REPORT OF THE
VIRGINIA HEALTH INFORMATION'S

STRATEGIC PLAN

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

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VIRGINIA HEALTH INFORMATION'S

STRATEGIC PLAN

july 1, 1996 to june 30, 1999

TO THE

BOARD OF HEALTH,

GOVERNOR,

AND

GENERAL ASSEMBLY

VIRGINIA HEALTH INFORMATION'S STRATEGIC PLAN TO THE BOARD OF HEALTH, GOVERNOR, AND GENERAL ASSEMBLY

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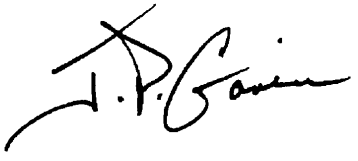
COVER MEMO

The Board of Health
The Honorable George F. Allen, Governor of Virginia
Members of the Virginia General Assembly

On behalf of Virginia Health Information's Board of Directors, I am presenting our Strategic Plan. The plan contains specific proposals to develop information to assist consumers and purchasers when buying health care services or choosing health care providers.

Submission of this plan is a requirement of HB1307 passed during the 1996 session of the General Assembly. If you would like to discuss certain aspects of this plan, please contact me at your convenience.

Sincerely,



John P. Gavin
President

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AUTHORITY PAGE

The 1996 session of the General Assembly passed House Bill 1307 to improve the value and utility of the Commonwealth's health care cost and quality initiatives. (A copy of the most relevant pages (pages 16-20) of HB1307 is attached at Appendix A.) This legislation directs the Commissioner of Health to contract with a nonprofit, tax-exempt health data organization to develop and implement health data projects that provide useful information to consumers and purchasers on health care providers including health plans, hospitals, nursing homes, and physicians. In accordance with §32.1-276.4(A) of the Code of Virginia, the Commissioner has contracted with Virginia Health Information (VHI) to serve as the health data organization that will provide these services.

Section §32.1-276.4(B)(6) of the Code of Virginia requires the Board of Directors of the nonprofit data organization (i.e., the VHI Board) to submit, as appropriate, strategic plans to the Board of Health, the Governor, and the General Assembly. As required by this law, the strategic plans submitted by the VHI Board shall:

- recommend specific data projects to be undertaken and specify the data elements that will be required from health care providers,
- incorporate similar activities of other public and private entities to maximize the quality of data projects and to minimize the cost and duplication of data projects, and
- evaluate the continued need for and efficacy of current data initiatives, include the use of patient level data for public health purposes.

Section §32.1-276.4(B)(6) also requires that the first strategic plan be submitted by the VHI Board by October 1, 1996, and include recommendations for measuring the quality for all health care providers and funding for all data projects undertaken.

In addition to the strategic plans that must be submitted by the VHI Board, §32.1-276.4(B)(5) requires the VHI Board to submit annual reports to the Board of Health, the Governor, and the General Assembly. These annual reports must include a certified audit (attached at Appendix B) and provide information on the accomplishments, priorities, and current and planned activities of VHI.

The VHI Board submits this document as its first strategic plan. This document, and its accompanying attachments also serves as the VHI Board's initial annual report.

EXECUTIVE SUMMARY

Virginia Health Information (VHI) is a nonprofit public/private partnership organized under authority of the Virginia General Assembly for the purpose of collecting, maintaining, and processing health care data in order to create and disseminate information that will assist in informed health care decisions by Virginia consumers, purchasers, providers, and policy makers.

VHI is evolving from a "gatherer/care taker" role with regard to health care data to that of a catalyst for the development of health care information. An extremely important aspect of this evolution is the refinement of our perspective of who is our customer.

Who is our customer?
The VHI Board views its primary customers as the patients (i.e., consumers of health care services as well as the purchasers (payers) of these services). Next, all health care practitioners, providers, and associated stakeholders are considered secondary customers.

What is our role?
This change in perspective as to whom VHI is organized to serve is a change in the role we have been directed to perform. Previously, the Patient Level Data Base had focused VHI's attention primarily on the hospitals within the state. Now we are chartered to produce an efficiency and productivity report which expands our focus to nursing homes. Further, we are directed to develop quality measures; collect, compile, and publish Health Employer Data and Information Set (HEDIS); and collect, review, and recommend applications for outpatient data (currently state data only). Additionally, VHI is to recommend appropriate fees or funding for the accomplishment of these tasks. Clearly, VHI is operating in a new and expanded environment.

How are we doing?
Where is VHI in this evolution regarding focus and responsibilities? In clear and unambiguous language--we are not there yet. Given the statement above, it is appropriate to examine the environment that exists as well as the problems and probability for success.

The VHI Board is in full agreement that health care consumers and purchasers are our primary customers. This understanding provides a solid foundation for resolving all the other issues. Add to this focus the fact that the VHI Board is composed of competent and professional individuals committed to our mission of providing valid and useful health care information, and the probability for success increases markedly.

What are the issues?
The stakeholders to this process--businesses, consumers, health plans, hospitals, nursing homes, physicians, and the state--are in varied positions reflective of their current involvement in terms of data, cost, and expectations.

Hospitals have expressed continued concern that they are the focal point of the majority of data collection and health care reporting efforts. Hospitals also note that they are unfairly burdened with a disproportionate cost burden.

Nursing homes, while similarly concerned about an unequal cost burden, support efforts to utilize federally mandated data collection efforts to develop quality indicators for nursing home profiling.

Both stakeholder groups have expressed commitment to the goal of providing meaningful health care information which reports across the full provider spectrum: health plans, hospitals, nursing homes, and physicians.

Physicians, as a stakeholder group, tend to be disparate in their views which may be a function of their dispersion within the health care matrix and distance from current health care reporting efforts. Generally, the fact that physicians represent such a large segment of the health care provider equation and the nonhomogenous nature of their involvement will pose continuing problems achieving committed consensus to health care information reporting. There are some basic standards which all physicians, as do all stakeholders, expect as a requirement for reporting: data accuracy and proper attribution to reported treatment and procedures.

Health plans are similar to physicians in the context of lack of homogeneity between indemnity and managed care plans. The managed care plans are significantly ahead of other insurance plans in terms of standardized reporting. Finding and establishing a rational comparison tool for health plans poses a major challenge.

Another issue that is shared by physicians and health plans is that of funding participation. To date, these two stakeholders have not been called upon to participate as have hospitals and nursing homes.

The State as a stakeholder in the health care matrix is both a consumer, in its need for health care information to support its policy and legislative functions, as well as a purchaser, in terms of its employees and for the recipients of Medicaid. As such the state is both a primary and secondary customer. While the potential for role conflict exists with regard to the state's multi-layered involvement with VHI, none has occurred nor is expected and, therefore, is not an issue.

Consumers and businesses (primarily small businesses) represent the final stakeholder groups to be addressed. As recipients and purchasers of the products and services of the health care industry, these two groups hold the preeminent position. Their needs are for valid and timely information of sufficient quality to provide the basis for choice making. Their participation in the cost matrix needs to be evaluated.

It is therefore understood and agreed that due diligence is required by VHI to ensure that there is value from the information process and regular validation of the outputs.

In summary of the stakeholders critical issues, we find:

- all stakeholders are dissatisfied with the pace and progress of health care information delivery,
- some stakeholders are dissatisfied with the unequal data reporting and funding requirements,

- all stakeholders are committed to voluntary efforts prior to mandating data and funding requirements, and
- all stakeholders agree on the primary customers--consumers and purchasers.

Moving to other critical issues, the technology required to accomplish VHI's objectives does not fully exist. Certain data elements need to be developed. Examples of these data are:
- quality indicators for both inpatient and outpatient data bases,
- valid and accurate physician identifiers, and
- health plan identification numbers for various coverage types.

Software needed to produce information and reports does exist; however, the methodology must be tested and validated for the specific application. VHI is committed to using existing software and does not plan to invent software applications. Additionally, VHI will seek to link existing data bases prior to expanding data requested. The technology issues, while critical in terms of time required to develop and test, are not insurmountable.

One remaining critical issue is of sufficient magnitude that it could block VHI from accomplishing its primary mission--funding.

Adequate funding is basic to VHI's mission. It is the plan of VHI to seek Participative Funding for projects on an equitable basis that is representative of the public/private partnership that was the foundation of VHI. As noted previously, stakeholder involvement in the development of fee structure and collection protocols will be sought on a voluntary basis prior to requests for mandates.

Given the issues stated above, where does VHI propose taking health care information initiatives in the Commonwealth of Virginia? **The following matrix provides a summary of the proposed major actions over the next three years. These projects are presented in priority order after recognition of mandated efforts.**

This is an Executive Summary and as such is not an exhaustive examination of the issues facing VHI. The VHI Board wishes to convey the complexities involved in bringing viable and understandable health care information to the consumers and purchasers within the Commonwealth.

Matrix of VHI Strategic Plan Products and Services

Initiative and Description with 3-Year Costs	Current Status	Affected Entity	Leg Action	Year 1 July 1, 1996-June 30, 1997			Year 2 July 1, 1997-June 30, 1998			Year 3 July 1, 1998-June 30, 1999		
				Action	Cost	Funding	Action	Cost	Funding	Action	Cost	Funding
Patient Level Data- inpatient hospital discharge data; widely used by health consultants, providers, state planners, and public health officials for quality improvement, planning, and population analysis **Cost $1,069,485**	Ongoing since 1993	Hospitals	Yes, for years two and three: General Fund Appropriations increase	Continue operation and enhancements, survey users to determine value and identify improvements	$335,8450	$288,000 General Fund Appropriations, $47,845 balance from hospital fee collections under PLDB authorization	Continue operation and enhancements, survey users to determine value and identify improvements	$357,875	$300,000 General Fund Appropriations, $57,875 balance from hospital fee collections under PLDB authorization	Continue operation and enhancements, survey users to determine value and identify improvements	$375,765	$300,000 General Fund Appropriations, $75,765 balance from hospital fee collections under PLDB authorization
Include Physician Identifiers on Hospital Discharge Data Files **Cost minimal**	A study to determine whether physician identifiers are accurately assigned by hospitals is to be conducted	Reporting will affect physicians; although hospitals are responsible for reporting	None	Complete validation study by 12/1/96 and present results to VHI Board. In areas where information is accurate release identifiers for discharges on or after 4/1/96	Minimal mailing and staffing costs for VHI, hospitals, and physicians	Internal to affected parties	If not already added, include remaining identifiers on tapes. Repeat validation samples where problems in validation remain. Add physician identifiers where results improve to acceptable level	None	NA	If not already included, add remaining identifiers to tapes. Repeat validation samples where problems in validation remain. Add physician identifiers where results improve to acceptable level	None	NA
Efficiency and Productivity Methodology– ***Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes*** **Cost $800,000**	Base methodology developed	Hospitals and Nursing Homes	None	Publish report in early 1997 with minor revisions	$300,000 includes $50,000 for revisions and efficacy study	Special Dedicated Revenue (SDR) from hospitals and nursing homes	If efficacy demonstrated, continue publication with revisions as needed	$250,000	SDR from hospitals and nursing homes	If efficacy demonstrated, continue publication with revisions as needed	$250,000	SDR from hospitals and nursing homes

Initiative and Description with 3-Year Costs	Current Status	Affected Entity	Leg Action	Year 1 July 1, 1996-June 30, 1997			Year 2 July 1, 1997-June 30, 1998			Year 3 July 1, 1998-June 30, 1999		
				Action	Cost	Funding	Action	Cost	Funding	Action	Cost	Funding
Consumer Publications-develop and distribute publications for consumers and purchasers with basic descriptive and comparative information on provider services, capabilities and costs where relevant **Cost $90,000**	In planning	Health Plans, Hospitals, Nursing Homes, Physicians	None	Provider-specific guides with basic information on health plans, hospitals, and nursing homes; make available on the Internet; begin physician information development	$30,000	Revenues derived from participative funding protocol to be developed	Complete development and print physician publication; assess value of all; update others if value demonstrated; continue Internet availability	$30,000	Revenues derived from participative funding protocol to be developed	Continue evaluation of all; continue Internet availability; reprint if value demonstrated	$30,000	Revenues derived from participative funding protocol to be developed
Quality Initiatives-geared to developing quality measures for all providers to benefit consumer and purchaser decisions **Cost $678,750**	Approved by VHI Board, awaiting General Assembly action	Health Plans, Hospitals, Nursing Homes, Physicians	Yes, Strategic Plan must be approved	Conduct market research r/e consumer and employer needs for quality measures for all providers; secure funding commitments from task force; develop work plan	$226,250	Revenues derived from participative funding protocol to be developed	Continue work plan; develop quality indicators for specified providers and field test	$226,250 to be modified	Revenues derived from participative funding protocol to be developed	Publish reports on providers; begin evaluation of efficacy	$226,250 to be modified	Revenues derived from participative funding protocol to be developed
Consumer Satisfaction Measures-will allow consumers and purchasers to compare health plans and insurance products **Cost $2,750**	In planning	Health plans and insurance companies	None first year	Develop consumer satisfaction measures applicable to all types of health care coverage	$2,750 for meetings	Revenues derived from participative funding protocol to be developed	Make recommendations to Board, Governor and General Assembly on costs, funding sources, and need for legislative action	To be developed	Revenues derived from participative funding protocol to be developed	Contingent on General Assembly actions	To be developed	Revenues derived from participative funding protocol to be developed
Standard Health Plan Id Number for PLDB-will result in improved information on outcomes of hospital care by type of insurance coverage **Cost $2,000**	Committee being formed	Hospitals and Health plans	None	Implementation schedule by February 15, 1997	$1,000 for meeting costs, providers bear their internal costs	Revenues derived from participative funding protocol to be developed	Implement revised payer identification, evaluate utility, add to data files	$1,000 costs to VHI to revise file structure and outputs	Revenues derived from participative funding protocol to be developed	Incorporate payer group information into cardiology study if possible	None	NA

Initiative and Description with 3 Year Costs	Current Status	Affected Entity	Leg Action	Year 1 July 1, 1996-June 30, 1997			Year 2 July 1, 1997-June 30, 1998			Year 3 July 1, 1998-June 30, 1999		
				Action	Cost	Funding	Action	Cost	Funding	Action	Cost	Funding
Obstetric Study- comparison of rates, LOS, charges, etc. for various types of deliveries in the Commonwealth, provides educational and comparative information for consumers, purchasers, and providers **Cost $35,000**	A survey is undergoing design to determine the value of the previous report and possible enhancements	Hospitals and physicians, variations by type of insurance coverage if possible	None	Administer and act on survey; if value demonstrated, reconvene obstetric panel; refine risk adjustment methodology	$15,000	Revenues derived from participative funding protocol to be developed	Validate provider data, provide review and comment to all affected, publish revised obstetric guides in winter 1988	$17,000	Revenues derived from participative funding protocol to be developed	Assess value and need for updated version	$3,000	Revenues derived from participative funding protocol to be developed
Cardiology Study-a consumer/purchaser directed study to compare outcomes of care on cardiology by geographic region and providers **Cost $85,000**	No action to date	Hospitals, physicians or physician groups and type of insurance coverage if possible	None	Research existing studies, form study group, develop preliminary information, identify additional data needs	$25,000	Revenues derived from participative funding protocol to be developed	Develop and test risk adjustment methodology, provide initial findings to providers	$25,000	Revenues derived from participative funding protocol to be developed	Publish cardiology report	$35,000	Revenues derived from participative funding protocol to be developed
Enhance Inpatient level Data System Information **Cost $5,000**	Enhancements identified and budgeted. Surveys to be sent to users to maximize utility of information	This is a VHI effort and requires no additional data collection	None	Add readmission and transfer indicators to patient level data system. Add "expected" values for LOS, charges, mortality and complications	Approximately $5,000 of costs to develop these enhancements	VHI existing revenues from patient level data system funding	Assess need for additional enhancements	NA	VHI existing revenues from patient level data system funding	Develop other enhancements as needed; poll users to assess value	NA	VHI existing revenues from patient level data system funding
Outpatient Data System **Cost $20,000**	$20,000 VHI study to develop approach to processing, editing, and creating useful data sets to support multiple use completed	Data supplied by DMAS & DPT, covers hospital, ambulatory surgical centers, Dr services, office visits, laboratory, and Rx care	Yes, for funding of pilot	Develop concrete example of beneficial study through panel of providers, consumers, and researchers to demonstrate value of fully-funded system	$20,000	General Funds Appropriations	Based on panel recommendations, fully fund system or cease mandate for outpatient data as currently legislated	To be determined	To be determined	Contingent on General Assembly Actions		

Initiative and Description with 3 Year Costs	Current Status	Affected Entity	Leg Action	Year 1 July 1, 1996-June 30, 1997			Year 2 July 1, 1997-June 30, 1998			Year 3 July 1, 1998-June 30, 1999		
				Action	Cost	Funding	Action	Cost	Funding	Action	Cost	Funding
Other Health Care Information-a task force will recommend other summaries and compilations based on data provided by hospitals & nursing homes **Cost Minimal**	No action to date	Will utilize data already provided by hospitals and nursing homes	None	Assemble task force; review existing data; design other summaries & compilations; publish and disseminate	minimal	NA	Assess utility of publication; incorporate improvements if value demonstrates; publish revised document; consider development of other publications	minimal	NA	Assess utility of publication; incorporate improvements; evaluate need for other publications	minimal	NA
Total $2,787,985					**$960,845**			**$907,125**			**$920,015**	

ORGANIZATIONAL MISSION

Virginia Health Information's (VHI's) mission is to create and disseminate health care information to promote informed decision making by Virginia consumers and purchasers and enhance the quality of health care delivery. VHI will develop information on health plans, hospitals, nursing homes, and physicians. It is expected as health care changes so will the information required. There will always be a focus on the needs of consumers and purchasers of health care.

This mission is being realized through the development of relationships between those in need of information, those providing health care services, and those that can translate health care data into viable information. These relationships help to create an environment where credible, unbiased, and timely information is readily available to all health care stakeholders.

In a changing world, today's best products may have little value in the future. All VHI's activities will be examined regularly in terms of relevance to market needs.

STRATEGIC ANALYSIS

CRITICAL ISSUE

The most critical issue facing Virginia Health Information (VHI) is the determination of whether our efforts ***add value*** to the health information matrix. If VHI does add value, then:

- our multiple stakeholders will be active participants in the process,
- funding will be resolved because the interested parties will perceive value for their money, and
- consumers and purchasers will be positioned to make better healthcare decisions.

This statement is not made naively. VHI recognizes that each of the factors addressed above will be in a constant and evolving state of unrest. However, when viewed over time and against anticipated outcomes, the question of value will be apparent to the majority of those involved.

GENERAL ANALYSIS OF EXTERNAL ENVIRONMENT

Across the country, innovative and diverse efforts are underway by states to provide useful information about health care plans and providers. Minnesota, New York, and Utah are developing patient satisfaction information on health plans. Pennsylvania recently released information on heart attacks comparing health plans and physicians. Washington has a broad array of information available from its birth, death, and other registries. In Massachusetts and Wisconsin, efforts are underway to measure the quality of care in nursing homes. How does Virginia compare across these and other areas? While not a leader in new health care information ideas, VHI is helping the Commonwealth build on other states' work to produce focused and cost-effective information.

Authorized by the General Assembly in 1993, Virginia followed 37 states with a mandate for data collection. Approximately half of those states make related files and reports available to the public. Virginia collects information on every hospital discharge. This inpatient level data base contains similar information to those of other states both in the scope of information collected and quality of data. While this information is valuable, nationally the most comprehensive systems collect much more detailed clinical information on laboratory test results, values from tests, and other factors very important to quality assessment for certain conditions. This type of collection effort can be focused to specific conditions or the most severely ill; however, there is a high price for the best available information.

Who pays for these efforts varies. Special and dedicated funds are used by some states (e.g., Pennsylvania) with others relying almost exclusively on general funding to process, analyze, and disseminate the data with providers absorbing the costs of submission. Virginia employs a combination of these strategies. As in other states, hospitals bear significant costs to produce the information. The cost per discharge in Virginia is $.38 compared to $1.27 in states with similar systems. The cost for

detailed record abstraction is very high. The Pennsylvania Health Care Cost Containment Council (PHC4) estimates that hospitals take between 15-20 minutes to collect this information for every record at a cost of $15-$20 per record. In Virginia this would amount to $11 million-$15 million in hospital-borne costs.

OPPORTUNITIES

In their opening statements to "Accountability and Quality in Health Care: The New Responsibility", Leona Markson and David Nash note that in the last ten years, health care quality measurement thinking has been transformed from "quality is impossible to define" to "quality can be graded and reported on the front pages of newspapers". Whether this dramatic shift is due to great improvements in information technology, or a demand for accountability, or both is a matter of much debate. Efforts at measuring and improving quality are taking place by providers, businesses purchasing care, states, and the federal government. Motivations for these activities are to improve the outcomes of care, increase accountability, and assess the value of services.

Two examples of information projects that have captured the Virginia Health Information (VHI) Board's interest include a project to develop patient satisfaction information on health plans and a study comparing heart attack survival rates.

Consumer Survey The Minnesota Health Data Institute (MHDI) is a non profit organization that includes many of the same types of health care constituents as VHI. Using significant funding from the state, business, and payers, MHDI developed and published a newspaper insert with over one million copies titled "You and Your Health Plan". Several key features of this publication bear mentioning:

- the development involved a broad range of care, providers, and interested parties,
- health plan information was not limited to HMOs; it spanned all types of insurance, and
- it was designed primarily for the public and distributed widely.

After publication, MHDI undertook a formal evaluation of the utility and value of the project. This evaluation was intended to determine the desirability of a second project and help improve the value of such a project if undertaken. Based on this evaluation, MHDI is proceeding with the development of a revised publication geared to consumers and employers. You will see that VHI is proposing a patient satisfaction survey to be developed for Virginians in Section V, Long Term Objectives.

Coronary Studies A second example of a dissemination project the VHI Board has reviewed was produced by the Pennsylvania Health Care Cost Containment Council (PHC4). In previous years, PHC4 has published their *Consumer Guide to Coronary Artery Bypass Graft Surgery*. Those publications have developed into severity-adjusted information on the charges and mortality rates of Pennsylvania hospitals and physicians.

In June 1996, PHC4 published regional guides titled *Focus on Heart Attack*. This most recent publication details information on the causes, treatment, and prevention methods for Acute Myocardial Infarction (AMI). The publication then provides risk-adjusted information by hospital, insurance groups, and physician groups. VHI is proposing a study on cardiology described further in "Long Term Objectives".

Other significant opportunities for Virginia are the development of the outpatient data base and improvements to the *Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes.* Outpatient data collected in Virginia is unique in that it is not limited to outpatient surgery; the case in 17 other states. Comprising all care provided to Medicaid beneficiaries and state employees, legislatively authorized data have the potential to provide important information on the health of these populations as well as what care produces the best results for the lowest cost. A wide audience exists for this information including consumers, providers, and purchasers. If complete funding is developed, Virginia will have the most comprehensive data available to support a host of initiatives for a given population.

With the third year's publication of information developed from the efficiency and productivity methodology data, important year-to-year comparisons can be made of hospitals and nursing homes. This methodology is similar in concept to publications produced by other states and private companies. The resulting *Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes* is a product found useful for providers and the business community; however, major improvements are still warranted.

New initiatives described in this plan will broaden the scope of information. To date, Virginia has lacked published information on health plans/insurers and physician performance. These areas are increasingly important nationally and in Virginia and need to be addressed.

The initiatives will benefit from the successes of other states. The result will be a balanced and integrated source of health care information placing the Commonwealth at the forefront among states at pragmatic and cost-effective information development.

General Analysis of Internal Environment

Strengths and Limitations

Virginia Health Information benefits from a host of professional relationships with other Virginia and national organizations. Through these relationships, access to and assistance with development of new information, details of national health information activities, and technology integration are facilitated. These organizations are referenced in greater detail under "Capabilities and Resources". Many of these organizations demonstrated their support and value to VHI as participants in our strategic planning process.

The inpatient level data base is of tremendous value to the Commonwealth as its inpatient hospital discharge data contains current and increasingly accurate information on all hospital discharges. A number of useful variables are calculated from the base information hospitals report making the information more valuable to the many groups and individuals using this information. Data collected under the current efficiency and productivity methodology has also matured and become increasingly reliable, making data a strategic asset to VHI and the Commonwealth.

With the surge in health care analysis, advanced computer software has been developed to collect, edit, calculate, and maintain this data reliably. Low cost "off the shelf" analytical software allows analysis from basic profiling of information to complex comparisons of providers which "levels the playing field" by adjusting for differences in the severity of illness among patients. This market place technology response allows VHI and others to perform complex analytical studies without significant start-up and infrastructure costs.

VHI staffing represents both a strength and limitation. The strength is the low overhead that results from a staff of four persons who maintain operations and oversees contractors. However, the limitation arises from having limited staff resources which constrains internal projects and caps our ability to manage multiple contractors.

Other limitations emerge when analyzing VHI's ability to accomplish strategic objectives outlined in this plan:

- The data processing requires significant resources for storage, processing, and analysis. There are roughly 30 outpatient records for each inpatient record . There are no funds currently allocated for outpatient data.
- Funding for programs is not clearly defined or established. While it is reasonable for revenues collected from hospitals and nursing homes to be applied only to projects associated with these providers, legislative requirements require other activities not covered. For example:
  - ➔ a requirement to publish HEDIS or other voluntarily provided information, and
  - ➔ a requirement to develop other cost and quality information.
- General appropriation funds are currently directed only to the inpatient level data base. These funds covered just 84% of costs for the last fiscal year. *One planned measure to address these concerns will be the creation of a taskforce to determine Participative Funding.*

Note: The interest in, uses of, and development of the Patient Level Data Base represents a major success for the Commonwealth and VHI. For more information, please review Efficacy of the Patient Level Data Base found in Appendix C

Current Products and Services

VHI has and will develop products in demand. Products will be directed to the needs of consumers, purchasers, providers, and the Commonwealth.

Inpatient Level Data Base (IPLDB) and Reports These are existing products and will continue to be refined and evaluated for relevance. These products are used primarily by health care consultants, insurance companies, providers, and state agencies. A detailed discussion of the uses of patient level data for public health purposes with examples may be found in Appendix D. Consumers and purchasers benefit from reports produced from these products such as the *Guides to Obstetrical Services* and other studies proposed in this plan. General Funds for the IPLDB was originally $300,000 for FY94 and FY95 and was reduced to $288,000 for FY96 and FY97. General Funds covered approximately 84% of the costs for FY96 with VHI revenues from custom reports, data licensing fees, and special projects making up the difference.

Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes This publication is derived from the efficiency and productivity methodology developed to identify the most efficient and productive hospitals and nursing homes. Until June 30, 1996, the methodology has been the responsibility of the Virginia Health Services Cost Review Council (VHSCRC). With the closure of the VHSCRC, VHI has assumed responsibility for the continued development and production of the methodology as well as resulting publications.

The efficiency and productivity methodology was designed for the VHSCRC by the Williamson Institute. A series of calculations are performed from hospital and nursing home information. Resulting data ranks hospitals and nursing homes on the efficiency and productivity of their operations.

The publication is mainly geared to hospitals and purchasers of health care. Information is detailed and the significance of the results might not be apparent to the consumer. The *Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes* will be continued with a publication projected for this winter using 1995 data already received and currently undergoing validation. Future publication of this report will be subject to an evaluation of its efficacy.

Other Efficiency and Productivity Information During the 1996 session of the General Assembly, a number of groups expressed interest in the VHSCRC's *Hospital and Nursing Homes Industry Trends* publication. HB1307 requires VHI to prepare and make public summaries and compilations based on data provided by hospitals and nursing homes. To assist this, VHI will assemble a task force to develop other information from data collected. Special attention will be given to developing information for consumers, employers, and health planning interests. A work plan will be submitted to the Virginia Department of Health with actions and time tables to accomplish initial development during the second year of operation.

Capabilities and Resources

Strategic direction is established by VHI's Board which provides direction to staff and a wide range of associate organizations for the development of products and production of health care information.

Board of Directors VHI's Board brings focus and input from business, consumer, provider, and state interests. This varied input is instrumental in guiding VHI's overall direction. The 17 Members of the Board are nominated by trade organizations for each broad group.

VHI's Board meets at least six times a year. The officers of the Board also form an Executive and Nominating Committee. Adhoc committees are formed to assist in information development for Board action.

Staff VHI's staff have broad and varied experience in administration, information systems, health care data, data analysis and programming, publications, and technical writing. VHI staff include:

- Executive Director,
- Executive Assistant,
- Programmer/Analyst, and
- Secretary/Receptionist.

Through June 30, 1996, VHI staff developed Virginia's inpatient level data base, designed databases and reports, and coordinated related activities. New tasks include work related to the efficiency and productivity methodology and other activities described in this plan and not subcontracted.

Associate Organizations VHI has a history of working with other organizations across the state. These professional associations extend VHI's ability to function cost effectively and produce more relevant and useful information. At VHI's strategic planning retreat in June 1996, many of the groups described below indicated their interest in collaborating with VHI on future projects. Most of these organizations have worked with VHI staff on earlier projects or initiatives. The following organizations bring national and local expertise in many fields related to VHI's mission:

- Commonwealth Clinical Systems, Inc.--data processing and database development,
- David G. Williamson, Jr. Institute, Medical College of Virginia--efficiency and productivity methodology,
- National Association of Health Data Organizations--national perspective on health data issues,
- Richmond Area Business Group on Health--cosponsor of Obstetric Guides and potential future projects,
- University of Virginia School of Medicine, Department of Health Evaluation Sciences--health services research,
- Virginia Business Magazine--cooperative efforts to disseminate VHI reports,
- Virginia Health Information Management Association--medical records coding issues, and
- Virginia Health Quality Center--project development and statistical analysis.

VHI will continue to employ the skills and knowledge of the many associate groups in the Commonwealth.

Technology Technology continues to play an important role in how information is collected, analyzed, and disseminated. VHI is working with the Virginia Department of Health (VDH) to explore using their extensive high-speed telecommunications network to further speed transmission of inpatient data, provide confidentiality, and reduce the costs of data processing. Data processing costs are further reduced by using low-cost microcomputers and off-the-shelf computer programs to process, edit, and correct data.

Evolution of Virginia Health Information

The Joint Commission on Health Care conducted a study in 1995 on the effectiveness and organization of the Commonwealth's health care cost and quality data initiatives. This study was conducted pursuant to House Joint Resolution 513 of the 1995 Session of the General Assembly. In summary, the Joint Commission found that most of the reports and data initiatives of the Virginia Health Services Cost Review Council (VHSCRC) had limited value in the marketplace and were used very little by consumers, employers, insurers, and providers.

Of all the reports which were published by the VHSCRC, the Joint Commission's report found that the efficiency and productivity reports on hospitals and nursing homes had the most promise for meeting the information needs for health care purchasers. However, the lack of quality indicators for these reports significantly hindered their usefulness in the market place.

The Joint Commission found that the Patient Level Data Base, which VHI has administered since its inception in 1993, had the most value of any of the past initiatives and had the greatest potential value in the marketplace. Another significant finding of the study was that there was an overlap and duplication in the activities and responsibilities of the VHSCRC (17-member Council) and VHI (17-member Board of Directors).

As a result of the Joint Commission's study, legislation (House Bill 1307) was passed by the 1996 Session of the General Assembly which eliminated the VHSCRC and most of its data initiatives and merged the efficiency and productivity methodology into the activities of VHI. The VHI Board was viewed as representing all of the key stakeholders and having the capability to meet the information needs of the health care marketplace. Accordingly, the legislation passed by the General Assembly tasks VHI with identifying, developing, and administering data projects which produce useful and valuable information for health care consumers and purchasers. Additional information on Virginia Health Information may be found in Appendix E.

STRATEGY

Virginia Health Information's (VHI's) strategy is to bring order (on a reasonable scale appropriate for the Commonwealth) out of the mass of health care data. VHI endeavors to convert this data into useful information considering the priorities of our stakeholders and the needs of our customers. VHI will produce and publish this information in the format and media that is designed for the target audience.

VHI intends to continue to subcontract and work through partnerships for the development of new products. This approach is reflected in our subcontracting of data processing, statistical analysis, hospital obstetrical services survey, and publication design. Further, an appraisal of our ongoing initiatives must take place if we are to remain relevant and effective. Surveys have been part of our development activities; they will continue. Consumer focus groups are important in the critique of approaches and products. They will be proposed as a budgeted item of new initiatives. VHI intends to avoid duplication and promote cost-effectiveness. Use of competitive negotiations and bidding will ensure that VHI is a good steward of public and private funds.

LONG TERM OBJECTIVES

This section sets forth VHI's plans with regard to major projects targeted for completion over the next three years. These projects reflect the combined input of our Board, stakeholders, associated organizations, contracted commitments, and legislative directives. Having been considered over multiple planning sessions, VHI ***recommends*** these projects as efforts that are reflective of our Mission and which will add value within the health care information matrix.

NEW PRODUCTS AND SERVICES

Health Plan, Hospital, Nursing Home, and Physician Publications and Information
Appendix F provides a summary of what surveys and focus groups revealed about information consumers and employers wanted regarding health care providers. Repeatedly, issues of cost, education/training, years of experience, location, availability, and relationships between providers surfaced. General survey information specific to health plans, hospitals, insurance companies, nursing homes, and physicians will be collected. Information currently collected and publicly available will be integrated with other information voluntarily collected and independently verified. This information will be made available in printed form and on the Internet in 1997 and 1998. These are new products with estimated costs of $30,000 annually. VHI will fund this effort from the collections resulting from the Participative Funding process addressed later in this report.

Consumer Satisfaction Consumer Satisfaction with insurance companies and health plans will be developed. While the prevalence of managed care is rising in Virginia, information limited to managed care plans is inadequate in today's health insurance marketplace. "You and Your Health Plan", is a publication developed in Minnesota to compare all types of health care coverage. The information was developed by the Minnesota Health Data Institute, a nonprofit organization. Funding for this $1.2 million dollar effort came from insurance companies, purchasers, and the state.

VHI envisions consumer satisfaction information being collected from health plans using a standard collection tool. VHI favors using existing tools where possible and has the support of the Virginia HMO Association in this regard. This is a new Virginia effort. To date, insurance companies and health plans have not been involved in producing or funding information for the Commonwealth of Virginia/VHI partnership. During this first year, insurance companies will be asked to develop similar consumer satisfaction information. In addition to its value to consumers and purchasers, this effort is intended to meet the needs of insurance companies and health plans for internal evaluation. Funding will be established through the funding protocol developed by the Participative Funding task force. Results of the voluntary development activities will be presented to the General Assembly in VHI's Annual Report due on or before October 1, 1997. Based on the progress made, VHI will make recommendations on whether voluntary efforts are succeeding or if legislation requiring participation should be mandated. Information will also be provided on the expected cost and who should pay for it.

Measuring Quality for All Providers A major new focus for VHI is to develop a broad range of quality of care information for consumers and purchasers of health care. VHI must determine what types of information, including quality indicators, consumers and employers want to know about providers and plans. Some preliminary results are discussed in the Appendix "What Consumers Want to Know". More information is needed.

VHI is proposing to guide the development of quality indicators for each provider. Through literature reviews, surveys, and focus groups, VHI endeavors to gain a clear sense on what these groups want. These ideas will be studied for feasibility, and cost estimates will be developed. An equitable funding protocol to fairly distribute costs will be used to fund these projects.

This is a major change from first mandating a program and subsequently determining the demand. We believe this is an equitable and pragmatic approach to developing quality of care information.

This approach is intended to insure the integrity and utility of a project before major efforts are expended. The participative funding protocol is expected to contribute at least $300,000 to this effort in the first year. Subsequent amounts will depend entirely upon the scope of the quality development effort.

Obstetric Study In June 1996, VHI published a *Guide to Obstetrical Services* with the assistance of the Virginia Hospital and Health Care Association (VHHA). The guide provided regional information on rates and charges of various delivery types, types of obstetrical services, and other consumer-geared information. The hospital and geographic region were the source for comparison.

VHI will conduct a survey to determine the value of the initial report, determine whether it should be repeated, and, if so, how it could be improved. Businesses, consumers, and hospitals have asked for the level of information to be expanded to include physician-specific information. It is expected that if a second version is developed, it will involve physicians directly in the data validation process and result in physician-specific rates of cesarean delivery and related information. The delineation of cesarean rates by type of health insurance coverage will also be evaluated. Based on the previous publication, this project is anticipated to cost approximately $35,000. VHI will fund this effort from the collections resulting from the Participative Funding process addressed later in this report.

Note: A three-year plan with detailed information regarding current status, affected entity, legislative action, cost, and funding is found in the "Executive Summary".

Cardiology Report Cardiac disease is a leading cause of death in Virginia and the United States. Nationally, cardiac studies are the second most reported topic, second only to obstetric care. The number of people affected, costs of care, and variations in outcomes of treatment are the primary reasons for study selection. VHI is planning a study on the outcomes of cardiac care using current inpatient data as a core data set.

This study and publication will be designed to produce information on hospitals, insurance coverage type, and physician/physician groups (Other studies have indicated the number of cases treated by physician is too small to be statistically reliable. If this is true, validated information will be limited to the physician's group practice.)

An advisory group will be formed to develop an analytical process, report design, and funding sources.

Note: A three-year plan with detailed information regarding current status, affected entity, legislative action, cost, and funding is found in the "Executive Summary".

Outpatient Data State-funded outpatient data (Medicaid and state employee) containing information on hospital outpatient, ambulatory surgical centers, physician office, laboratory, and pharmacy services has been collected and subjected to feasibility analysis. The range of services reported in the data was viewed as valuable in providing the public with important information on comparisons of the costs, outcomes, and morbidity between inpatient and outpatient care. Providers can develop the best mix of services to maximize benefits from treatment. Public health uses are enormous for research, care provided on an outpatient versus inpatient basis, outcomes and costs of care, injury information, and a whole range of information on morbidity associated with acute and chronic diseases. The value and utility of this potential data source is supported by the VHI Board.

VHI recommends a continued pilot study using existing outpatient data and a study group to cost-effectively guide several demonstration analyses. The results from this analysis and ensuing recommendations will be a part of VHI's 1997 annual report to the Board of Health, Governor, and General Assembly.

There are no current funds available for processing and deriving usable data sets and reports. VHI is seeking $20,000 in General Funds to continue the study of the efficacy of these data.

Note: A more detailed review of outpatient data is addressed in Appendix G.

Patient Level Data Base Enhancements Patient level data has been found to be useful by many organizations across the country. VHI has routinely interviewed data users and conducted internal discussions to develop recommendations for enhancements to the system and its products. Based on this input, a number of data fields not initially included in public use files have now been added. The manner in which derivative fields are calculated such as a patient length of stay, complication codes, and others have also been subject to outside review. Finally, the manner in which information is available has received input. The proliferation of inexpensive CD-ROMs has allowed VHI to make data available to a wider audience.

Several enhancements are planned using existing data elements. While they will add value to the information, they require no new collection efforts. Briefly, they involve:

- A readmission and transfer indicator to better support longitudinal studies and quality assessment activities. Currently in design phase, input will be sought from researchers, providers, and others to maximize its value while ensuring patient confidentiality.
- Physician identifiers that have been collected since 1993 have greatly improved in accuracy. The release of these identifiers is subject to achievement of a VHI Board-established accuracy benchmark. VHI began educational efforts with the hospital and physician community directly and through their trade associations in 1995. The goal of this educational process was to promote awareness and consistency in reporting. A validation study will be conducted to assess the accuracy of this reporting.
- An "expected" index of how a current case compares to the outcomes of length of stay, complications, and mortality are in planning. These indices will use extensive research performed by the developers of the 3M All Patient Refined-Diagnosis Related Group classification system used by VHI, over a dozen states, and hundreds of hospitals across the country.
- Hospital-reported payer identification--currently only the payer's name is provided when product category information such as Medicare, Medicaid, POS, HMO, PPO, etc. may be more useful for policy and consumer information. In today's changing health care industry, additional information on the type of coverage is important. While there are some new standards emerging that may improve this reporting, no clear solution has been found. VHI is establishing a study group made up of payers, hospitals, and other appropriate representatives to find a solution for this matter.
- VHI is exploring the feasibility of linking the mother's hospital discharge record with the baby's birth certificate information to obtain additional clinical information on the health of the newborn. This will provide valuable information to assist in studies of infant birth and mortality rates and related topics.

Note: A three-year plan with detailed information regarding current status, affected entity, legislative action, cost, and funding is found in the "Executive Summary".

FINANCIAL PROJECTIONS

Funding VHI's Strategic Plan is a defining issue. The resolution of the funding issue will determine *what* we can accomplish. It could be stated that putting funding before planned activities is putting the 'cart before the horse' but, in a nonprofit organization, that is not the case. Funding is the pre-eminent question to be resolved as it establishes the operational arena for VHI to plan information projects.

To facilitate a review of VHI's current and proposed funding status, VHI directed our accounting firm, Worcester and Company, CPA, P.C., to prepare a Projected Statement of Sources and Uses of Funds (see below) for the fiscal years covered by this plan.

For FY96 and FY97, the report shows following ongoing fund allocations:

- Inpatient Data Base receipts balance expenditures at $335,845
- Outpatient Data Base pilot project requires $20,000 from General Appropriations
- Quality Initiatives represent funding needs of $226,250 which cross all stakeholders and are proposed as new funding requirements on a basis to be developed
- Other New Initiatives represent funding needs of $73,750 which cross all stakeholders and are proposed as new funding requirements to be funded on a basis to be determined
- Reserve for Operations will represent an approximate ($18,000) shortfall when offset by $150,000 from projected sales and $125,000 beginning cash balance

Currently, VHI is funded1 sixty-six (66%) percent by hospitals and nursing homes via fee collections. Twenty-two (22%) percent funding comes from the state from general appropriations. The remainder, twelve (12%) percent, is funded by VHI from product sales and verification fees.

Is this an equitable funding arrangement? The answer would vary depending on who is being asked. It is the position of VHI that it is not equitable that hospitals and nursing homes are **funding 66%** of VHI.

1 Based on Statement of Sources and Uses of Funds

VIRGINIA HEALTH INFORMATION
PROJECTED STATEMENT OF SOURCES AND USES OF FUNDS

Sources of Funds	***6/30/97***	***6/30/1998 ******	***6/30/1999 ******
Patient Level Data Base			
General Fund Appropriations - Inpatient	$ 288,000	$ 300,000	$ 300,000
General Fund Appropriations - Outpatient	20,000	-	-
Hospital Fee Collections under PLDB authorization	47,845	57,875	75,765
Sub-total	$ 355,845	$ 357,875	$ 375,765
Efficiency and Productivity Activities			
Department of Health Contract *	$300,000	$300,000	$300,000
Other Sources of Funds			
Participative Funding **	300,000	300,000	300,000
Product Sales/Verification Fees	150,000	172,500	181,125
Previous year reserve for operations	-	$292,923	303,938
Total Sources of Funds	$1,105,845	$1,423,298	$1,460,828
Uses of Funds by Activity			
Patient Level Data Base			
Patient Level Data - Inpatient	$ 335,845	$ 357,875	$ 375,765
Patient Level Data - Outpatient pilot ***	20,000	-	-
Sub-total	$ 355,845	$ 357,875	$ 375,765
Base Level Buyer's Guide	$ 250,000	$ 250,000	$ 250,000
E & P Methodology Revisions and Efficacy Study***	50,000	-	-
R&D and Quality Initiatives **, ***	226,250	226,250	226,250
Sub-total	$ 526,250	$ 476,250	$ 476,250
Other New Initiatives			
Consumer Publications **	$ 30,000	$ 30,000	$ 30,000
Obstetric Study **	15,000	17,000	3,000
Cardiology Study **	25,000	25,000	35,000
Consumer Satisfaction Measures **, ***	2,750	-	-
Standard Health Plan Identifier **, ***	1,000	1,000	-
Sub-total	$ 73,750	$ 73,000	$ 68,000
Required 6 Month Reserve for Operations	$ 292,923	$ 303,938	$ 312,880
Total Uses of Funds and Reserve	$ 1,248,768	$ 1,211,063	$ 1,232,895
Sources Over (Under) Uses of Funds	$ (142,923)	$ 212,235	$ 227,933
Beginning Cash Balance (Deficit)	$ 125,000	$ (17,923)	$ 194,313
Ending Cash Balance (Deficit)	$ (17,923)	$ 194,313	$ 422,245

*Current contract of $820,000 to be reduced
**Subject to participative funding task force
***Years two and three to be determined

Note: The above statement was prepared by the accounting firm of Worcester and Company, CPA, P.C. and does not purport to be in accordance with generally accepted accounting principles. It has been prepared for management information purposes only.

PARTICIPATIVE FUNDING PROTOCOL

Throughout this Strategic Plan there have been references to 'Participative Funding'. Balance Funding has two components. First, all stakeholders will be considered for the funding protocol. Second, if the project is a special request, then it should be funded by the requester.

Note that funding was not conditional on the basis of 'who will benefit'. That distinction is made in recognition that consumers and purchasers of health care are our primary customers and as such are beneficiaries of VHI's efforts. Consumers and entities purchasing health care coverage for their employees are already paying their share within the cost matrix through out-of-pocket costs, premiums, and taxes and therefore are anticipated to be excluded from the Participative Funding equation.

The exclusion of consumers and purchasers from the funding equation is not a uniformly held perspective by all VHI Board Members. This remains one of the issues to be worked out by the task force.

Returning to the issue raised earlier "Which comes first; the project or the funding?", consider the following in support of establishing a general protocol for funding. When an information project is being considered, it is reasonable and necessary to ask 'what will this cost'? However, to subject every effort to an external *point in time* cost benefit justification will result in gross inefficiencies and project variability directly related to the power of the funding source. The preferred and recommended approach is to establish an annual funding protocol where the stakeholders and general funds form the basis of VHI's annual budget. The budget is used to fund projects that have been defined, evaluated, and presented through an annual operating plan. The process for establishing and evaluating projects would be participative for all stakeholders through their VHI Board Representative. The over arching review is performed by the General Assembly through approval of VHI's proposed Strategic/Annual Operating Plan.

Thus the 'cart is not before the horse' since the planned activities of VHI are reviewed and approved based on a progressive basis; however, ***funding has been pre-established*** through the basic funding protocol referred to above.

VHI proposes to establish a Funding Task Force composed of Board Members representing all stakeholders. This task force will be charged with developing a flexible Participative Funding protocol that will provide a basis for funding VHI from year to year. Depending on the voluntary compliance of the stakeholders, this Participative Funding protocol may become a subject for a legislative mandate. VHI endeavors to commission this task force such that they may complete their work and resolve participation issues with stakeholders in a timely manner. It is, however, not possible to resolve this matter for legislative review in the current session.

<u>*Bridging the Gap on Financing Continuing Operations*</u> During the current year Virginia Health Information will continue toward the development of the following

new projects and enhancements:

- consumer satisfaction survey,
- obstetric study (if surveys support its value),
- cardiology study,
- consumer guides to health plans, hospitals, nursing homes, and physicians, and
- standard health plan/insurance identifier.

These development efforts will be temporarily funded by VHI's sales and licensing fees, to the degree possible. It is expected that once the funding protocol is established, these projects will be funded from that pool of funds.

Resolution of Efficiency and Productivity Fee Collection (Board of Health Contract) As noted in the Sources and Uses Statement, only $300,000 of the $820,000 contract with the Department of Health has been taken into account. These funds will be used to produce a status quo *Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes.* Additionally, funds will be used to assess the efficacy of continued publication of this report. At this time, VHI is not engaged in collection of efficiency and productivity fees. Fee collection and the disposition of balances held will be resolved subject to the efficacy study.

The Statement of Sources and Uses of Funds and Funding Task Force proposal represent VHI's best effort to present a viable picture of what we plan to do and how we plan to accomplish our work.

SUMMARY

As directed by the provisions of House Bill 1307, VHI submits this Strategic Plan covering the period June 1996-June 1999.

This plan recommends ***specific data projects:***

- continuing operation of the Patient Level Data Base,
- enhancing the PLDB by including physician identifiers and other improvements on hospital discharges files,
- determining and publishing information based on quality indicators for all stakeholders,
- developing a consumer guide to health care providing descriptive and comparative information on health plans, hospitals, physicians, and nursing homes,
- developing and publishing consumer satisfaction measures with regard to health plans and insurance companies,
- publishing an enhanced obstetric study showing variation within hospitals, by physicians, and by insurance coverage type, and
- developing a cardiology study of comparative outcomes based on region, insurance type, hospital, and physician.

Specific data elements have been proposed as additions to the data collection and analysis matrix to improve the value of the information published. These elements include:

- physician and health plan identifiers,
- stakeholder quality measures, and
- consumer-oriented descriptive and comparative data for all health care providers.

VHI proposes to ***determine the efficacy*** of continued publication the *Buyer's Guide to Efficient and Productive Hospitals and Nursing Homes.* Additionally, VHI proposes to regularly ***evaluate the usefulness*** of each data effort on an ongoing basis.

VHI proposes a ***Participative Funding*** approach for current and future health care information projects. The immediate impact of this recommendation is a realignment of the hospital and nursing home fee structure relative to the efficiency and productivity report.

Further, this recommendation requires stakeholders' involvement from health plans and physicians on a task force to determine equitable funding participation. Currently both of these stakeholder groups are not financially invested in the funding equation.

Finally, while this plan is aggressive, it addresses the evolving health care information matrix in the Commonwealth. The VHI Board presents this plan as our recommendation for adding value and useable information for the health care consumers and purchasers throughout Virginia.

APPENDICES

Excerpts of House Bill 1307
Audited Financial Statement
Efficacy of Patient Level Data
Public health uses and examples of current projects
History of Health Care Cost and Quality Issues
What Consumers Want to Know
Outpatient Data

EXCERPTS OF HOUSE BILL 1307

CHAPTER 7.2.
HEALTH CARE DATA REPORTING

§32.1-276.2. Health care data reporting; purpose. The General Assembly finds that the establishment of effective health care data analysis and reporting initiatives is essential to the improvement of the quality and cost of health care in the Commonwealth, and that accurate and valuable health care data can best be identified by representatives of state government and the consumer, hospital, nursing home, physician, insurance, and business communities. For this reason, the State Board of Health and the State Health Commissioner, assisted by the State Department of Health, shall administer the health care data reporting initiatives established by this chapter.

§ 32.1-276.3. Definitions.

As used in this chapter:

"Board" means the Board of Health.

"Consumer" means any person (i) whose occupation is other than the administration of health activities or the provision of health services, (ii) who has no fiduciary obligation to a health care institution or other health agency or to any organization, public or private, whose principal activity is an adjunct to the provision of health services, or (iii) who has no material financial interest in the rendering of health services.

"Health care provider" means (i) a general hospital, ordinary hospital, outpatient surgical hospital, nursing home or certified nursing facility licensed or certified pursuant to Article 1 (§32.1-123 et seq.) of Chapter 5 of Title 32.1; (ii) a mental or psychiatric hospital licensed pursuant to Chapter 8 (§37.1-179 et seq.) of Title 37.1; (iii) a hospital operated by the University of Virginia or Virginia Commonwealth University; (iv) any person licensed to practice medicine or osteopathy in the Commonwealth pursuant to Chapter 29 (§54.1-2900 et seq.) of Title 54.1; or (v) any person licensed to furnish health care policies or plans pursuant to Chapter 34 (§38.2-3400 et seq.), Chapter 42 (§38.2-4200), or Chapter 43 (§38.2-4300) of Title 38.2. In no event shall such term be construed to include continuing care retirement communities which file annual financial reports with the State Corporation Commission pursuant to Chapter 49 (§38.2-4900 et seq.) of Title 38.2 or any nursing care facility of a religious body which depends upon prayer alone for healing.

"Inpatient hospital" means a hospital providing inpatient care and licensed pursuant to Article 1 (§32.1-123 et seq.) of Chapter 5 of Title 32.1, a hospital licensed pursuant to Chapter 8 (§37.1-179 et seq.) of Title 37.1, or a hospital operated by the University of Virginia or Virginia Commonwealth University.

"Nonprofit organization" means a nonprofit, tax-exempt health data organization with the characteristics, expertise, and capacity to execute the powers and duties set forth for such entity in this chapter.

"System" means the Virginia Patient Level Data System

§32.1-276.4. Agreements for certain data services.

A. The Commissioner shall negotiate and enter into contracts or agreements with a nonprofit organization for the compilation, storage, analysis, and evaluation of data submitted by health care providers pursuant to this chapter and for the development and administration of a methodology for the measurement and review of the efficiency and

productivity of health care providers. Such nonprofit organization shall be governed by a board of directors composed of representatives of state government, including the Commissioner, and the consumer, health care provider, and business communities. Of the health care provider representatives, there shall be an equal number of hospital, nursing home, physician and health plan representatives. The articles of incorporation of such nonprofit organization shall require the nomination of such board members by organizations and associations representing those categories of persons specified for representation on the board of directors.

B. In addition to providing for the compilation, storage, analysis, and evaluation services described in subsection A, any contract or agreement with a nonprofit, tax-exempt health data organization made pursuant to this section shall require the board of directors of such organization to:

1. Develop and disseminate other health care cost and quality information designed to assist businesses and consumers in purchasing health care and long-term care services;

2. Prepare and make public summaries, compilations, or other supplementary reports based on the data provided by health care providers pursuant to this chapter;

3. Collect, compile, and publish Health Employer Data and Information Set (HEDIS) information or reports voluntarily submitted by health maintenance organizations or other health care plans;

4. Maintain the confidentiality of data as set forth in §32.1-276.9;

5. Submit a report to the Board, the Governor, and the General Assembly no later than October 1 of each year for the preceding fiscal year. Such report shall include a certified audit and provide information on the accomplishments, priorities, and current and planned activities of the nonprofit organization;

6. Submit, as appropriate, strategic plans to the Board, the Governor, and the General Assembly recommending specific data projects to be undertaken and specifying data elements that will be required from health care providers. In developing strategic plans, the nonprofit organization shall incorporate similar activities of other public and private entities to maximize the quality of data projects and to minimize the cost and duplication of data projects. In its strategic plans, the nonprofit organization shall also evaluate the continued need for and efficacy of current data initiatives, including the use of patient level data for public health purposes. The nonprofit organization shall submit the first such strategic plan to the Board, the Governor, and the General Assembly by October 1, 1996. Such initial plan shall include recommendations for measuring quality of care for all health care providers and for funding all data projects undertaken pursuant to this chapter. The approval of the General Assembly shall be required prior to the implementation of any recommendations set forth in a strategic plan submitted pursuant to this section;

7. Competitively bid or competitively negotiate all aspects of all data projects, if feasible.

C. Except as provided in subsection K of §11-45, the provisions of the Virginia Public Procurement Act (§11-35 et seq.) shall not apply to the activities of the Commissioner authorized by this section. Funding for services provided pursuant to any such contract or agreement shall come from general appropriations and from fees determined pursuant to §32.1-276.8.

§32.1-276.5. Providers to submit data.

Every health care provider shall submit data as required pursuant to regulations of the Board, consistent with the recommendations of the nonprofit organization in its strategic

plans submitted and approved pursuant to §32.1-276.4. Notwithstanding the provisions of Chapter 26 (§2.1-377 et seq.) of Title 2.1, it shall be lawful to provide information in compliance with the provisions of this chapter.

§32.1-276.6. Patient level data system continued; reporting requirements.

A. The Virginia Patient Level Data System is hereby continued, hereinafter referred to as the "System." Its purpose shall be to establish and administer an integrated system for collection and analysis of data which shall be used by consumers, employers, providers, and purchasers of health care and by state government to continuously assess and improve the quality, appropriateness, and accessibility of health care in the Commonwealth and to enhance their ability to make effective health care decisions.

B. Every inpatient hospital shall submit to the Board patient level data as set forth in this subsection. Any such hospital may report the required data directly to the nonprofit organization cited in §32.1-276.4. Patient level data elements for hospital inpatients shall include:

1. Hospital identifier;
2. Attending physician identifier;
3. Operating physician identifier;
4. Payor identifier;
5. Employer identifier;
6. Patient identifier;
7. Patient sex, race, date of birth (including century indicator), zip code, patient relationship to insured, employment status code, status at discharge, and birth weight for infants;
8. Admission type, source, date and hour, and diagnosis;
9. Discharge date and status;
10. Principal and secondary diagnoses;
11. External cause of injury;
12. Co-morbid conditions existing but not treated;
13. Procedures and procedure dates;
14. Revenue center codes, units, and charges; and
15. Total charges.

C. State agencies providing coverage for outpatient services shall submit to the Board patient level data regarding paid outpatient claims. Information to be submitted shall be extracted from standard claims forms and, where available, shall include:

1. Provider identifier;
2. Patient identifier;
3. Physician identifier;
4. Dates of service and diagnostic, procedural, demographic, pharmaceutical, and financial information; and
5. Other related information.

The Board shall promulgate regulations specifying the format for submission of such outpatient data. State agencies may submit this data directly to the nonprofit organization cited in §32.1-276.4.

§32.1-276.7. Methodology to review and measure the efficiency and productivity of health care providers

A. Pursuant to the contract identified in §32.1-276.4, and consistent with recommendations set forth in strategic plans submitted and approved pursuant to §32.1-

276.4, the nonprofit organization shall administer and modify, as appropriate, the methodology to review and measure the efficiency and productivity of health care providers. The methodology shall provide for, but not be limited to, comparisons of a health care provider's performance to national and regional data, where available, and may include different methodologies and reporting requirements for the assessment of the various types of health care providers which report to it. Health care providers shall submit the data necessary for implementation of the requirements of this section pursuant to regulations of the Board. Individual health care provider filings shall be open to public inspection once they have been received pursuant to the methodology adopted by the Board as required by this section.

B. The data reporting requirements of this section shall not apply to those health care providers enumerated in (iv) and (v) of the definition of health care providers set forth in §32.1-276.3 until a strategic plan submitted pursuant to §32.1-276.4 is approved requiring such reporting and any implementing laws and regulations take effect.

§32.1-276.8. Fees for processing, verification, and dissemination of data.

A. The Board shall prescribe a reasonable fee, not to exceed one dollar per discharge, for each health care provider submitting patient level data pursuant to this chapter to cover the costs of the reasonable expenses in processing and verifying such data. The Board shall also prescribe a reasonable fee for each affected health care provider to cover the costs of the reasonable expenses of establishing and administering the methodology developed pursuant to §32.1-276.7. The payment of such fees shall be at such time as the Board designates. The Board may assess a late charge on any fees paid after their due date.

The Board shall (i) maintain records of its activities; (ii) collect and account for all fees and deposit the moneys so collected into a special fund from which the expenses attributed to this chapter shall be paid; and (iii) enforce all regulations promulgated by it pursuant to this chapter.

B. The nonprofit organization providing services pursuant to an agreement or contract as provided in §32.1-276.4 shall be authorized to charge and collect the fees prescribed by the Board in subsection A of this section when the data are provided directly to the nonprofit organization. Such fees shall not exceed the amount authorized by the Board as provided in subsection A of this section. The nonprofit organization, at its discretion, may grant a reduction or waiver of the patient level data submission fees upon a determination by the nonprofit organization that the health care provider has submitted processed, verified data.

C. State agencies shall not be assessed fees for the submission of patient level data required by subsection C of §32.1-276.6. Individual employers, insurers, and other organizations may voluntarily provide the nonprofit organization with outpatient data for processing, storage, and comparative analysis and shall be subject to fees negotiated with and charged by the nonprofit organization for services provided.

D. The nonprofit organization providing services pursuant to an agreement or contract with the Commissioner shall be authorized to charge and collect reasonable fees for the dissemination of patient level data; however, the Commissioner shall be entitled to receive publicly available data from the nonprofit organization at no charge.

§32.1-276.9. Confidentiality, subsequent release of data and relief from liability for reporting; penalty for wrongful disclosure; individual action for damages.

A. Patient level data collected pursuant to this chapter shall be exempt from the provisions of the Virginia Freedom of Information Act (§2.1-340 et seq.), shall be considered

confidential, and shall not be disclosed other than as specifically authorized by this chapter; however, upon processing and verification by the nonprofit organization, all patient level data shall be publicly available, except patient, physician, and employer identifier elements, which may be released solely for research purposes if otherwise permitted by law and only if such identifier is encrypted and cannot be reasonably expected to reveal patient identities. No report published by the nonprofit organization, the Commissioner, or other person may present information that reasonably could be expected to reveal the identity of any patient. Publicly available information shall be designed to prevent persons from being able to gain access to combinations of patient characteristic data elements that reasonably could be expected to reveal the identity of any patient. The nonprofit organization, in its discretion, may release physician and employer identifier information.

B. No person or entity, including the nonprofit organization contracting with the Commissioner, shall be held liable in any civil action with respect to any report or disclosure of information made under this article unless such person or entity has knowledge of any falsity of the information reported or disclosed.

C. Any disclosure of information made in violation of this chapter shall be subject to a civil penalty of not more than $5,000 per violation. This provision shall be enforceable upon petition to the appropriate circuit court by the Attorney General, any attorney for the Commonwealth, or any attorney for the county, city or town in which the violation occurred. Any penalty imposed shall be payable to the Literary Fund. In addition, any person or entity who is the subject of any disclosure in violation of this article shall be entitled to initiate an action to recover actual damages, if any, or $500, whichever is greater, together with reasonable attorney's fees and court costs.

§32.1-276.10. Chapter and actions thereunder not to be construed as approval of charges or costs.

Nothing in this chapter or the actions taken by the Board pursuant to any of its provisions shall be construed as constituting approval by the Commonwealth or any of its agencies or officers of the reasonableness of any charges made or costs incurred by any health care provider.

§32.1-276.11. Violations.

Any person violating the provisions of this chapter may be enjoined from continuing such violation by application by the Board for relief to a circuit court having jurisdiction over the offending party.

§32.1-335. Technical Advisory Panel.

The Board shall annually appoint a Technical Advisory Panel whose duties shall include recommending to the Board (i) policy and procedures for administration of the fund, (ii) methodology relating to creation of charity care standards, eligibility and service verification, and (iii) contribution rates and distribution of payments. The Panel shall also advise the Board on any matters relating to the governance or administration of the fund as may from time to time be appropriate and on the establishment of pilot health care projects for the uninsured. In addition to these duties, the Panel shall, in accordance with Board regulations, establish pilot health care projects for the uninsured and shall administer any money voluntarily contributed or donated to the fund by private or public sources, including local governments, for the purpose of subsidizing pilot health care projects for the uninsured.

The Panel shall consist of fifteen members as follows: the Chairman of the Board, the Director of the Department of Medical Assistance Services, the Executive Director of the Virginia Health Services Cost Review Council, the Commissioner of Health, the

Commissioner of the Bureau of Insurance or his designee, the chairman of the Virginia Health Care Foundation or his designee, two additional members of the Board, one of whom shall be the representative of the hospital industry, and two chief executive officers of hospitals as nominated by the Virginia Hospital Association.

In addition, there shall be three representatives of private enterprise, who shall be executives serving in business or industry organizations. Nominations for these appointments may be submitted to the Board by associations representing constituents of the business and industry community in Virginia including, but not limited to, the Virginia Manufacturers Association, the Virginia Chamber of Commerce, the Virginia Retail Merchants Association, and the Virginia Small Business Advisory Board. There shall be two representatives from the insurance industry who shall be executives serving in insurance companies or industry organizations. Nominations for these appointments may be submitted to the Board by associations representing constituents of the insurance industry in Virginia including, but not limited to, Blue Cross/Blue Shield of Virginia, Health Insurance Association of America and the Virginia Association of Health Maintenance Organizations. There shall be one physician member. Nominations for this appointment may be submitted to the Board by associations representing medical professionals, including, but not limited to, the Medical Society of Virginia and the Old Dominion Medical Society.

§32.1-336. Annual charity care data submission.

No later than 120 days following the end of each of its fiscal years, each hospital shall file with the Department a statement of charity care and such other data as may be required by the Department. The Department may grant one 30-day extension of the filing date to hospitals unable to meet the 120-day requirement. Data required for carrying out the purposes of this chapter may be supplied to the Department by the Virginia Health Services Cost Review Council Board of Health. The Board shall prescribe a procedure for alternative data gathering in cases of extreme hardship or impossibility of compliance by a hospital.

§32.1-337. Hospital contributions; calculations.

Hospitals shall make contributions to the fund in accordance with the following:

A. A charity care standard shall be established annually as follows: For each hospital, a percentage shall be calculated of which the numerator shall be the charity care charges and the denominator shall be the gross patient revenues as reported by that hospital. This percentage shall be the charity care percent. The median of the percentages of all such hospitals shall be the standard.

B. Based upon the general fund appropriation to the fund and the contribution, a disproportionate share level shall be established as a percentage above the standard not to exceed three percent above the standard.

C. The cost of charity care shall be each hospital's charity care charges multiplied by each hospital's cost-to-charge ratio as determined in accordance with the Medicare cost finding principles. For those hospitals whose mean Medicare patient days are greater than two standard deviations below the Medicare statewide mean, the hospital's individual cost-to-charge ratio shall be used.

D. An annual contribution shall be established which shall be equal to the total sum required to support charity care costs of hospitals between the standard and the disproportionate share level. This sum shall be equally funded by hospital contributions and general fund appropriations.

E. A charity care and corporate tax credit shall be calculated, the numerator of which shall be each hospital's cost of charity care plus state corporate taxes and the denominator of

which shall be each hospital's net patient revenues as defined by the Virginia Health Services Cost Review Council Board of Medical Assistance Services.

F. An annual hospital contribution rate shall be calculated, the numerator of which shall be the sum of one-half the contribution plus the sum of the product of the contributing hospitals' credits multiplied by the contributing hospitals' positive operating margins and the denominator of which shall be the sum of the positive operating margins for the contributing hospitals. The annual hospital contribution rate shall not exceed 6.25 percent of a hospital's positive operating margin.

G. For each hospital, the contribution dollar amount shall be calculated as the difference between the rate and the credit multiplied by each hospital's operating margin. In addition to the required contribution, hospitals may make voluntary contributions or donations to the fund for the purpose of subsidizing pilot health care projects for the uninsured.

H. The fund shall be established on the books of the Comptroller so as to segregate the amounts appropriated and contributed thereto and the amounts earned or accumulated therein and any amounts voluntarily contributed or donated for the purpose of subsidizing pilot health care projects for the uninsured. No portion of the fund shall be used for a purpose other than that described in this chapter. Any money remaining in the fund at the end of a biennium shall not revert to the general fund but shall remain in the fund to be used only for the purpose described in this chapter, including any money voluntarily contributed or donated for the purpose of subsidizing pilot health care projects for the uninsured, whether from private or public sources.

2. That Chapter 26 (§§9-156 through 9-166.7) of Title 9 of the Code of Virginia is repealed.

3. That the regulations of the Virginia Health Services Cost Review Council shall remain in effect until superseded by regulations promulgated by the Board of Health.

4. That any contracts entered into by the Executive Director of the Virginia Health Services Cost Review Council and any nonprofit health data organization pursuant to §9-166.4 shall continue, and that the State Health Commissioner shall assume the rights, duties and responsibilities of the Executive Director under any such contracts.

5. That Chapter 7.2 of Title 32.1 and subsection K of §11-45 of the Code of Virginia shall expire on July 1, 1999.

6. That the data submission requirements for implementation of programs pursuant §§9-161.1 and 9-166.3 shall remain in effect until such modifications are approved and any implementing laws and regulations take effect.

AUDITED FINANCIAL STATEMENT

VIRGINIA HEALTH INFORMATION

(A Non-Profit Corporation)

Richmond, Virginia

REPORT ON EXAMINATION

For the Fiscal Year Ended

June 30, 1996

Compilation, Storage, Analysis and Evaluation of
Patient Level Data for the Commonwealth of Virginia

Incorporated in Virginia on February 12, 1993

VIRGINIA HEALTH INFORMATION

(A Non-Profit Corporation)

OFFICERS

John P. Gavin	President
Sheldon M. Retchin, MD, MSPH	Vice-President
Robert L. Graves	Secretary
William G. Ehlman	Treasurer
Michael T. Lundberg	Executive Director

DIRECTORS

Robert A. Archer

J. Lawrence Colley, MD

Sally J. Duran

William G. Ehlman

John P. Gavin

Mary C. Gill

Steven A. Gold

Randolph L. Gordon, MD, MPH

Robert L. Graves

Jane N. Kusiak

Donald E. Lorton

William L. Lukhard

Bryan Mesh

Clifton L. Peay, Jr., MD, MBA

Sheldon M. Retchin, MD, MSPH

Lynn G. Sachs

Joseph R. Verostic

Worcester and Company
Certified Public Accountants
PO Box 35117
Richmond, VA 23235-0117
804-320-4707

The Board of Directors
Virginia Health Information
Richmond, Virginia

We have audited the accompanying balance sheets of Virginia Health Information (a non-profit corporation) as of June 30, 1996, and 1995 and the related statements of support and revenue, expenses, and changes in fund balance and statements of cash flows for the fiscal years then ended. These financial statements are the responsibility of the Organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Virginia Health Information as of June 30, 1996 and 1995, and the results of its operations and cash flows for the fiscal years then ended in conformity with generally accepted accounting principles.

Worcester and Company, CPA, PC
Certified Public Accountants

Richmond, Virginia
September 10, 1996

VIRGINIA HEALTH INFORMATION
(A Non-Profit Corporation)

BALANCE SHEETS for June 30, 1996 and 1995

ASSETS

CURRENT ASSETS	1996	1995
Cash	$ 128 016	$ 80 724
Accounts Receivable (Note 2)	19 791	3 620
Total Current Assets	$ 147 807	$ 84 344
OTHER ASSETS		
Prepaid Expenses (Note 3)	$ 1 156	$ 0
Refundable Deposits (Note 3)	1 156	1 156
Organization Costs - Net (Note 4)	210	313
Total Other Assets	$ 2 522	$ 1 469
PROPERTY AND EQUIPMENT (Notes 1,5 and 7)		
Cost	$ 73 067	$ 52 766
Less Accumulated Depreciation	(36 097)	(19 609)
Net Property and Equipment	$ 36 970	$ 33 157
TOTAL ASSETS	$ 187 299	$ 118 970

LIABILITIES AND FUND BALANCE

CURRENT LIABILITIES		
Accounts Payable (Note 6)	$ 4 570	$ 10 887
Lease Payable - Current Portion (Note 7)	496	5 953
Total Current Liabilities	$ 5 066	$ 16 840
Lease Payable - Non-Current Portion (Note 7)	$ 0	$ 496
TOTAL LIABILITIES	$ 5 066	$ 17 336
FUND BALANCE (Note 1)	$ 182 233	$ 101 634
TOTAL LIABILITIES AND FUND BALANCE	$ 187 299	$ 118 970

The Notes to Financial Statements are an integral part of these statements.

VIRGINIA HEALTH INFORMATION
(A Non-Profit Corporation)

STATEMENTS OF SUPPORT AND REVENUE, EXPENSES, AND CHANGES IN FUND BALANCE

For the Fiscal Years Ended June 30, 1996 and 1995

SUPPORT AND REVENUE (Note 1)	1996	1995
Government Appropriations	$ 288 000	$ 300 000
Product Sales	114 241	26 911
Verification Fees and Other Revenue	32 814	10 967
Interest Income	3 418	1 099
Total Support and Revenue	$ 438 473	$ 338 977
EXPENSES		
Salaries (Note 8)	$ 156 003	$ 143 703
Fringe Benefits (Note 9)	37 299	46 485
Space and Support (Note 10)	91 428	76 083
Sub-Contractors (Note 11)	56 309	37 639
Travel and Meetings (Note 12)	16 835	7 913
Total Expenses	$ 357 874	$ 311 823
SUPPORT AND REVENUE OVER EXPENSES	$ 80 599	$ 27 154
FUND BALANCE - Beginning of Year	101 634	74 480
FUND BALANCE - End of Year	$ 182 233	$ 101 634

The Notes to Financial Statements are an integral part of these statements.

VIRGINIA HEALTH INFORMATION
(A Non-Profit Corporation)

STATEMENTS OF CASH FLOWS

For the Fiscal Years Ended June 30, 1996 and 1995

CASH FLOWS FROM OPERATING ACTIVITIES	1996	1995
Support and Revenue over Expenses	$ 80 599	$ 27 154
Noncash items included:		
Depreciation and amortization	16 591	15 779
Net decrease (increase) in receivables	(17 327)	(1 059)
Net increase (decrease) in payables	(6 317)	9 163
Net Cash Provided by Operations	$ 73 546	$ 51 037
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of property and equipment	$(20 301)	$(16 723)
Refundable Deposits	0	(1 156)
Net Cash (Used) by Investing Activities	$(20 301)	$(17 879)
CASH FLOWS FROM FINANCING ACTIVITIES		
(Decrease) in capital lease for purchase of equipment	$(5 953)	$(4 464)
Net Cash (Used) by Financing Activities	$(5 953)	$(4 464)
NET INCREASE IN CASH	$ 47 292	$ 28 694
Cash - Beginning of Year	80 724	52 030
Cash - End of Year	$ 128 016	$ 80 724

The Notes to Financial Statements are an integral part of these statements.

VIRGINIA HEALTH INFORMATION
(A Non-Profit Corporation)

NOTES TO FINANCIAL STATEMENTS

June 30, 1996

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Virginia Health Information (VHI) is a non-profit, tax-exempt section 501(c)(3) organization which compiles, stores, analyzes and evaluates the patient level data for the Commonwealth of Virginia.

In February of 1993, the Commonwealth of Virginia joined 38 other states that have established legislation to create a statewide patient level database. This database, to be maintained by VHI, is Virginia's only public resource for all inpatient hospital discharge information.

(a) Fund Accounting:

To ensure observance of limitations and restrictions placed on the use of resources available to the organization, the accounts of the organization are maintained in accordance with the principles of fund accounting. During the organization's initial year, the assets, liabilities, and fund balance are reported in a single, self-balancing account which represents the expendable funds available for support of the organization's operations.

(b) Basis of Accounting:

The organization uses the accrual basis of accounting. Revenue and support is recognized when it is earned, and expenses are recorded when they are incurred.

(c) Properties and Depreciation:

The property and equipment is stated at cost. Depreciation is computed on the declining balance method over the estimated useful lives of the various assets. Estimated useful lives are 5 years for computer equipment and software and 7 years for office furniture and fixtures.

(d) Inventory:

Minor materials and supplies are charged to expense during the period of purchase. As a result, no inventory is recognized on the balance sheet.

(e) Sources of Financial Support and Revenue:

The primary source of financial support for Virginia Health Information is a contract with the Virginia Health Services Cost Review Council (VHSCRC), a legislatively established entity which was created by the enactment of Chapter 26, Title 9, Code of Virginia, as amended. For consideration received, Virginia Health Information serves as the entity responsible for the compilation, storage, analysis, and evaluation of patient level data provided by inpatient hospitals in the Commonwealth of Virginia.

In addition to the government appropriations noted above, Virginia Health Information also recorded revenue from:

1. The processing and verification of data received directly by inpatient hospitals at specific fees.
2. The sale of data tapes resulting from information compiled by VHI and sold to interested parties.
3. Interest earned on surplus cash funds.
4. Income from other miscellaneous sales and sources.

(f) Income taxes:

Virginia Health Information is exempt from income taxes under Section 501(c)(3) of the Internal Revenue Code. It is also exempt from state income tax.

2. ACCOUNTS RECEIVABLE

The organization records accounts receivable at the actual invoice amount due without any provision for uncollectible accounts. Management is confident that all receivables are fully collectible and the number and amount of receivables due, in relation to total assets, is immaterial thus eliminating any need to record a provision for uncollectible accounts.

3. PREPAID EXPENSES

The prepaid expense as shown represents the July, 1996 rent expense paid in advance prior to the June 30 fiscal year end. The refundable deposits equal one month's rent expense which was paid per the requirements of the organization's landlord. This deposit is retained until such time as the lease is terminated.

4. ORGANIZATION COSTS

During the formation of Virginia Health Information, the organization paid $522 in legal fees which were incurred during the incorporation process. This cost has been reported as an asset and is being amortized over a five year period. Amortization amounted to $104 for each of the fiscal years ended June 30, 1996, and 1995.

5. PROPERTY AND EQUIPMENT

The various classes of property and related depreciation are shown in the following tabulation:

	1996	1995
Computer equipment and software	$ 64 337	$ 45 121
Office furniture and fixtures	8 730	7 645
Total	$ 73 067	$ 52 766
Accumulated depreciation	$(36 097)	$(19 609)
Net	$ 36 970	$ 33 157

Depreciation expense for the fiscal years ended June 30, 1996 and 1995 amounted to $16,488 and $15,675 respectively.

6. ACCOUNTS PAYABLE

The accounts payable reflect various expenses incurred prior to, but not paid until after the fiscal year end.

7. LEASE PAYABLE

Virginia Health Information negotiated an equipment lease agreement for the purchase of two computers. At maturity of the lease, the organization can purchase the equipment for $1, therefore, the entire cost of the lease has been recorded as a depreciable asset.

The lease calls for 24 equal monthly payments of $496.06. The first and last payments were made at the execution of the lease prior to June 30, 1994. Subsequent payments will be required as follows:

	1996	1995
Current portion: lease payments due within the next 12 months	$ 496	$ 5 953
Non-current portion: lease payments due after 12 months	0	496
Total lease obligation	$ 496	$ 6 449

8. SALARIES

Salary expense consists of the following:

Title	1996	1995
Executive Director	$ 93 715	$ 87 550
Administrative Assistant	25 200	20 533
Programmer	37 088	35 620
Total	$ 156 003	$ 143 703

9. FRINGE BENEFITS

Fringe Benefits expense consists of the following:

	1996	1995
Health and Dental Insurance	$ 17 072	$ 13 710
Simplified Employee Pension Plan	15 275	13 120
Parking and Automobile Club Dues	2 492	2 377
Disability Insurance	1 972	1 808
Life Insurance	488	407
Payroll Taxes	0	11 865
Paid to MSVRO	0	3 198
Total	$ 37 299	$ 46 485

10. SPACE AND SUPPORT

Space and Support expense consists of the following:

	1996	1995
Depreciation and amortization	$ 16 592	$ 15 779
Rent	13 878	12 461
Payroll taxes	10 867	0
Office supplies	8 748	7 070
Legal expense	7 323	7 165
Equipment rental	5 818	3 699
Public education/special projects	5 496	4 074
Phone, fax, and teleconference	5 354	5 742
Postage and delivery	4 794	3 317
Accounting fees	2 825	1 300
Maintenance and repairs	2 442	5 589
Dues, licenses, and permits	2 416	494
Insurance	1 846	1 810
Temporary staffing	1 558	0
Payroll processing	791	577
Workers compensation insurance	454	0
Miscellaneous	226	616
Contract payments to MSVRO	0	6 390
Total	$ 91 428	$ 76 083

11. SUB-CONTRACTORS

Virginia Health Information entered into a contract with Commonwealth Clinical Systems, Inc., the purpose being for Commonwealth to provide computer programming, data processing, reporting, and consulting services for Virginia Health Information in support of its effort to manage and administer a patient level database for the State of Virginia. Commonwealth's duties and functions consisted primarily of developing and delivering computer programs for the editing of data, generating error summary reports, and providing magnetic copies of the processed data. For the fiscal years ended June 30, 1996 and 1995, Virginia Health Information incurred expenses under the contract totaling $54,660 and $37,639 respectively. For the fiscal year ended June 30, 1996, product development costs paid to other vendors totaled $1,649.

12. TRAVEL AND MEETINGS

Travel and Meals expense consists of the following:

	1996	1995
Seminars and speaking engagements	$ 12 908	$ 3 451
Meeting expenses	2 631	2 103
Local travel and meals	1 296	2 359
Total	$ 16 835	$ 7 913

13. COMMITMENTS AND CONTINGENCIES

Virginia Health Information negotiated a lease which provides office space through June 1998 and calls for monthly rental payments of $1,156. As of June 30, 1996, the total remaining commitment under the lease is $27,756.

In addition, the organization is leasing a copying machine at $283 per month plus sales tax through August, 1997. As of June 30, 1996, the total remaining commitment under the lease is $3,962.

Efficacy of Patient Level Data

In July 1993, VHI began operations with a committed Board of Directors, an Executive Director, and enabling legislation. Since that modest beginning, VHI has developed specialized databases and reports that are widely used to benefit Virginians. Rather than operate in a vacuum, data products were designed based on successful systems from other states. Once the initial design was completed, surveys were sent to interested parties for comments on the content, calculations, and format. While not a state agency, VHI prices products consistently in the range of those produced by other states. The result has been wide demand for this data by private companies and public bodies including state agencies, Virginia universities, and individual students.

Private Sector

Virginias' patient level data base has been of great value to many private sector groups. The low cost, versatility, and broad range of uses of these data mean the data are in demand for a variety of reasons.

Hospitals Over 1/3 of Virginia hospitals or their systems acquire VHI-provided databases or reports. Hospitals use this data for quality improvement studies, long range planning, and marketing. For example:

- A hospital wanted to compare the effectiveness of care provided at their facility to others. Using VHI-supplied data, they create reports to support the efforts of 14 internal performance evaluation teams.
- Before developing a new program of neurological services, a hospital needed to know if there was a demonstrated need for the services. VHI-provided reports allowed them to make informed decisions before committing resources to new program development.

Insurance Companies and Health Plans Health plans obtain VHI-data or reports to assist underwriting efforts, compare their care to other payers, check the effectiveness on their wellness programs, and review total hospital performance. The increased standardization of VHI-provided data as well as additional data elements allows plans to obtain more detailed clinical information on their and other plans.

- A health plan wanted information on the number of patients who traveled from geographical region to another to receive tertiary care. VHI created reports that allowed them to understand which hospitals treated patients from various geographic regions. The health plan also saw the value in assisting with provider contracting and has used the reports to support other projects.
- A health plan wanted to demonstrate the impact and value of their healthy mother/baby program but had no way of comparing the program with other health plans. VHI developed reports comparing the health plan's patients to other patients across the state. The health plan used the data to internally justify the higher level of benefits and successfully negotiated an expansion to other clients.
- A small out-of-state insurance company had no information on a Virginia region's costs for certain cardiac procedures. VHI developed a report comparing charges for patients similar to the one insured in this metropolitan region. The result

was an $8,000 savings to the insurer and additional savings to the patient, a Virginia resident.

Health Care Consultants A myriad of health care consultants including accountants, lawyers, and software developers obtain VHI-developed data and reports to gain an understanding of Virginia's health care system and assist a broad range of clients. These groups have no other source of complete sets of this information and repeatedly laud VHI products and reasonable costs.

Note: Detailed information on public health uses of patient level data is described in Appendix D.

PUBLIC HEALTH USES AND EXAMPLES OF CURRENT PROJECTS

Public health is defined as "what we, as a society, do collectively to assure the conditions in which people can be healthy." The focus is on the entire population. The ultimate goal is to find the causes of problems and to prevent them from happening.

While much thought about the current health care system tends to focus on the diagnosis and treatment of disease, the health of Americans is largely determined by environmental hazards, personal risk behaviors, and human biology.

The National Academy of Sciences' Institute of Medicine concluded that only 10% of premature deaths in the US could be avoided with better access to health care while 70% could be prevented by reducing environmental threats and risky behaviors. The remaining 20% are due to inherited conditions.

The primary focus of public health has changed over time with development of bacteriology and virology, rapid advances in biotechnology, growth in knowledge of societal needs, overall population expansion, and demographic changes. As infectious diseases have been reasonably controlled, more resources are dedicated to the prevention of chronic disease through health education, health protection, and disease prevention.

Surveillance While infectious diseases are reasonably controlled, vigilant watch, case finding, and aggressive treatment and follow-up must continue to avoid the re-emergence of debilitating disease. Although infectious diseases are required by Code to be reported to the Department of Health, not all are. Many citizens receive treatment for these diseases through hospitals and emergency room admissions. The availability of disease information, while not in real time, will allow retrospective surveillance and research, i.e., the current study to determine the possible relationship between hemolytic disease and death which may have been caused by the consumption of rare beef infected with *E.coli* O157:H7.

Verification Data can be used to verify information that is reported to disease specific registries which have been established to provide detailed and periodically updated information on persons affected by diseases and conditions important to the public's health. For example, information on elevated blood lead levels has been used as the justification for eliminating lead from gasoline and for documenting the effects of this intervention. Verification of data reported to public health agencies ensures that policy is developed based on accurate information.

Research The identification of the cause of injury and /or the disease over time for certain populations provides the information necessary to support legislation, prevention programs, and additional research for targeted interventions. For example, legislation requiring immunization is grounded in epidemiological research showing the effectiveness of vaccines.

Needs Assessment Health department, in partnership with hospitals and other providers, are tasked to conduct needs assessments which provide baseline data for the justifiable development and maintenance of programs. It also assists in establishing community support for program efforts.

A key element of the assessment is to identify the health problems in the area and to target appropriate intervention programs. Locality and service area specific data is necessary to conduct meaningful needs assessments. For example, a community with an increased level of admissions for diabetes or complications of may benefit from increase nutrition education or screening programs for that conditions.

Quality of Care Public health jurisdictions monitor and maintain the quality of health services through licensing of facilities and enforcement of standards and regulations. This becomes particularly important to the public as it relates to drinking water, sewage and disposal systems, food service establishments, hospitals, nursing homes, and laboratories. Admission data, with disease or injury which may be related to unsafe practices or occupational exposure, can support the need for changes in inspection schedules and/or regulations. The data will also be used to evaluate the provision of clinical preventive services, i.e., age appropriate immunizations, tuberculin skin testing, cholesterol screening, and mammography.

Provider Use and Awareness Within the practice of medicine, there is the belief that if an action has not been documented then it hasn't been done. The understanding that information is generated, analyzed, and utilized to support decision making often changes the nature of health care practice. The collection of physician encounter data also provides the opportunity to monitor the use of clinical preventive services, their effectiveness, and their clinical and economic benefits. In addition, the mere collection of data can be used to hasten the implementation of preferred practice. What gets measured gets done.

Data Linkages The development and evolution of separate information/surveillance systems have resulted in a patchwork of data systems. This fragmentation has in turn led to the duplication of effort and left critical information gaps. The ability to link admission data with other secure health data bases over time will not only reduce the burden of collecting data but also maximize the efficiency of existing information systems by finding new, more innovative ways of using data to enhance the continuity of care and conduct public health surveillance.

Access to Care/Certificate of Public Need Admission data, especially to emergency rooms, can identify factors related to accessibility to providers, health status needs, and economic barriers which may influence access to primary care. Such information will support the need for recruitment and retention of providers to under served areas, development of systems of care to address community health needs, and to target the limited resources and interventions to localities needing them the most. The utilization data can provide both regional and statewide perspectives in assessing the need for new health services.

EXAMPLES OF CURRENT PROJECTS

VHI has provided databases and specialized reports to assist the Commonwealth of Virginia with a number of initiatives and studies:

- *Cardiovascular Reports* Data on hospital discharges were developed to help local Cardiovascular Risk Reduction Coordinators identify geographic areas having the highest need for cardiac prevention and treatment services. Information was provided that identified initial versus advanced cases of cardiovascular disease. These data were then used to cost-effectively focus the risk reduction coordinators' efforts.

- *Diabetes Study* VHI produced research databases for the state's ongoing program to identify and study morbidity of residents suffering from diabetes. This project was initially intended to improve treatment of diabetes with a long-term goal of disease prevention.
- *Injury Prevention Efforts* In a four month project, VHI developed specialized reports and databases for the state's injury prevention coordinator. This important information was developed for health professionals to understand the prevalence, characteristics, and morbidity associated with injuries in Virginia. This information, not previously available, will also help focus prevention efforts and support public policy changes by quantifying the impact of injuries by geographic region, age, sex, race and severity.
- *Neonatal Service Level Data* VHI worked extensively with the VDH's Division of Women's and Children's Health to develop a form to be used by hospitals to assist the Commonwealth in neonatal service level designation. Data requested on this form was designed to be available primarily from the patient level data base. This data will reduce the burden of reporting on hospitals and assist the Commonwealth in determining appropriate newborn service level designations.
- *SJR51 Group B Streptococcus (GBS) Study* VHI developed a series of reports at the request of the Department of Health to help define the extent and charges of infants hospitalized with GBS. This information was used to support SJR51.
- *Certificate of Need Process* VHI developed a series of reports to support state-funded health planning agencies. Typical reports detail the number of residents hospitalized with specific medical or surgical treatments. The health planning agencies analyze the geographic distributions of these patients when reviewing certificate of need applications.

History of Health Care Cost and Quality Issues

Rising costs of hospital care were studied in Virginia as early as 1971 by the Willey Commission established by the Virginia General Assembly. A rate review board was recommended in 1972. From this recommendation, the Virginia Hospital Association established the Voluntary Rate Review Program in 1973. This program operated until 1978 when the General Assembly, responding to limited facility participation, passed legislation requiring hospitals to report financial and cost data.

Virginia Health Services Cost Review Council

The Virginia Health Services Cost Review Council (VHSCRC) was established in 1978 with mandated reporting of financial and cost data by hospitals. The VHSCRC was empowered to make recommendations for hospitals to change financial rates, but compliance was voluntary. Duties changed and expanded over time to include a review of hospitals' commercial diversification in 1988. In 1989 nursing homes were also required to report financial information to the VHSCRC. In 1993 a requirement to develop measurements of health care institution's efficiency and productivity was mandated. The first such report was published one year later.

Also mandated in 1993 was the requirement for hospitals to report patient level discharge information. Virginia was the thirty-eighth state with such a mandate. A major shift occurred in that the patient level data base was to be administered by a nonprofit organization representing health care stakeholders. This organization, incorporated as Virginia Health Information (VHI), found growing support over the next three years. Along the way, the collection of outpatient data was mandated in 1994 for state-funded care. Outpatient data was viewed as a critical piece of the health care puzzle as many surgical treatments, tests, and medical treatments were being performed on an outpatient basis in freestanding ambulatory surgical centers, hospital outpatient departments, and physician offices.

History and Development of Virginia Health Information

A Public and Private Partnership VHI was formed in 1993 as a nonprofit organization to assist the Commonwealth of Virginia with the collection, analysis, and dissemination of health care data. There was no desire by the Commonwealth to expand state government to take on this function. Needed private sector expertise was available, interest from business and consumer groups was high, and the projected cost was low. House Bill 2361 passed unanimously on both sides of the General Assembly. The partnership was forged.

Board of Directors' Structure The initial appeal of VHI was the composition and nominating process for its Board of Directors. Each director is nominated by their trade organization. Members come from the categories with the number of representatives below.

Stakeholder	Original	Revised
Business	5	5
Consumer	2	2
Hospital	3	2
Nursing Home	0	2
Payer	2	2
Physician	3	2
State	2	2
Total Representatives	**17**	**17**

The above table also reflects changes made in 1996 to expand member categories to include nursing home representatives while maintaining the total number of Board representatives at 17.

The configuration of the VHI Board was carefully designed to gain input from all health care stakeholders while providing the greatest number of representatives (5) to businesses. This structure affords important input from health care providers while maintaining its focus on public information through business and consumer representation.

Staffing VHI's Board is supported by four full-time employees; an Executive Director, Executive Assistant, Programmer/Analyst, and Secretary/Receptionist. All staff use a variety of computer applications to reduce the level of support and other staff. Newsletters, informational brochures, internal accounting, and other reports are designed and produced by VHI staff. This approach allows VHI to provide current information at a low cost. Core functions of processing over 760,000 inpatient hospital discharge records annually are conducted through a subcontract with Commonwealth Clinical Systems, Inc. (CCS) in Charlottesville, Virginia. Through this and other subcontracts, the need for additional staff is limited and overall costs are reduced. A secretary/receptionist is the only position to be added to VHI's staff as a result of new duties. There will be a need for considerable project coordination activities as the strategic plan is implemented. The extent to which this can be made part of subcontracts is unknown and will be evaluated. Regardless, it appears that budgeted revenues will cover any additional resources for this activity.

Accomplishments VHI's accomplishments are many and have progressively increased in significance.

- VHI has established a patient level data base with a cost per discharge to the Commonwealth of $.38 compared to an average of $1.27 nationally. This comparison does not include hospital costs in Virginia and other states to produce this information. *See table below.*

STATE	BUDGET	# D/CHGS	$ per D/CHG
ARIZONA	90,000	440,000	0.20
CALIFORNIA	782,000	3,800,000	0.21
CONNECTICUT	300,000	390,000	0.77
FLORIDA	120,000	1,800,000	0.07
ILLINOIS	1,150,000	1,600,000	0.72
IOWA	240,000	380,000	0.63
KENTUCKY	550,000	531,078	1.04
MAINE	1,000,000	159,000	6.29
MARYLAND	300,000	630,000	0.48
MASSACHUSETTS	9,000,000	850,000	10.59
NEVADA	200,000	132,000	1.52
PENNSYLVANIA	3,000,000	1,800,000	1.67
TENNESSEE	400,000	900,000	0.44
UTAH	900,000	210,000	4.29
VIRGINIA	**288,000**	**765,801**	**0.38**
AVG TOTALS	**$ 1,221,333**	**959,192**	**$ 1.27**

This lower cost is primarily because the data processing system was designed by VHI. This approach is much less costly than if a "turn key" system was adopted. Another reason is that the data processing and editing are performed by CCS, a Virginia data processor. Their long history of health care data processing has allowed for reduced development and operating costs.

- There has been very high demand for VHI-developed data products. These data were not available before VHI began this program. In addition VHI's policy of distributing these products at a fraction of the private market cost has spurred use by groups across the country. Because of this approach, the Commonwealth's FY96 contributions represented just 84% of the actual patient level data base costs.
- VHI has created public use and research files covering over 1.5 million hospital discharges. Files are used extensively by businesses, hospitals, payers, state agencies, and universities.
- VHI has published a multidisciplinary study on obstetric care for consumers. This study involved private sector funding, extensive involvement by hospitals and physicians, and was widely disseminated to the public.
- Using private funds, VHI contributed $20,000 for an outpatient pilot study to determine the value and efficacy of these data for Virginians. Representing all health care provided to almost 10% of Virginia's population, the data hold great promise to assist consumers, providers, and the Commonwealth make informed health decisions, improve care processes, and assist public health and policy decisions.

Budget History and Audited Financial Statements VHI initially operated solely on the funding provided by the Commonwealth of Virginia. During the last fiscal year, the availability of useful data and the efforts of VHI staff have resulted in developing approximately 30% of VHI revenues from outside sources. This has allowed VHI to continue operations even though the contract amount has decreased.

Each year an independent audit is produced which is found in Appendix B. The audit results reflect VHI's conservative financial management of funds and ability to procure other funding to reduce the burden of costs to the Commonwealth.

Regulatory In August 1996, the Virginia Department of Health (VDH) signed a contract with VHI to continue maintaining the patient level data base and, importantly, for VHI to begin its responsibilities to maintain, develop, and publish hospital and nursing home efficiency information. VHI has provided data and information services to the VDH for several years and has established working relationships with a number of divisions acting primarily as an information resource.

Along with responsibilities defined by HB1307, VHI is developing plans to use the VDH telecommunications network where feasible. Links to this network may potentially simplify processing of patient level data, speed data transmission, and allow incorporation of related information from a number of sources to aid public health efforts.

The relationship between the VDH and VHI is further strengthened through the Commissioner of Health's, Randolph L. Gordon, MD, M.P.H., membership on the VHI Board. Dr. Gordon's extensive background in health data enhances the Board's ability to develop useful and valid information for consumers and purchasers of health care.

What Consumers Want to Know

This section was developed through review of a marketing research report produced in late 1995 by the Southeastern Institute of Research, Inc.. The report was commissioned and funded by the Virginia Hospital and Health Care Association (VHHA) and is referenced with their permission.

A total of six focus groups and a telephone survey were used to determine what consumers would like to know when choosing health plans, hospitals, nursing homes and physicians. Focus groups were held in Richmond, Alexandria, and Richlands. The telephone survey sampled Virginians across the Commonwealth.

In general, cost is the biggest concern expressed by consumers. A host of concerns were also identified:

- fear of loss of medical insurance coverage,
- lack of choice of physician,
- lack of direct access to a specialist,
- concern over the potential for premature hospital discharge, and
- concerns about penalties associated with not following all the payer's rules for reimbursement.

Specific lists of concerns and factors important to consumers and employers were developed through focus groups and surveys. Each provider group was addressed. Information detailed below was extracted from the report provided by the above referenced reports and tables. Issues are ranked in approximate order of importance.

What do consumers want to know about Health Plans?

- the cost of the plan and amount of the co-payment,
- the physicians available, and
- which hospitals were in the plan's network.

Consumers noted that they would like to choose plans based on costs and "cost/value" relationships.

Employers had concerns similar to consumers and want to know; the network-hospital and physician affiliation, the quality of the coverage, the cost and amount or types of "outcome reporting". Outcome reporting refers to information on how people fare as the result of coverage, treatment or other interventions.

What do consumers want to know about Hospitals?

- The facilities' capabilities were of major importance.
- Information about the hospitals' staffing was an issue.
- The care provided by the physicians was a concern.
- The costs the consumer would bear was important.
- Information about mistakes and the facilities' reputation was desired.

Consumer concerns about Nursing Homes

- The overall nursing home environment and cleanliness were important.
- The education and training of staff.
- The costs of the nursing home.
- The nursing care provided.

Consumer concerns about physicians

- The education and training,
- Patient satisfaction with the physician's care,
- The number of malpractice settlements,
- Experience with a particular problem, and
- Communication skills.

VHI is proposing to develop information for consumers with these stated concerns in mind. Some of this information is already collected but not generally available in a single source. VHI will identify those sources to make this information available both in printed publications and in an interactive on-line system to help consumers find information they want in their geographic area. Please see the matrix in the "Executive Summary" for details on costs and implementation dates.

OUTPATIENT DATA

Following legislative action, all data were to come from the state agencies that collect the data through a subcontractor. State agencies were cooperative, but did face significant costs from their data subcontractors. No additional funds were appropriated for this effort and each agency, the Department of Medical Assistance Services (DMAS) and Department of Personnel and Training (DPT), incurred charges of $7,000 to over $20,000 to provide this data to VHI. VHI staff and VHSCRC personnel met with state agencies and worked out detailed specifications for receipt of data. Once received by VHI, no additional funds were received for processing the estimated 22 million annual records. The VHI Board made a commitment of $20,000 using monies obtained from outside projects and product sales to conduct a pilot outpatient project. The purpose of the project was threefold:

1. *Is the data usable?* A detailed review of the data indicated that, with sufficient resources, reliable and valuable information could be derived. The databases provided by DMAS and DPT include elements on the types of services sought, the place of service, charges, costs, diagnoses, procedures, the provider rendering services, and related information. The actual format of the data provided varied between DMAS and DPT. VHI and our subcontractor carefully reviewed the fields on the two data bases and have developed a strategy to "map" the majority of fields to a common field to allow comparisons. While there are some differences, it is possible to combine the data sets and analyze data together or separately.
2. *Is the data accurate?* During this phase of analysis, each data item was reviewed for valid values and the contents were checked for validity. This analysis indicated that there are some data quality issues to be addressed if the project continues. These areas are amenable to clarification and improvement.
3. *Can useful information be derived from the data?* VHI analysis is that these data have the potential to be used for many studies on issues of the cost, quality, access to, and efficacy of care.

VHI recommends a continued pilot study using existing outpatient data and a study group to cost-effectively guide several demonstration analyses. The results from this analysis and ensuing recommendations will be a part of VHI's 1997 annual report to the Board of Health, Governor, and General Assembly.

A wide range of data reports and products can be derived from the outpatient data. Data reports can be adjusted to reflect the general population to provide important information on trends of outpatient care, variations in treatment approaches and their related costs, and efficacy. Geographic comparisons of how care is accessed and a myriad of related issues.

<u>Data Files</u> A critical step in producing valuable information from these data is processing the data into usable formats. With over 22 million data records annually in different formats for hospital outpatient surgery, physician office, physician hospital services, freestanding surgical centers, laboratory, and pharmacy, separating different data types and linking them where appropriate is a major and critical effort. Once done, information can be segmented into a series of data files including:

- ambulatory surgery including physician office, hospital outpatient, and freestanding surgical centers,

- emergency room data sets,
- inpatient data sets linked with physician and other professional service information,
- disease specific episode of care datasets combining all care for patients with certain conditions e.g. diabetes, cardiac surgery, and hypertension, and
- standard data files as well as special use files assembled for specific projects.

The sheer volume of information and need for pre-processing support the need for considerable "front end" efforts to create data files of value to the user.

Note: A three-year plan with detailed information regarding current status, affected entity, legislative action, cost, and funding is found in the "Executive Summary

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