UNIVERSITY OF VERMONT
COLLEGE OF MEDICINE

AHEC

AREA HEALTH EDUCATION CENTERS PROGRAM

Recommendations from the Work Group convened by the University of Vermont Area Health Education Centers (UVM AHEC) Program Office Regarding the Advisability of Creating and Sustaining a Master Provider Index (MPI).

**Guided by Language Set Forth in
H.861, Section 58, Master Provider Index**

January 2007

Prepared by:

UVM College of Medicine AHEC
Program Office
UHC Campus--Arnold 5
1 South Prospect Street
Burlington, VT 05401

For more information contact:

Elizabeth Cote, Director
Elizabeth.Cote@uvm.edu
(802)656-0030

TABLE OF CONTENTS

SECTION   **PAGE**

I. LEGISLATIVE MANDATE

2006 FINAL LANGUAGE
Master Provider Index (H.861)
Section 58 MASTER PROVIDER INDEX

   (a)   No later than September 1, 2006, a work group shall be convened by the area health education centers (AHEC) program for the purpose of making recommendations for the creation of a master provider index designed to assure uniform and consistent identification and cross-reference of all Vermont health care professionals in the development and implementation of health care technology in Vermont. The work group shall:

        (1)   be composed of interested parties, including representatives of health care provider associations and societies, public and private insurers, the Vermont program for quality health care (VPQHC), appropriate departments of state government, including the commissioner of the department of banking, insurance, securities, and health care administration or designee, the area health education centers (AHEC) program, and Vermont information technology leaders (VITL), for the purpose of creating a set of common data fields for a master provider index of all health care providers, as defined in subdivision 9402(8) of Title 18;

        (2) compile recommendations from those parties regarding data fields that are necessary to be included in a database that allows for comprehensive cross-referencing of the multiple "unique identification codes" applied to health care providers through licensure, credentialing, and billing and claims processing mechanisms for the purpose of supporting the implementation of health information exchange and public health and policy research, analysis and planning;

        (3)   provide cost and time estimates for development and implementation of such an index; and

        (4)   develop recommendations for the governance of the index and its relationship to other state health information data systems, technologies, and records.

   (b) No later than January 15, 2007, the work group shall report to the general assembly on the information obtained and shall make recommendations regarding the advisability of creating and sustaining a master provider index.

Title 18: Health
Chapter 221: HEALTH CARE ADMINISTRATION
18 V.S.A. § 9402. Definitions
§ 9402. Definition
(8) "Health care provider" means a person, partnership or corporation, other than a facility or institution, licensed or certified or authorized by law to provide professional health care service in this state to an individual during that individual's medical care, treatment or confinement.

II. KEY FINDINGS AND EXECUTIVE SUMMARY

MPI Definition #1: Healthcare Workforce Database

Two definitions of a Master Provider Index (MPI) emerged through the process of developing this report. The first definition describes a data set(s) designed to capture health care professional information to plan for health care workforce and other workforce related access issues. The Vermont Department of Health has a longstanding history of healthcare workforce planning, and the demand for healthcare workforce data by other entities has increased over the past several years. The data have been used in numerous ways including legislatively mandated programs such as Vermont's Educational Loan Repayment Programs for Healthcare Professionals. Hereafter this is referred to as the Healthcare Workforce Database.

Findings:

1. Multiple stakeholders (e.g., VDH, BISHCA, VITL, AHEC, OPR, and others) currently collect healthcare workforce data and generate their own reports: some of these efforts are duplicative.

2. Existing physician workforce data collection activities in Vermont provide a model on which to base systems for monitoring other healthcare workforce professions.

3. The Centers for Medicare and Medicaid (CMS) assignment of unique identifiers to healthcare professionals through the National Provider Index (NPI) may help the management of data; however, it is limited in addressing all the issues identified in this report. NPI will replace the payers' provider numbers including MMIS, MEDS, Medicare in the future for electronic transactions (claims, Medicaid encounters and other regulatory files, referrals, etc.). Some work group members encourage requesting an individual level NPI from all providers regardless of whether they use electronic transactions or not. CMS has said that an NPI reference file will be available in the future, but exact time line is unknown. This file could be used to validate name and possibly other data elements, but no public specs exist at this time. (See page 17 for more information about the role of the NPI.)

4. All workforce data on healthcare professions may not require a *census* (for the purpose of this report, defined as a collection of detailed information by individual)*; therefore *sampling surveys* may be appropriate for collecting data for some professions.

5. Timeliness of data reporting is important to stakeholders and may be influenced by the following:
   a. Electronic versus paper submission
   b. Mandatory versus voluntary participation by healthcare professionals
   c. High level of completeness of data
   d. Frequency of survey implementation

6. Existing costs of administering current surveys per health professional survey range from $32,812 to $49,250.

7. The estimate for start-up costs of electronic submission is up to $500,000 (i.e., build the platform). Data to estimate ongoing costs is not available; however, ongoing costs to maintain the system should be expected.

Recommendations:

1. Develop a committee which is convened on a regular basis to serve as a governing advisory body that provides input regarding data collected for the Healthcare Workforce Database, which reports are generated, and to review requests for information to reduce redundancy of data collection across stakeholders. Standards for governance of data would need to be adopted if the data is shared. The reporting and release of data should be carefully governed to protect the privacy of health care professionals participating in the survey. Such a committee should include:

    1. VT Department of Health
    2. VT Department of Banking, Insurance, Securities and Health Care Administration
    3. VT Office of Professional Regulation
    4. VT Area Health Education Centers
    5. Bi-State Primary Care Association
    6. Vermont Medical Society
    7. Payers
    8. VT Association of Hospitals and Health Systems
    9. Other entities as appropriate

2. Build the system of data collection incrementally starting with physicians. Then work with stakeholders to prioritize additional professions to be included. It may make sense to initially focus on professions already using an electronic survey process or where healthcare workforce data is currently routinely collected.

3. In light of Vermont's rural nature and regionalization of care, attention to geographic area and specialty is important. Therefore it is recommended that physician workforce data continue to be collected by individual rather than only sampling.

4. Sampling surveys may prove adequate for some professions where information is widely generalized across the population, but continued work to define where sample surveys and censuses are appropriate needs to occur.

5. Beginning with physicians, implement electronic submission of healthcare workforce data concurrent with licensing processes to increase efficiency and improve timeliness. All electronic licensing activities and additional workforce data collection should be planned in tandem.

6. Consider mandating workforce data information collection to be concurrent with licensing processes. This would require regulatory or legislative action, and will result in timeliness and completeness of data collection and a potential cost savings.

7. Operations of Vermont's Healthcare Workforce Survey and associated database should be overseen by the Department of Health.

8. Allocate adequate resources to implement electronic data collection. This should include strategies to support participants and provide a user friendly system (such as a telephone help line) as well as to support staff to oversee data analyses. Costs associated with development of such a system should be shared by the state and professions.

MPI Definition #2: Local Practitioner Index (LPI)

The second definition of an MPI describes a data set(s) designed to facilitate the identification of health care professionals across varying data systems to aggregate information with the primary purpose of improving quality of patient care and reducing costs associated with the current health care system inefficiencies. Demand for the exchange of health information has increased within many areas of health care including the public and private sectors. Public health agencies, hospitals, physician practices, private and government payers are looking for a better use of our current information to share clinical and administrative information across different systems to improve patient outcomes and decrease the rate of health care spending. Hereafter this is referred to as the Local Practitioner Index (LPI).

Findings:

1. The assignment of unique identifiers to healthcare professionals through the National Provider Index (NPI) may help the exchange of data; however, it is limited in addressing all the issues identified in this report.

2. An LPI requires the identification of an algorithm to assist in matching health care provider records across different systems.

3. An entity to manage and govern the LPI has not been identified at this time: options include an external vendor, state agency or other independent organization such as Vermont Information Technology Leaders (VITL).

4. The LPI can be built upon existing infrastructure being developed by VITL, so that different systems can share information electronically using common standards. Using this infrastructure will likely decrease overall start up costs.

5. Initial population of the database will require data feeds from a variety of sources including insurers and the Vermont Secretary of State, Office of Professional Regulation. The initial population can be accomplished by an external vendor if data feeds are supplied.

6. The database will need to be updated on an ongoing basis.

7. Based upon an initial population of the database with information on physicians and pharmacists input (representing two of the largest cost centers in healthcare), the start up

costs are estimated at no more than $200,000. This does not include the potential savings from using VITL's infrastructure.

8. The Medical Claims Database being implemented by BISHCA will require the development of an LPI.

9. Acronyms associated with various health information technology initiatives are confusing, for example: Master Patient Index (MPI), Master Provider Index (MPI), National Provider Index (NPI), and Local Practitioner Index (LPI). Therefore caution should be used in discussing and naming this database.

Recommendations:

1. As part of the development of a statewide Health Information Technology (HIT) Plan VITL should:
   a. Identify an entity to manage, govern and oversee the LPI that will ensure the viability and sustainability of this important tool.
   b. Provide an overview of the LPI, to include how it fits technologically as well as financially (for purposes of sustaining interoperability in Vermont).
   c. Engage in concurrent planning of the LPI and the Medical Claims Database to avoid duplication of effort. Planning should be coordinated to assure maximum utility of the LPI and common time frames for implementation.

2. An initial overview of how the LPI is integrated into VITL's work should be presented in their preliminary plan to the Legislature in early 2007. A comprehensive overview of how the LPI is integrated into VITL's work should be presented in their final plan by July 2007.

3. Encourage participation by insurers and the Secretary of State, Office of Professional Regulation. This entails providing data feeds for initial population of the LPI.

4. Continue to explore opportunities to link both the Healthcare Workforce Database and the Local Provider Index via electronic data feeds to assure coordination and avoid duplication of data collection.

5. Allocate adequate resources to support the start-up and initial population of the LPI. Ongoing expansion of the LPI (beyond physicians and pharmacists) should be initiated if the cost benefit analysis indicates a reasonable return on the investment.

6. Consider renaming Local Provider Index (LPI) to "Master Practitioner Database" to more clearly represent and differentiate it from other initiatives.

III. METHOD AND TIMEFRAME

Objective 1: Convene Advisory Committee

Two in-depth meetings were held with stakeholders in the health care community which provided a forum to learn about key perspectives on the definition and development of an MPI and to help formulate questions which were then used to conduct secondary source reviews and key informant interviews. The objective of including these parties in the process was to gather a range of perspectives on an MPI as well as building consensus and support for the process, the questions used for key informant interviews, and the overall report development.

Objective 2: Conduct Secondary Source Review

The second task in the report development was to conduct a review of secondary source materials. The literature search helped to augment existing Work Group knowledge and expertise to guide the development of the report and add further understanding to the definition of an MPI. The secondary source review was used to identify examples of other state MPI initiatives and activities. Key informant interviews were conducted with other states (as necessary) to understand more fully their MPI approach and strategy.

Objective 3: Conduct Key Informant Interviews

To augment participation in the Work Group meetings, key informant interviews were conducted with other stakeholders whose schedules prohibited their participation in the meetings or for Work Group members from whom additional information needed to be elicited. In addition, interviews were conducted with other entities, states and individuals which are doing similar work were to obtain comparison information and cost estimates. As end users of the final product, it was important to gather stakeholder input and assistance in advance of drafting the initial report. Accordingly, partners engaged in the dialog and development assumed increased responsibility and ownership of the final report.

Objective 4: Draft Report

A draft report summarizing Work Group input, secondary source and key informant findings was developed and reviewed by the Work Group. As part of this process, stakeholders were presented with sample recommendations for review and provided an opportunity to develop additional recommendations. The final recommendations are included in this report.

Objective 5: Final Report

Work Group recommendations were integrated into the overall report, an executive summary was developed, and the report was finalized.

Time Frame

	September	October	November	December	January
Convene Advisory Committee	▓			▓	
Conduct Secondary Source Review	▓	▓	▓		
Conduct Key Informant Interviews	▓	▓	▓		
Draft Interim Report			▓	▓	
Finalize Report				▓	
Provide Report to Legislature					▓

IV. ADVISORY GROUP/STAKEHOLDERS INVOLVED

The following stakeholders participated in the process:

- ➢ Bi-State Primary Care Association
- ➢ BlueCross BlueShield of Vermont
- ➢ Champlain Valley AHEC
- ➢ MVP
- ➢ Northeastern Vermont AHEC
- ➢ Office of Vermont Health Access
- ➢ Southern Vermont AHEC
- ➢ University of Vermont AHEC Program Office
- ➢ University of Vermont Office of Nursing Workforce, Research, Planning, and Development
- ➢ Vermont Association of Hospitals and Health Systems
- ➢ Vermont Department of Banking, Insurance, Securities and Health Care Administration
- ➢ Vermont Department of Health
  - • Health Improvement Division
  - • Health Surveillance Division
  - • Medical Practice Board
- ➢ Vermont Information Technology Leaders
- ➢ Vermont Medical Society
- ➢ Vermont Office of Professional Regulation
- ➢ Vermont Program for Quality in Health Care

V. PROJECT CHALLENGES

Three significant challenges were presented throughout this project; the first is the interpretation of an MPI by stakeholders. Because two interpretations were identified, the overall volume and complexity of work to be accomplished within the specified time frame was increased accordingly. As a result of this divergence in interpretations, a broader base of stakeholders and research was required. It also required that the nomenclature of MPI be revised to distinguish between the two definitions. The second challenge presented itself during the literature and secondary source review. There is very limited published information regarding the development of an MPI, regardless of the

definition being used. As a result, the vast majority of information obtained to inform this process was collected through the analysis of primary data rather than the review of secondary sources and published literature. The collection and analysis of primary data similarly added to the volume and complexity of completing this task. While an exhaustive review and analysis of MPI-related activities across the U.S. are outside the scope of this particular project, the documentation of MPI development and other efforts in this report has been rigorous and has provided a practical and extensive overview of current best thinking in the field. Finally, there are a number of technology and information exchange projects occurring throughout the state. To a large degree, developing recommendations in advance of critical projects (such as VITL's Statewide Health Information Technology Plan and the development of the Master Claim's Database) is not possible. As a result, many of the recommendations tie the preliminary results of this report to these other projects. Specifically, a more comprehensive MPI planning process as part of VITL's work to create a Health Information Technology (HIT) Plan which is integrated and coordinated across major state initiatives (such as the Blueprint, Master Claim's Database, Global Clinical Record, etc.) has been initiated. As a result of the findings in this study, an HIT preliminary plan, which includes the MPI, is being presented to the legislature by VITL in early 2007 with a more extensive plan submitted by July 2007.

It is also important to note that while this project was the result of a legislative mandate, there was no direct appropriation to support the project. The scope of this report is limited and should not be interpreted as a full feasibility study, but instead, as an introduction to important initiatives that require ongoing examination.

VI. DEFINITION #1: HEALTHCARE WORKFORCE DATABASE

Description

The Healthcare Workforce Database is a set(s) of data which includes descriptive provider information; including but not limited to specialty areas, geographic location, hours worked, email and other data elements, to be analyzed for the purposes of understanding the distribution, composition and capacity of the Vermont health care workforce for a variety of planning purposes including obtaining federal designations of health professional shortage areas (HPSAs), educational loan repayment, educational loan forgiveness, scholarships and other recruitment and retention activities. Stakeholders interviewed reported that the information would also be used to identify practices and practice settings (versus individual practitioners). Practice level information would be used in conjunction with VITL and payer data to examine differences in cost and quality across practice settings.

DATA*
First Name
Last Name
Middle Initial
Title
EDS Provider #
Billing Provider Full Name
License #
Email
Specialty
Status
Site Name/Practice Name
Site Town
Site State
Site Zip Code
Site Phone
Site Specialty
See Medicaid
Accept New Medicaid
New Patients Here
Participate Medicare Here
New Medicare Patients Here
Hospital Privileges
Weeks worked/year
Patient Care Hrs/week

What data is needed/being requested

Interviews with several stakeholders and committee members yielded a list of desired data elements to be contained in this database. The information requested was collected across the type of health care profession: they are listed in aggregate form in the table at right.

While the National Provider Index (NPI) will clearly become a part of the data set needed and collected, it is not uniformly instituted at this time and is not included in the list.

*Definitions of data elements are included in the appendix.

On what professions is data being requested?

The following list includes all professions listed by stakeholders and committee members for which data is being requested (in no particular order):

- Physicians (MD and DO)
- Advanced Practice Nurses
- Physician Assistants
- Registered Nurses
- Psychologists
- Social Workers
- Clinical Social Workers
- Licensed Clinical Social Workers
- Licensed Clinical Mental Health Counselors
- Certified Nurse Midwives
- Dentists

Data Currently Collected by Health Profession (see page 11 for explanation)

Data Currently Collected?
X = Yes

PROVIDER	Physicians	APRN	PA	RN	Psychologists	SW	CSW	LICSW	LICMHC	CNM	Dentist
First Name	X	X	X	X	X		X	X	X	X	X
Last Name	X	X	X	X	X		X	X	X	X	X
MI	X	X		X	X		X	X	X	X	X
Title											
EDS Provider #	X	X	X		X		X	X	X	X	X
Billing Provider Full Name	X	X	X		X		X	X	X	X	X
License #	X	X	X	X	X		X	X	X	X	X
Email	X										
Specialty	X	X	X	X							X
Practicing Status	X	X	X	X							X
Site Name/Practice Name				X							
Site Town	X	X	X	X							X
Site State	X		X								X
Site Zip Code		X		X							
Site Phone											
Site Specialty											
See Medicaid	X		X								X
Accepts New Medicaid	X	X	X								X
New Pts Here	X										X
Participate Medicare Here	X	X									N/A
New Medicare Pts Here	X										N/A
Hospital Privileges	X		X								
Weeks worked/year	X	X	X								X
PT Care Hrs/week	X	X	X								X

The chart on the previous page represents the various data elements that are currently collected; it is important to note that these data elements do not necessarily exist in one dataset. Data is currently collected by state entities such as the Department of Health and the Office of Professional Regulation, or subcontracted to the UVM Office of Nursing Workforce, Research, Planning and Development. As a result, there would be an additional cost and extended time frame for making this data available if these data sets were combined or cross referenced on a regular basis to keep information updated. As illustrated by the chart, numerous data elements are simply not collected. If the request for this data were to be fulfilled, an entity would need to be charged with the task of collecting.

Timeliness of current data reporting

An important issue which stakeholders highlight is the timeliness of the data collection and reporting process. Stakeholders indicate that in order for their planning activities to be accurate and up-to-date, workforce reports must be timely. Several factors were reviewed to understand how existing data collection may be improved to make workforce data available to stakeholders in a timelier manner. For the purposes of this study, timeliness is defined as producing a report(s) one year after collection of data. Issues related to timeliness that were researched include:

- Electronic versus paper submission of surveys
- Mandatory versus voluntary submission of data by health care professionals
- Variations in quality/completeness of data and its effect on timeliness
- Frequency of survey implementation

To understand these issues more extensively, a review of other state health care professional surveys and data collection was completed. This review included analysis of existing health care professional reports as well as interviews with data and workforce analysts. Key findings of this research are found in the following table:

Data Collected from Organizations and State Entities Regarding Health Professional Licensing

The following chart provides information representative of state efforts to collect physician data.

	VT	WI	MN	MA	RI	MD	OR
Data reported X years after collected	2	1 to 3	1	<1	1	1	1
Completeness of survey	Approaching 100%	80%-90%	90% estimated				60%
Response rates	Approaching 100%	90% *	55%	18%	58%	34%	34%
Frequency of data collection	Every 2 years	Sporadic	Every 2 years	Every year	Sporadic	Sporadic	Sporadic
Mandatory or voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary
Electronic or paper	Paper with telephone follow up	Electronic	Electronic	Paper	Paper	Paper	Paper
**Incentive provided? ** **	No	No		No	Yes	Yes	No

* Based upon year 2000 survey. Response rates decreased significantly with implementation of electronic survey; current survey still in data collection phase.

** Incentives for participation in survey activities varied but were nominal in cost overall, representing "door prize drawings" not in excess of $1,000.

Other New England states (CT, ME and NH) are not collecting physician information or were not able to provide information; as a result, they are not included in the chart above.

The Sheps Center at the University of North Carolina has been conducting electronic surveys in conjunction with licensing processes, but relatively few data elements regarding workforce are collected and are not comparable to the scope of work Vermont considers. While the survey process may be a model for Vermont, the volume of work is not comparable and as a result not included in the above chart.

Electronic versus paper submission of surveys

The overall consensus of individuals interviewed was that the electronic submission of data was preferred. The electronic submission was able to tie the workforce surveys more closely to licensing information currently collected as well as reduce the amount of time scanning, coding and performing data entry. However, there was caution about using an electronic format. Some health care professionals, particularly in rural remote areas of the state may not have access to the Internet. This hinders their ability to fill out the survey on line; as a result, some states are supporting a dual system of paper and electronic with the anticipation that the paper system will eventually be phased out.

While electronic submission provided flexibility to submit surveys from home or after hours at the office, help lines established to support professionals were only available during work hours. Finally, problems with the hosting server resulted in lost data during one survey. The overall caution for electronic submission was related to the state's or organization's ability to roll out the electronic submission process smoothly and with significant technical and end user support (help line) so that the electronic submission process was not a discouraging process which may result in lower response rates. The costs for development of an electronic system were estimated at $250,000 to $500,000 for research, development and start-up costs. These costs are based upon infrastructure development and should be expected to increase relative to the number of professions surveyed. They do not include costs associated with staffing telephone help lines or other types of assistance in completing the survey.

Mandatory versus voluntary submission of data by health care professionals

While we did not find any state in which participating in workforce related data surveys or data collection was required to obtain a license or license renewal, the individuals interviewed did feel that it would improve their ability to obtain a higher response rate. It was unclear if mandatory participation in workforce surveys would increase the completeness of data submitted. Individuals interviewed indicated that obtaining completeness may be a function of the system that is established to collect information (such as electronic submission that does not allow missing information or blanks) and may require manual follow-up if more complete data is desired. As with many states, mandatory participation in Vermont would require legislative action for each of the health care professions participating in the survey.

Variations in quality/completeness of data and its effect on timeliness

A review of the information obtained from other states and organizations collecting workforce data indicates that while Vermont may be less timely (with the exception of the most recent Wisconsin survey), there is an inverse relationship between the completeness of data, and response rate; impacting the timeliness of developing reports. Interviews with other states and organizations completing similar surveys target responses that are statistically significant across the entire population. As a result, many states do not have statistically significant data at the county level or specialty level. To obtain the ability to analyze data at a more detailed and statistically significant manner, a much higher response rate would be required, increasing the time and resources necessary to complete the survey and analysis.

- **Census versus Survey** – The Vermont Healthcare Professional Profiles (Vermont's workforce surveys) differ from other conventional surveys. Upon review of Vermont's methodology and data gathered, the survey is better classified as a health care professional **census** rather than survey. A census provides a level of detail which differs from the purpose and scope of a conventional survey. In this way, Vermont's census is unlike any other health professional data collection process. This approach eliminates the need to impute and estimate to account for missing data or low response rates and allows for accurate analysis at the subspecialty and town level. Nevertheless, it is important to recognize that the collection of data may not always require a census. Each effort to collect information should include a thoughtful analysis of the cost/benefit value of a census versus a survey.

- **Frequency of data collection -** Given an aspiration to maintain the current level of specificity and accuracy, and the logic to implement the census concurrent with the licensing process, a more frequent census would not be possible. However, based upon the assumptions that mandatory participation and electronic survey capabilities would improve the efficiency and speed of the census process, therefore potentially decrease the current two year time frame from implementation of the census tool to reporting of data. Finally, using physicians as the example, and as per the most recent available data, there is an approximate 4% of in-migration of physicians (total numbers of physicians versus FTE of physicians) and considering that the physician-to-population ratio continues to increase with the population (a marker that out-migration does not exceed in-migration), it may be reasonable to estimate that the net result of in-migration and out-migration over the course of a 2 year period (current data collection frequency) is 4% - 6%. This would imply that over the course of the 2 year period, 94% - 96% of the data used in the reports are accurate, indicating that the benefit of a higher frequency of data collection may not be balanced by the costs.

Costs

The following table shows data collection costs from various survey processes. Staffing costs are estimated at $45,000 per FTE with an additional 75% for fringe benefits and overhead costs (comparable to Vermont Department of Health fringe and overhead rates). Costs for electronic platform were available from one state and consisted of estimates in staffing FTEs which were converted to dollars. Minnesota contracted with an external firm to complete their electronic system and cost data was not available.

	Number of professions surveyed	Staffing	Complete data and high response rate	Estimated staffing costs per survey	Additional resources to obtain electronic platform	Cost for electronic platform
WI	5	3 FTE	No	$47,250	3 FTE *	$250,000 **
MN	8	5 FTE	No	$49,218	Unavailable *	Unavailable
VT	3	1.25 FTE	Yes	$32,812	N/A	N/A

*   Electronic systems have experienced technical difficulties during their operation.
** This figure represents initial start up costs and excludes costs associated with system revisions, maintenance, and help lines.

Governance, Security, and Data Standards

Standards for governance and security of data would need to be adopted. The reporting and release of data should be carefully governed to protect the privacy of health care professionals participating in the survey.

- What data is considered public and used in public reports?
- Who has access to specific data?
- How does one request access to data? How is access determination made?
- What data analyses are conducted?

Because of the broad number of stakeholders using this information there was a suggestion to develop a standard mechanism for providing input into the development, maintenance and use of the database and the information contained therein.

- Development and use of standardized definitions and common data sets across professions.

Other Findings

1. Information that is written in surveys (versus selected from a drop down box) is prone to human error; as a result, data such as street addresses, emails and other character-based information would require manual cross checking and correction and add additional costs and time.

2. Stakeholders recommend that duplication may be decreased if reports are generated based upon their needs. It is important to clarify the process to communicate both data requests to the entity collecting data and, assuming limited resources, which data analyses will be most relevant to the greatest number of stakeholders. (See Governance.)

3. Based upon the experience of other states, start-up costs to implement electronic solutions may be expensive; adding additional surveys leverages the initial investment.

4. Solutions should be incremental and build upon existing data collection systems. For example, because the sophistication and knowledge regarding physician surveying is significant in Vermont, physicians may be the best health care professional population against which a new framework should be developed. In the future, health care professions can be added incrementally following the refinement of a system for physicians.

5. Current data collection activities have formal and informal review processes similar to an Institutional Review Board (IRB) process to assure appropriateness of collection and analysis of information.

6. Data currently being collected is not collected, analyzed or reported in the same manner. For example, there are disparate definitions of Full-Time Equivalency (FTE) status of healthcare professionals. Because there is a lack of uniformity across these activities, it can make comparisons difficult. Standards for data collection, analysis and reporting which stakeholders agree upon may be helpful to improve these activities.

VII. DEFINITION #2: LOCAL PRACTITIONER INDEX

Description

The Local Practitioner Index (LPI) is a set(s) of data which includes descriptive information that would be combined with health information technology applications to aggregate information across a variety of stakeholders (payers, physician practices, hospitals, etc.) for the purpose of informing health care professionals, organizations and state government to improve quality of care and decrease healthcare costs. Because provider identifying information is different across systems and stakeholders, an **algorithm** needs to be identified for the LPI.

> Merriam –Webster defines **algorithm** *as a procedure for finding the greatest common divisor in a finite number of steps that frequently involves repetition of an operation*; or, *a step-by-step procedure for solving a problem or accomplishing some end especially by a computer.*

In this case, the algorithm is a simple list of variables which allows the technology application to "filter" data so that practitioners are identified with high accuracy, and their data aggregated across the disparate systems. Using this algorithm, data is matched and one unique identifier is assigned to each health care professional. This process creates a link to the various identifiers used among the disparate systems which are being "filtered". The LPI also can be used by physicians to extract their patients and patient-related information for the purposes of managing care more effectively and efficiently. A schematic of the LPI is provided below:

Local Practitioner Index (LPI) Schematic
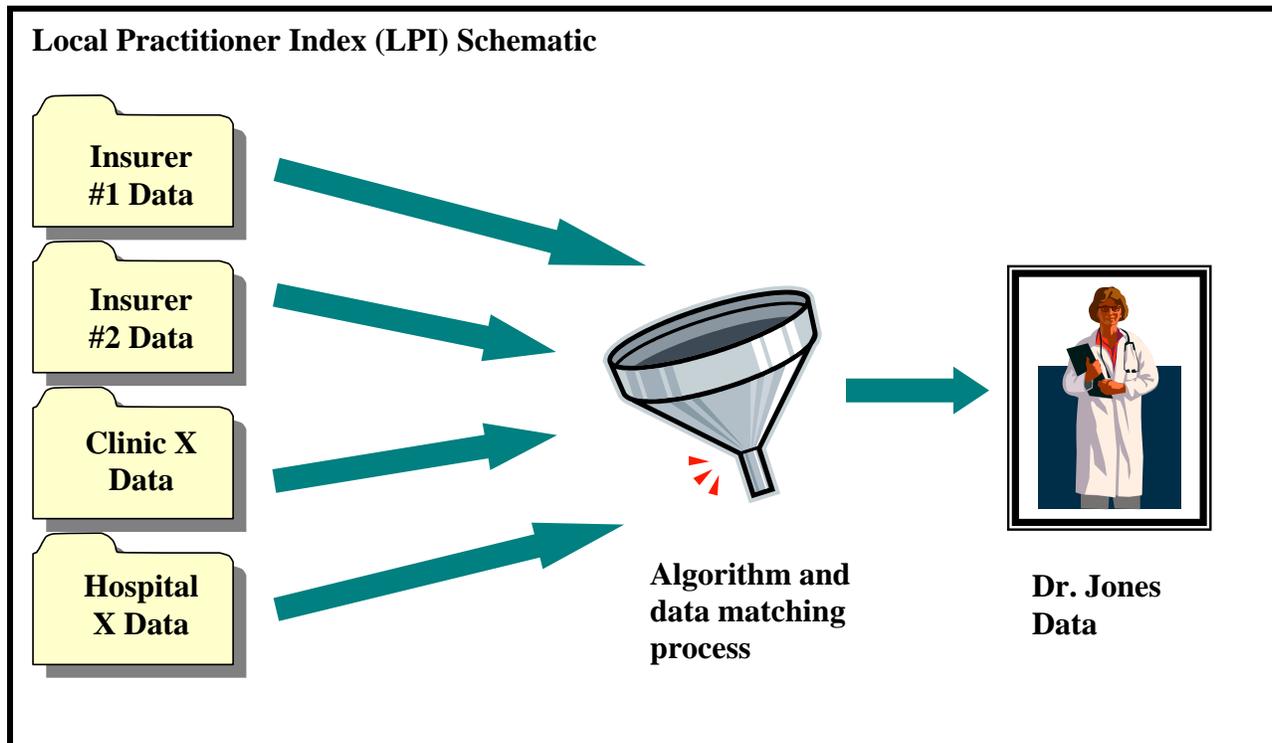
Determining the Algorithm

The development of an LPI is a complex process. The system is designed to obtain existing data in a more accurate and efficient manner; the process by which the data is sorted and matched requires a number of specialized technological approaches. For example, an algorithm is used to help filter and match data across disparate systems. Because data is currently stored in different formats by different entities, it is difficult to accurately identify data linked to a health care professional across all the entities. Add in the potential human error, and the complexity of matching data suddenly becomes compounded. As a result, while any one piece of identifying information may have inherent risk of error (such as street address), using an algorithm (a predetermined but limited set of identifying information such as first name, last name, date of birth, etc.) increases the accuracy of matching records. A number of potential algorithms have been identified which vary from five to thirteen critical data elements to include in the LPI. After review of algorithms used by other states and across the industry, there are various options that would meet the goal of developing an LPI to facilitate data exchange. Identifying a specific algorithm is not an issue of high importance at this time.

Sample algorithm used in the Maine Health Care Claims Data Bank Medical Provider Master Data Dictionary (definition for each data element is included in the Appendix):

Data Processing Center Provider Code
Service Provider
Tax ID Number
Service Provider Facility Name
Service Provider Facility Code
Service Provider First Name
Service Provider Middle Name
Service Provider Last Name
Service Provider Suffix
Service Provider Title
Service Provider State or Province
Taxonomy Code
National Provider Identifier
Unique Physician Identifier

Role of the National Provider Index (NPI)

The Centers for Medicare and Medicaid Services (CMS) are leading the National Provider Index (NPI) initiative. The purpose of the NPI is to uniquely identify a health care provider in standard transactions, such as health care claims. NPIs may also be used to identify health care providers on prescriptions, in internal files to link proprietary provider identification numbers and other information, in coordination of benefits between health plans, in patient medical record systems, in program integrity files, and in other ways. HIPAA requires that covered entities (i.e., health plans, health care clearinghouses, and those health care providers who transmit any health information in

electronic form in connection with a transaction for which the Secretary of Health and Human Services has adopted a standard) use NPIs in standard transactions by the compliance dates. The compliance date for all covered entities except small health plans is May 23, 2007; the compliance date for small health plans is May 23, 2008. As of the compliance dates, the NPI will be the only health care provider identifier that can be used for identification purposes in standard transactions by covered entities.

The NPI will assist in efforts to exchange data by increasing the ability to identify healthcare professionals across disparate systems; therefore, it is recommended at this time to include the NPI as a data element in the algorithm. As a component of the algorithm, it may increase the effectiveness of the data matching process but only in concert with other identifying information due to the innate human error involved in data collection and reporting. As the NPI is implemented, its ability to identify health care professionals across disparate systems will be monitored. Depending upon the level of effectiveness there may be opportunities to simplify or eliminate the algorithm.

Management and Governance

The LPI may be managed and governed by an external vendor, state agency or other organization such as VITL; however, there is not consensus on who should manage and govern the LPI. Because the use of the LPI is to filter data across disparate systems, VITL would have an ongoing need to work with and contract with the vendor for use of the LPI even if VITL does not oversee the management and governance.

Platform

VITL is currently developing a technology as part of its strategy to build a system that supports interoperability in an incremental manner. The significance of this project and relation to the LPI is that this platform can be shared, making the development of an LPI more cost effective. Essentially, the technology platform and associated database which is being developed by VITL can add a new layer in the existing database or add to the string of variables being stored. If an external vendor has responsibility for the upkeep and management, VITL will need to work with the vendor to assure access to the database.

Initial population of database

Initial population of the LPI database can be accomplished by working with an outside vendor to populate the LPI and VITL to gain access to its data platform. Population of the database would require the negotiation of direct feeds of data from organizations housing this information (data elements predetermined as part of selecting the algorithm). These direct feeds of data would be negotiated from all public and private payers (BCBS, MVP, Cigna, and Medicaid) as well as from licensing data such as that from the Secretary of State, Office of Professional Regulation. This data would be merged together by a database manager or equivalent type personnel.

Verifying data

After population and analysis of the data is complete, it is recommended that information be verified for accuracy. This verification can often be done directly with the health care professional through either mass mailing or through personal contact. This may be a labor intensive process and would most likely be completed under contract with an independent vendor.

Options for updating database

Once the database is populated, organizations or individuals must be responsible for updating information as it changes. When health care professionals enter or leave the state, change their location or change their name, there will be the need to provide updated information on a case by case and ongoing basis. As practitioner information changes, those individuals using the LPI will be required to update the database on an ongoing basis. As users submit requests for data, the system will identify errors in matching health care professionals and the information contained in the LPI. This will generate a message to the user who will be required (through a predetermined authoritative contact) to make the appropriate changes in the database. Therefore, numerous individuals will be granted access in a manner that promotes ongoing updating of information, yet maintains the overall system security.

Cost

Basing the development of an MPI upon populating a database of 2000 health care professionals with an algorithm consisting of 5 data elements, assuming the ability to obtain data feeds from payers and licensing sources and assuming that the Master Patient Index can be used as a platform, cost is estimated at no more than $200,000 to populate and verify the initial database. This is not inclusive of ongoing updates, management and other oversight activities, nor is it inclusive of the costs put forth by VITL to develop the initial technology platform. In addition, these costs are based upon the input of data for physicians and pharmacists. Because physicians and pharmaceuticals represent the largest costs to the health care system, an incremental approach beginning with these two professions is a logical starting point. This approach is consistent with approaches by other states and organizations involved in health information exchange

VIII: APPENDIX

DEFINITIONS OF HEALTH CARE PROFESSIONAL DATA ELEMENTS

- First Name - same
- Last Name - same
- Middle Initial - same
- Title – Title of health care professional position
- EDS Provider # - same
- Billing Provider Full Name – Name used for billing purposes
- License # - Professional license number from Office of Professional Regulation
- Email - same
- Specialty – Area of expertise, specifying the type of primary care or specialty care provided
- Status – Active or Inactive in clinical practice
- Site Name/Practice Name – Name of site where health care professional works, if working at multiple sites, professional lists site where in practice for largest number of hours (primary site)
- Site Town - same
- Site State - same
- Site Zip Code – same
- Site Phone - same
- Site Specialty – Area of expertise of the overall practice, specifying the type of primary care or specialty care provided. May list multiple specialties if multiple specialties are provided
- See Medicaid – Does the health care professional see any individuals with Medicaid at their primary site – yes/no
- Accept New Medicaid – Does the health care professional accept any new individuals with Medicaid at their primary site – yes/no
- New Pts Here - Does the health care professional accept any new patients here (regardless of payment type) – yes/no
- Participate Medicare Here – Does the health care professional see any individuals with Medicare at their primary site – yes/no
- New Medicare Pts Here – Does the health care professional accept any new individuals with Medicare at their primary site – yes/no
- Hospital Privileges – At what hospital do they have privileges.
- Weeks worked/year – What are the number of weeks spent providing direct patient care per year (excludes vacation)
- PT Care Hrs/week – What are the number of hours per week spent providing direct patient care (excludes teaching or administration)

Example MPI Algorithm: State of Maine Claims Database Management

Element Name Database Name	Date Required Type/Length	Description	Warnings
MPM901 Data Processing Center Provider Code DPCID	NUMBER (12)	This field contains the unique provider identifier that crosses all payers. This field is the link to the Medical Service Providers file (MCSP014).	This field will change frequently for existing records as the linkage process matures and more provider records are linked. This field is the key to summarizing all claims for a single provider regardless of the payer code.
MPM902 Service Provider Tax ID Number PRVTAXID	01/31/2003 CHAR (10)	This field should contain the provider's tax identification number. For an individual this code is often the social security number. This field is derived from MC026 in the medical claims data.	This field is edited for its presence - not for content. Several payers have repeated the payer specific provider number in this field rather than supplying the tax id number. It is a key variable in the linkage process that associates all identifiers for a single provider. This field is not released.
MPM903 Service Provider Facility Name FACILITY_NAME	01/31/2003 CHAR (60)	This field contains the first name of the practitioner. If the provider is a facility, this field will be blank. This field is derived from MC030 in the medical claims data and from Medical Service Providers file (MCSP008).	
MPM904 Service Provider Facility Code FACILITY_CODE	CHAR (10)		This field is reserved for future use.

Example MPI Algorithm: State of Maine Claims Database Management

Element Name Database Name	Date Required Type/Length	Description	Warnings
MPM905 Service Provider First Name PRVFNAME	01/31/2003 CHAR (25)	This field contains the first name of the practitioner. If the provider is a facility, this field will be blank. This field is derived from MC028 in the medical claims data and from Medical Service Providers file (MCSP006).	This field is inconsistently populated. Although payers were asked to split an individual practitioner's name into its various components, many payers were not able to do so. In those instances the payer name is entirely within the provider last name field (MPM908). This field is not released.
MPM906 Service Provider Middle Name PRVMNAME	01/31/2003 CHAR (25)	This field contains the practitioner's middle name or initial. This field is derived from MC029 in the medical claims data and from Medical Service Providers file (MCSP007).	This field is inconsistently populated. Although payers were asked to split an individual practitioner's name into its various components, many payers were not able to do so. In those instances the payer name is entirely within the provider last name field (PRVLNAME - MPM008). This field is not released. See Medical Provider Master MPM906.
MPM907 Service Provider Last Name PRVLNAME	01/31/2003 CHAR (60)	This field contains the full name of provider organization or last name of individual provider. This field is derived from MC030 in the medical claims data and from Medical Service Providers file (MCSP008).	Although payers were asked to split an individual practitioner's name into its various components, many payers were not able to do so. In those instances the payer name is entirely within this field. For facility records, this field will be blank. See MPM903 for the service provider facility name. This field is not released.
MPM908 Service Provider Suffix PRVSUFFIX	01/31/2003 CHAR (10)	This field contains the generational suffix for the individual. This field is derived from MC031 in the medical claims data and from Medical Service Providers file (MCSP009).	This field is inconsistently populated. Although payers were asked to split an individual practitioner's name into its various components, many payers were not able to do so. In those instances the payer name is entirely within the provider last name field (PRVLNAME - MPM008).

Example MPI Algorithm: State of Maine Claims Database Management

Element Name Database Name	Date Required Type/Length	Description	Warnings
			When populated this field often contains the generational identifier (JR, SR, III), the credentials (MD, DO, DC) or the suffix to the tax ID. This field is not released.
MPM909 Service Provider Title PRVTITLE	01/31/2003 CHAR (10)		This field is reserved for future use.
MPM910 Service Provider State or Province PRVST	03/31/2004 CHAR (2)	This is the two character abbreviation for city as defined by the US Postal Service. This field is derived from MC034 in the medical claims data and from Medical Service Providers MCSP012.	This field is not edited and was not required until 2004. Although the provider location is requested, this field can be populated with the billing location.
MPM911 Taxonomy Code TAXONOMY	CHAR (10)	This field is used to standardize the specialty coding of the provider records. It is based upon the service provider specialty code (MC032) and the linkage activity. A single DPCID will have only one national TAXONOMY code.	This field will change with each release of the medical service provider file as the linkage of provider records offers more detailed information.
MPM912 Unique Physician Identifier UPIN	CHAR (20)	This field contains the UPIN code used by CMS	The UPIN database will be linked at a future date to populate this field. At present this field is blank.
MPM913 National Provider Identifier NPI	3/31/2004 CHAR (20)		This field is reserved for future use.