almost one half of the $1.9 trillion health care bill in the US and employers are staggering under the burden of health insurance premiums. Reducing both public sector cost, (savings in the cost of Medicaid) and private sector stimulation, (reduction in the cost of health insurance) will resulting in true economic development.

4. ***Describe the major economic development opportunities that are expected to be leveraged with the center and how they would justify a state investment of the magnitude offered.*** The economic development opportunities that will result from a state wide health information exchange include jobs in support services in the information technology sector, electronic instrumentation development, social/ health service support to facilitate clinical adoption and cost savings impacts on the State budget in the Medicaid program and many others. These would include:

A. Hardware, internet connectivity and support of installations in physician offices
B. Help desk support for both hardware and software applications
C. Training of new users
D. Marketing to the public
E. Supporting and extending software development including:
    a. Medical devices direct feeds
    b. Patient portals for disease management
    c. In-patient application integration
    d. Practice management systems
    e. Billing for services
    f. Managed care implementations
F. Technical assistance in implementation including data collection
G. Development of a new set of paraprofessional health data evaluators
H. Data mining business opportunities with drug companies and research facilities using de-identified data.

5. 5. ***Identify potential major collaborators in the center.*** To date discussions have included potential major collaborators: One Cleveland, NorTech, Wright State

University, Ohio University, NCR Corporation, Health Policy Institute of Ohio (HPIO) and HealthCare Transaction Processors, Inc. (HTP), "OneCleveland is a nonprofit provider of community-based ultra broadband networking services and applications that improve our community's quality of life and stimulates economic development." "NorTech is a technology-based economic development organization, supported by the private sector, focused on continuous improvement of Northeast Ohio's technology environment and economy. We work to ensure the economic growth and leadership of Northeast Ohio through innovation and entrepreneurship." "Wright State University will be a catalyst for educational excellence in the Miami Valley, meeting the need for an educated citizenry dedicated to lifelong learning and service. To those ends, as a metropolitan university, Wright State will provide: access to scholarship and learning; economic and technological development; leadership in health, education, and human services; cultural enhancement, and international understanding while fostering collegial involvement and responsibility for continuous improvement of education and research." "Ohio University is a public university providing a broad range of educational programs and services. As an academic community, Ohio University holds the intellectual and personal growth of the individual to be a central purpose. Its programs are designed to broaden perspectives, enrich awareness, deepen understanding, establish disciplined habits of thought, prepare for meaningful careers, and thus, to help develop individuals who are informed, responsible, productive citizens." "NCR's Teradata division is the global technology leader in enterprise data warehousing, analytical applications and data warehousing services." "The Health Policy Institute of Ohio is an independent, nonpartisan, statewide center that informs Ohio health policy by forecasting health trends, analyzing key health issues, and communicating current research to policymakers, state agencies and other decision-makers." "HTP develops software for the healthcare industry that improves efficiency, profitability and service quality for hospitals, insurance companies, physician groups, managed care organizations, third-party administrators and public sector health plans. The company's software also enables secure information exchange through Regional Health Information Organizations (RHIOs)."

6. ***Provide specific evidence of private sector interest in the center concept.***
Health care cost is the number one concern of CEOs in all sectors of the economy. As the primary method for cost containment and quality improvement, health information technology has the potential to either be the savior for health care or the force that bankrupts the system. Implementations of electronic health records from private sector vendors can cost as much as $40,000 per year per physician. Hospital electronic record implementations can cost hundreds of millions of dollars. The cost of implementing health information technology and health information exchange nationally is estimated at 115 billion dollars. In Ohio the estimate for implementation is 4.6 billion dollars.

While health information technology and exchange have potential to save tremendous amounts of money, the potential to unnecessarily increase cost in their implementation is much more real. Today electronic health information technology is dominated by legacy systems and technologies. Most extant electronic health care data is administrative data such as billing, disease coding, and is communicating using a

clinical messaging standard known as HL-7 2.x. This messaging standard has been in use since 1991. HL7 2.x has message-oriented architecture (vs. Client-Server or Document architecture). What this means is that when an event occurs (a transaction) the data source will send a message to another application. This differs from most current technology in that it is a push of information rather than a request for information. The "intentional optionality" built into the HL-7 2.x standard has resulted in variability with each vendor adding their own nuances. The result is that interfaces are complex and expensive.

For the past twenty years, with the exception of the Veteran's Administration (VA), the Department of Defense and the Indian Health Service, government and the public sector have left development in the private sector. The private sector, driven by the profit motive, takes the most expeditious route in product development and implementation and seeks to protect proprietary rights for applications. Consider that one leading EHR vendor (with the very large market share), uses a language developed in the 1960's, M-MUMPS. This is the same language that has been used in the VA and IHS systems. Estimates of the cost to update the VA system and transit to a state of the art IT platform are around 2 billion dollars. Other EHR vendors are developing in current technologies, but their code is proprietary and there are difficulties with interfacing systems. Leaving the solution to the need for health information technology and exchange in the private sector is not working. Rand Corporation has called for government intervention to accelerate adoption. The ONC has issued contracts to test out models, but all of these are federated models. Recent presentations at the Connecting Communities Learning Forum from these contractors included recognition of the need to have central data repositories.

The ability to communicate among systems is the primary prerequisite for establishing a patient centric electronic health record that crosses organizational boundaries. Current investments are being made in products that may not be interoperable with other systems, and in fact may not interoperate with newer versions of the same product. Interoperability presumes either open data base structures or published XML schemas. Vendors are very guarded about their intellectual properties and health care institutions see health information as a competitive advantage, thus they are reluctant to share information. These two market forces are seen as obstacles to health information exchange upon which healthcare quality improvement and cost reduction are based. The development of industry standards is seen as the primary method to address these barriers.

Standards are being developed for health information technology and exchange and the only currently approved standard is the Continuity of Care Record, (CCR) approved by ASTM (American Society for Testing and Measurement) and published December 2005. "The Continuity of Care Record (CCR) is a core data set of the most relevant administrative, demographic, and clinical information facts about a patient's healthcare, covering one or more healthcare encounters. It provides a means for one healthcare practitioner, system, or setting to aggregate all of the pertinent data about a patient and forward it to another practitioner, system, or setting to support the continuity of care." (ASTM 2005) Functionally, the CCR is the bridge between paper records and

standardized electronic health records. It provides essential information about care, conditions, allergies etc. that are used by health care providers in decisions supporting an individual's health care. This use will result in a reduction in preventable medical errors and duplicative processes. In the US preventable medical errors result in more fatalities than automobile accidents.

Who benefits from the changes that come with health information technology and exchange? Patients will see quality improvements in care. Physicians will likely experience the most difficulty because their workflow will be changed. The market sector that will benefit most from electronic health records is the payer community, both public and private sector. Almost half of all health care is paid for by government (Medicare, Medicaid and local government revenue). In the private sector General Motors estimates that up to $6000 of the cost of a new car pays for employee or retiree health care. The United States has the highest per capita cost for healthcare in the world, a full 50% higher than the second highest cost, Sweden.

7. ***Describe the types of talent you would expect to recruit to the state to build the capabilities of the center.*** States that are seen as leaders in health information technology are Massachusetts, Indiana, and California primarily due to the activities emanating from their academic medical centers. As academic medical centers, their focus has been hospital based and the community health focus has not been developed. This mega center would seek health information technology developers, human factors engineers, and marketing professionals with a community health care provider and ambulatory care focus. The ambulatory care setting is estimated to be the site in which 85% of all healthcare is delivered.

8. ***Describe how the center would fit with the economic development priorities of one or more regions of the State.*** The three regions involved in this project are northeast, southwest and southeast Ohio. Northeast Ohio, lead by NorTech has established the "shared goal for the year 2020 is to build an innovation-focused, technology-based economy that makes Northeast Ohio one of the Top Ten Places in the World to Live, Learn, Work, and Invest. Statewide, the primary focus for economic development has been to transition from manufacturing into information technology and management. This mega center will provide a software infrastructure for continued development and expansion of Ohio as a leader in technology.

9. ***Describe the expected commitments of resources by key collaborators to create the center.*** Wright State University (both has and) will provide faculty time for medical expert review of the health information and content. Additionally faculty from business, human factors engineering and computer science are expected to participate as expert advisors to the project.
The primary match to be considered in this project is the cost savings that will accrue to the State as payer, both in reduction of health care premiums for employees and the cost of healthcare through Medicaid costs. Just considering the Medicaid budget alone, (the general revenue fund portion of Medicaid is estimated at $9 billion for 2005) the

State would realize $465 million in efficiency cost realization (based on Rand estimates).

10. ***Describe the expected leverage opportunity in terms of attracting long-term federal, private sector or other sources of sustained funding for the center.*** Sustainability is built into the public utility model for e-HIO. Third Frontier mega center funding will support development of a health information technology and exchange platform based first on the CCR and evolving as the standards for health records develop. This platform will be offered to health care providers on a subscription basis and will include a suite of software, both public open source and vended products that will support effective, efficient and high quality health care for Ohioans. Assuming a subscription cost of $1000 per health care provider per year, the income generated from all of Ohio's physicians alone would be $39,000,000. If all licensed health care providers were included, the estimate would grow to $55,000,000 annually.

In addition to subscriptions, the value of the data as health information must be considered. With appropriate IRB review, the data would potentially be used for medical research fostering more funded study in Ohio's health professions schools through data mining. Drug companies and other health related companies buy de-identified health data.