REPORT OF THE
VIRGINIA HEALTH SERVICES
COST REVIEW COUNCIL
AND
VIRGINIA HEALTH PLANNING BOARD

To Study the Possible Establishment of a Patient Level Data Base
SJR 178 (1991)

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

SENATE DOCUMENT NO. 10

COMMONWEALTH OF VIRGINIA
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TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 1

II. INTRODUCTION 5

III. DESCRIPTION OF A PATIENT LEVEL DATA BASE 6

A. Definition 6

B. Possible Sources of Data 7

C. Quality Measurements 9

IV. STATE PATIENT LEVEL DATA SYSTEMS 11

A. Historical Perspective 11

B. Functions of a State Patient Level Data Base 12

C. Costs Incurred by Other States 16

V. INTEREST IN ESTABLISHING A PATIENT LEVEL DATA BASE IN VIRGINIA . .20

A. Historical Patient Level Data Initiatives in Virginia 20

B. Initiatives Pursuant to the Enactment of SJR178 21

C. A Summary of Concerns from Virginia Organizations 26

VI. CONCLUSION AND RECOMMENDATION 31

APPENDIX 1	Enabling Legislation SJR 178 (1991)
APPENDIX 2	Risk Adjustment Systems
APPENDIX 3	Data Elements by State
APPENDIX 4	Budget Data by State
APPENDIX 5	Summary of Public Comment
APPENDIX 6	Recommendation - VHPB
APPENDIX 7	Recommendation - VHSCRC
APPENDIX 8	Health Information Planning Project

I. EXECUTIVE SUMMARY

By enacting Senate Joint Resolution SJR 178 (1991)(Appendix 1), the Virginia General Assembly has requested the Virginia Health Services Cost Review Council, in conjunction with the Virginia Health Planning Board, to study all aspects of the establishment of a patient level data base in Virginia. A patient level data base can be used in efforts to contain costs and improve the appropriateness of care. These objectives can be achieved by allowing providers, payers, and consumers access to information needed to make intelligent buying decisions; to evaluate medical technologies and services; and to establish guidelines to improve treatment and limit unnecessary procedures. A patient level data base would also provide information regarding access to care issues and facilitate effective planning for future needs. Potential use by providers, payers, employers, state and local governments, and the general public was to be studied. The need for and efficacy of establishing state agency oversight to ensure full participation, accurate and timely reporting, proper information dissemination, and maintenance of patient confidentiality were also to be examined. The Virginia Health Services Cost Review Council and Virginia Health Planning Board were additionally requested to prepare a grant application for The Robert Wood Johnson Foundation's new grant program for states entitled "Information for State Health Policy". The intent of this grant program is to help states strengthen their health statistics systems, to support state policy making, and to aid in program development and management.

Patient level data refers to treatment and charge information that is specific for individual patients. Information that can be collected in a patient level data base includes: patient demographic information (i.e. age, sex, and residence location), patient diagnoses, patient procedures, attending physicians, and facility charges for each procedure. Patient level data can be used to:

-Publish patient charges, by facility, for all Diagnostic Related Groupings (DRGs);
-Publish physician charges for all DRGs;
-Track rates of admissions by diagnoses in areas as small as a zip code area;
-Evaluate incidence of disease in an area;
-Evaluate the effectiveness of illness prevention programs; and
-Evaluate access issues.

Currently, thirty-five states have enacted legislation to provide for institution health data collection. Thirty-three of those states, not including Virginia, collect hospital patient level discharge data. Twenty-four of the thirty-five data collecting states collect both facility financial data and patient level data. Two states, of which Virginia is one, collect only facility financial data.

Patient outcome data can also be collected as part of a patient level data base. Outcome data measures the patient's condition upon discharge. It can used to assign some measure of "quality" to care being provided. "Quality Indicators" could be used to implement "buy-right" health care purchasing strategies. Pursuant to such a strategy, purchasers would reward facilities that provide high-quality, cost effective patient services by encouraging utilization of those facilities.

Three states have enacted legislation to collect outcome data to measure "appropriateness and quality" of health care services. Currently, there are eight major proprietary computerized systems available for risk adjustment and severity rating.

In contrast to patient level data, the Virginia Health Services Cost Review Council currently collects facility financial information on an aggregate basis. Using its methodology, total charges (revenues) are compared to total costs (expenses) in order to evaluate the reasonableness of charges. Total yearly facility utilization is reported to the Virginia Health Services Cost Review Council but no data are available regarding specific utilization for services or patient origins. Overall total charges are reviewed, but specific charges by diagnosis or procedure are not reviewed. The Virginia Health Services Cost Review Council does publish selected charges for Virginia hospitals and nursing homes in order to provide consumers with additional purchasing information.

As part of the analysis required by SJR 178, Howard M. Cullum, Secretary of Health and Human Resources, wrote to approximately 150 groups and organizations to solicit information, comments, and concerns regarding the establishment of a patient level data base in Virginia. Responses indicated general widespread support for the establishment of such a system, but many concerns were raised, including source of data, choice of collection format, confidentiality, and cost.

Several phone surveys to those states utilizing a patient level data base were undertaken to determine specific uses, operating expenses, capital expenditures, and future goals. Personal interviews and literature searches were also undertaken.

In June, 1991, both the Virginia Health Planning Board and Virginia Health Services Cost Review Council voted to support the establishment of a patient level data base. However, in its recommendations, the Virginia Health Services Cost Review Council urged that there be adequate advance planning prior to key decisions being made for establishing such a system.

The Commonwealth also submitted an application on July 30, 1991 for funding to The Robert Wood Johnson Foundation's new grant program entitled "Information for State Health Policy". Governor L. Douglas Wilder appointed the Office of the Secretary of Health and Human Resources as the lead agency for the grant application. Pursuant to grant guidelines, an interagency working group, consisting of public and private agencies and organizations, was created. Its purpose will be to establish a coordinated and systematic planning framework for addressing the health policy and planning issues facing the Commonwealth, including the establishment of a patient level data base. In early October the Foundation notified Secretary Cullum that Virginia was not chosen as one of the recipients for a grant. Secretary Cullum, however, has indicated his desire to initiate the planning process as described in the Foundation's grant application.

Given the general widespread support for establishment of a patient level data base, while being mindful of the complexities and concerns which are involved in such a process, it is recommended that the Commission on Health Care for All Virginians indicate its support for establishing such a system. It is further recommended that the Commission require the Secretary of Health and Human Resources to utilize the committee and planning structure established in The Robert Wood Johnson Foundation's grant application, with input from the Virginia Health Services Cost Review Council and the Virginia Health Planning Board, to develop a detailed, systematic plan for establishing a patient level data base in Virginia. The Secretary should be requested to report to the Commission by October 15, 1992 regarding this planning effort including proposed legislation needed to establish a patient level data base in Virginia.

II. INTRODUCTION

Health care providers, private third party payers, public payers (i.e. Medicare, Medicaid, etc.), employers, state and federal policy makers, health planners, researchers, and the general public all agree that there is a need to constrain rising health care costs. At the same time, these groups recognize the need to maintain quality of health care, to ensure access for needed services, and to meet future service needs.

Decisions are continually made by each of these groups that impact the availability and accessibility of health services. Health care policy attempts to integrate these separate decisions into a system that can meet both present and future service requirements.

The questions asked by each group in the health care delivery process are similar:

WHO needs

WHAT services and

WHEN are services required?

WHERE is service needed and where is it currently provided?

WHY are particular services needed in an area and

HOW should these services be reimbursed?

Patient level data bases have been created in an attempt to provide answers to such questions.

III. DESCRIPTION OF A PATIENT LEVEL DATA BASE

A. DEFINITION

A patient level data base is defined as an organized storage of individual health data gathered at a point of medical intervention. A patient level data base is distinguished from other health related data bases in that it only contains information pertaining to an individual's medical treatment.

Patient level data bases have been developed primarily to monitor patient utilization, to determine the consumption of resources, and to ascertain the capacity of the health system to supply needed services. Patient level data bases have been developed by federal, state, and private organizations. The contents of each data base differ due to the unique concerns of the organizations developing the systems.

Vital statistics, health status surveys, and health lifestyle surveys are health data bases maintained on various populations irrespective of medical interventions. For example, the Public Health Service maintains the national health interview survey data base, and the behavioral risk factor surveillance system. These data bases are maintained to analyze the relative "health" of a population. They are used to plan prevention and wellness programs, and estimate demand for future medical service needs. A patient level data base combined with other health related data can form a comprehensive health data system.

Information gathered from public and private organizations that maintain patient level data bases indicates that core data sets usually have the following elements:

- Patient identification number (a number that permits retrieval of the original medical record for verification and/or correction);
- Patient birth date or calculated age;
- Patient sex;
- Patient race;
- Patient ZIP Code;
- Dates of admission and discharge or calculated length of stay;
- Physician identification number;
- Attending physician identification number;
- Source of admission;
- Principal and secondary diagnoses;
- Principal and secondary procedures;

- Date of principal procedure or number of days following admission;
- Dates of secondary procedures or number of days following admission;
- Discharge status;
- Total charges;
- Principal payer; and
- Expected source of payment.

A core set of patient level data can be constructed using either primary or secondary patient data collection techniques. Primary data collection requires the data collection authority to gather selected data elements on each patient receiving treatment directly from the service provider. Secondary data collection requires the abstraction of selected data elements by the data collection authority from previously existing patient documentation, such as claims forms or other administrative records.

B. POSSIBLE SOURCES OF DATA

Standardized claims forms and other administrative records provide specialized information for a variety of service providers. These service providers include acute care hospitals, state and federal hospitals, specialty hospitals (i.e. psychiatric, rehabilitation, etc.), ambulatory surgical hospitals, long-term care facilities, and individual physician practices.

Used only for reimbursement purposes, it is estimated that claims forms are produced on at least 95 percent of all patients treated. Claims forms include the Uniform Bill (UB)-82 for inpatient claims and the Health Care Financing Administration (HCFA) Form-1500 for outpatient claims. These forms are considered industry standards and are used for reimbursement by various payers, including the state and federal government. In general, claims forms contain information that include patient demographics, discharge diagnoses, charges incurred, location of service, and service providers.

The instructions and codes used by facilities in completing these claims forms and the processing of the resulting claims forms varies by individual payer. The American National Standards Institute (ANSI), as coordinator for voluntary standards activities in the United States, is currently involved in standardizing reporting. The insurance subgroup of the ANSI is developing standards for processing health insurance claims forms. Development and adoption of these standards should increase the efficiency of the claims forms filing process and improve the quality of the claims data available through individual payers.

Standardized administrative records are uniform minimum data sets containing specifically defined patient documentation. Much of the work on developing minimum health data sets has been conducted in conjunction with the National Committee on Vital and Health Statistics (NCVHS). Created by federal law, the NCVHS is the public advisory body on health statistics to the Secretary of the United States Department of Health and Human Services (DHHS). Health related minimum data sets have been developed to standardize hospital patient discharge data, ambulatory medical patient care data, long-term care facility data, and long-term care client data. These forms provide standardized patient documentation for all patients treated.

The Uniform Hospital Discharge Data Set (UHDDS) was originally adopted by the DHHS in 1974. The UHDDS was adopted to ensure comparability of hospital discharge data in the United States. It has been widely used by federal agencies, state governments, and the private sector for the last seventeen years, and was formally revised by the DHHS in 1984.

The Uniform Ambulatory Care Data Set (UACDS) complements the standardization of hospital discharge data by standardizing ambulatory care data. The UACDS was developed in 1976 by the NCVHS and was recently updated. The UACDS was originally developed to describe only visits to physicians' offices, but is now being recommended for applicability to a wide range of health practitioners, including physical therapists, psychologists, optometrists, chiropractors and podiatrists.

Three other data sets in various stages of development are the Long-Term Care Facilities Minimum Data Set (LTFMDS), the Long-Term Care Client Uniform Data Set (LTCUDS) and HCFA's Nursing Home Resident Assessment Core Data Set (MDS). The MDS was mandated by the Omnibus Budget Reconciliation Act of 1987 and overlaps with the scope of the LTCUDS since both describe nursing home residents. However, the LTCUDS, when completed, will have a broader applicability, including residents of nursing homes that are not certified under Medicare or Medicaid, residents of other institutional and residential settings, and long-term care clients living in their own homes.

Efforts are also being undertaken to standardize the collection of patient clinical information. Patient clinical information can be used for assessing the effectiveness and outcome of various medical treatments. The Uniform Clinical Data Set (UCDS) has recently been developed by HCFA for use by Peer Review Organizations (PROs). PROs contract with HCFA to review the medical necessity, appropriateness, and quality of health care provided to Medicare beneficiaries. The UCDS is intended to introduce more order and uniformity into the peer review process, as well as produce a massive clinical data base for use in research.

Currently under development, the electronic medical record will be an automated, standardized patient record containing detailed clinical information on patient condition and treatment. Detailed patient information can be stored electronically and made available by computer. The Institute of Medicine's Committee on Improving the Patient Record, chaired by Dr. Don E. Detmer, University of Virginia Health Sciences Center, has endorsed the use of the electronic medical record and concluded that it will lead to improved patient care.

C. QUALITY MEASUREMENTS

In order to have a multifunctional patient level data base, its data must make the analyses of costs, severity of illness, and quality of care possible. Various proprietary computer systems and software models have been developed to produce an estimate of treatment "quality" based on patient outcome. To realistically estimate patient outcome, it becomes necessary to adjust for differences in patient severity. The process of case mix analysis, or risk-adjustment, involves identifying the critical patient characteristics, such as age and complicating disorders, and then applying statistical models to compensate for these differences. An expected patient outcome of treatment can be predicted considering a patient's medical condition. "Quality" can then be measured by a comparison of actual outcome to expected outcome.

Currently, there are eight major proprietary risk-adjustment computer systems available. These systems varied in the scope of data required, the time that data are entered, and the types of statistical models used to define severity and predict outcome.

The MedisGroups System, Computerized Severity Index, and the APACHE II System are all computer systems which require the input of specific clinical data in order to predict patient outcome. These clinical data are collected at the time of admission and at various intervals during treatment. Due to the unique data requirements of these systems, it is estimated that ten to twenty minutes of data entry time are required to complete a patient record.

Coded Disease Staging, Refined DRGs, The Acuity Index Method, PRAGmatic System, and Risk-Adjusted Mortality Norms are all computer systems which predict outcome based on data abstracted from UB-82 claims form or medical record abstracts. These systems are not considered as costly since they utilize data contained on existing patient documentation. A more detailed discussion of the systems mentioned above can be found in Appendix 2.

There is also substantial federal interest in risk-adjustment and outcome measurement. HCFA is funding major research projects on severity rating and risk adjustment to be used for the assessment of patient outcomes. The U.S. Public Health Service's Agency for Health Care Policy and Research is similarly encouraging research through its Medical Treatment Effectiveness Program (MEDTEP). These ongoing efforts to study current severity rating systems, to identify clinical practice guidelines and quality standards, to develop new data bases to enhance medical effectiveness review, and to explore alternative delivery strategies are substantial and likely to spawn a number of new risk adjustment systems in the future.

IV. STATE PATIENT LEVEL DATA SYSTEMS

A. HISTORICAL PERSPECTIVE

Historically, patient level data systems have grown concurrently with the increased sophistication of health care delivery. In the 1970s, substantial federal funding was allocated to regional levels for the collection of health information. Small area needs were studied and health plans were formulated that encouraged service delivery in those areas.

The major policy concern during this decade was cost containment. Immediate action was taken in those states where health care inflation, as well as the consumer price index, were far above the national average. Many states enacted legislation which created data collection authorities. Sixteen states designed cost review authorities and began to review hospital budgets. Ten of those states began to set hospital rates.

In the 1980s, there were growing concerns regarding indigent care, the cost of state supported health care, and the cost shifting associated with these levels. Legislation was enacted in fifteen states to create data collection authorities having the primary responsibility of providing decision makers, both in and out of government, with adequate information concerning hospital patients, hospital charges, and hospital payer mix. These new state organizations had no regulatory function. Also, during this decade, four states disbanded their rate setting programs in favor of data collection authorities. Nebraska and Kentucky discontinued all financial and patient level data collection efforts.

To date, thirty-three states have enacted legislation to provide for state-wide patient level data bases. All thirty-three states collect patient level hospital discharge data. In addition, four of the thirty-three states collect patient level ambulatory surgical hospital data. Five of the thirty-three states collect patient level long-term care data. Iowa is currently the only state collecting patient level data from individual physician practices.

In order to minimize the costs of patient level data collection, the majority of states have chosen to abstract selected data elements from claims forms or other administrative records. Of the thirty-three states with patient level hospital discharge data bases, twenty-one are composed of data abstracted from the UB-82 claims form. Eight of the thirty-three patient level hospital discharge data bases are composed of data abstracted from the UHDDS. Four states require that data be submitted on unique forms. A complete list of individual data elements collected by states can be found in Appendix 3.

Several states have also become involved in risk-adjustment and outcome assessment. Colorado, Pennsylvania, and Iowa have recently required hospitals to submit patient outcome data using the Medisgroups system.

Other states have used risk-adjustment computer systems for analyses and reporting of their state-wide hospital discharge data bases. Ohio, Florida, New York and New Jersey employ the use of Refined DRGs to adjust hospital charge data for patient severity. California, Rhode Island, and South Carolina use Coded Disease Staging to severity adjust mortality rates. New York and Florida use both Refined DRGs and Coded Disease Staging to severity adjust both charge and mortality data.

B. FUNCTIONS OF A STATE PATIENT LEVEL DATA BASE

Patient level data collected on a state-wide basis can offer a variety of users an array of applications. These can be summarized as follows:

Institutional Health Care Providers

States with a central patient level data system generally report that the providers of health care are the principle users of the information. Providers have often requested that more utilization, patient origin, and charge information be reported than is now currently collected. Although Virginia does not have a patient level data base, the Health Services Cost Review Council has found providers to be the major user of facility financial data.

Data can be used by institutional providers in many ways that positively impact health care delivery. Individual hospitals find data helpful to assess their own market performance. These data can lend support for actions initiated within a facility to reduce expenditures, address quality issues, or correct inefficiencies. Similarly, data can help providers develop strategic plans by providing information on health care utilization patterns and demand for services.

Physicians

States with a patient level data base report that individual physicians and medical associations are also major users of patient level data. Charge data by particular DRGs are used by physicians to provide patients with information concerning treatment expense. Physicians also use the data to evaluate their own personal referral options.

Another major application of patient level data by various individual physicians and physician associations is small area analysis. Small area analysis is the measurement of the rates of certain medical events (for example, caesarean sections) in a population whose demographic profile is known (for example, a county or city). The rates of medical events vary from area to area for a number of reasons, including the health status of the population, accessibility to health services, and provider practice patterns. Small area analysis has allowed identification of medical events whose rates otherwise seem to vary without clear explanation. Results of small area analysis can lead physicians to discuss the reasons for such individual variations and to examine their own practice patterns.

Small area analysis can also be a component of a system-wide cost containment strategy. For example, the Maine Medical Assessment Foundation and the Maine Medical Association have been conducting small area analysis using the state's patient level data base for more than ten years. After feedback from this research was given to individual physicians in Maine about hysterectomy rates, the number of these operations declined without measurable adverse health effects to the state population. Admission rates for back surgery and pediatric medical admissions also showed similar declines. Other procedures, such as vascular surgery, are currently under study.

A study recently reported in the New England Journal of Medicine evaluated the differences in hospital usage rates between Boston, Massachusetts and New Haven, Connecticut. It was found that Bostonians use 4 1/2 beds per 1,000 population, as compared to fewer than 3 beds per 1,000 in New Haven. Most of the differences in usage rates occurred in the care of patients with medical conditions for which existed a high national variation in use rates. These findings have helped lead to an examination of practice patterns and refinement of treatment protocols.

Third-Party Payers

The payers of health care include insurance companies, preferred provider organizations (PPOs), health maintenance organizations (HMOs), and state and federal governments. Payers can use a state-wide patient level data base for the development of provider contracting strategies. Selective reimbursement strategies can also be developed on a facility specific basis to promote utilization of those facilities which provide services at a cost effective rate.

Employers

As employers have seen more of their operating costs for employee health benefits increase, their need for data has increased. Employers now analyze claims forms, set up self-insurance plans, establish direct provider contracts, and educate employees on personal health care purchasing. A business group in Florida for example, recently published a booklet using charge information from the state's patient level data base to help both benefit managers and employees make cost effective provider selections.

Many employer groups have also begun to use patient level data with risk-adjusted outcome measures to initiate "Buy-Right" health care purchasing plans. "Buy-Right", as advanced by Walter McClure, chairman of the Center for Health Policy Studies in Minneapolis, Minnesota, presents a health care reimbursement strategy designed to reward quality and efficiency, rather than quantity. Data are used to identify providers who deliver the best patient outcome at the most efficient price. Patients are then given incentives to choose these providers.

Based upon the "Buy-Right" model, the Cleveland Health Quality Choice was formed in Cleveland, Ohio in 1989. Initiated and sponsored by the Cleveland Tomorrow business group, the Cleveland Health Quality Choice is a collaborative program to measure and improve the quality and efficiency of health care services community-wide. This business effort, joined by the Greater Cleveland Hospital Association and the Academy of Medicine of Cleveland, has three components designed to produce system savings and enhance quality of care: 1) All area hospitals have agreed to provide risk-adjusted patient outcome measures and patient evaluations of care; 2) Employers have agreed to educate consumers and implement benefit plan incentives to encourage consumer choice of selected providers; and 3) Area employers have agreed to use a portion of their health care savings to underwrite solutions to Cleveland's access problems.

As a purchaser of health care, Virginia has the same concerns regarding cost control and utilization. Virginia projects spending in excess of $3 billion in the next biennium on health care through the Department of Health, Department of Medical Assistance Services, and the state employees' health plan. Additional information regarding utilization patterns and facility charges would enable the Commonwealth to develop more cost effective purchasing strategies.

Consumers

As consumers spend more dollars on out-of-pocket health care costs, their need for information increases. As stated in a recent edition of the publication, Medical Benefits, "In 1989 individuals paid 37 percent of their health bills, including health care premium costs, out of their own pockets. Nationally, by the year 2000, it is estimated that the total expenditure for consumers will approach $400 billion." Health care providers are sought that can offer quality at a reasonable price.

A consumer is frequently faced with provider choices in primary care, specialty services, and long-term care. Facility information from a patient level data base can provide consumers with better information for making these decisions.

Illinois has actively sought to educate the public on health care purchasing. For example, the Illinois Health Care Cost Containment Council provides health care charge and utilization literature to the state's school systems for use in their required consumer education classes. Instruction on health care purchasing has now become a major component of those classes.

Researchers and Evaluators

Research employing patient level data can have far reaching policy implications. For example, patient level data are used for the analyses of existing state health education and illness prevention programs. Decisions are often made about expenditures with little or no quantitative follow-up on their effectiveness. A patient level data base can provide the type of basic information needed to analyze program effectiveness and provide data useful in making decisions about future funding.

The State of Washington recently launched a research project to study the impact of its state funded pre-natal care program. Vital records birth data were integrated with the existing patient level data base in order to analyze birth outcomes. Each mother's UB-82 record was matched to the child's birth certificate and any possible death record. Reported hospital cost and length of stay data were matched to birth outcome. The analyses of these data over time will provide quantitative results regarding the effectiveness of dollars spent on pre-natal care programs.

Health Planners

There are access to medical care issues in many rural areas of the country. A patient level data base can provide health planners with information useful in developing plans and strategies for service delivery in those areas.

A statistical model has recently been developed and employed in Arkansas to provide information on access to care in the rural environment based on current utilization trends. This statistical model identifies under-served areas and predicts primary care utilization. It also serves as a general tool to study the impact of possible hospital closings on a locale and the subsequent impact of closings on surrounding hospitals.

Health planners and other public health officials throughout the country have launched the federal "Healthy People 2000" effort to promote the achievement of various health objectives by the end of the decade. The purpose of "Healthy People 2000" is to commit the nation to the attainment of three broad goals to help improve the quality of life in the United States. These goals are to increase the span of health life, to reduce health disparities among population groups, and to achieve access to preventive services for all.

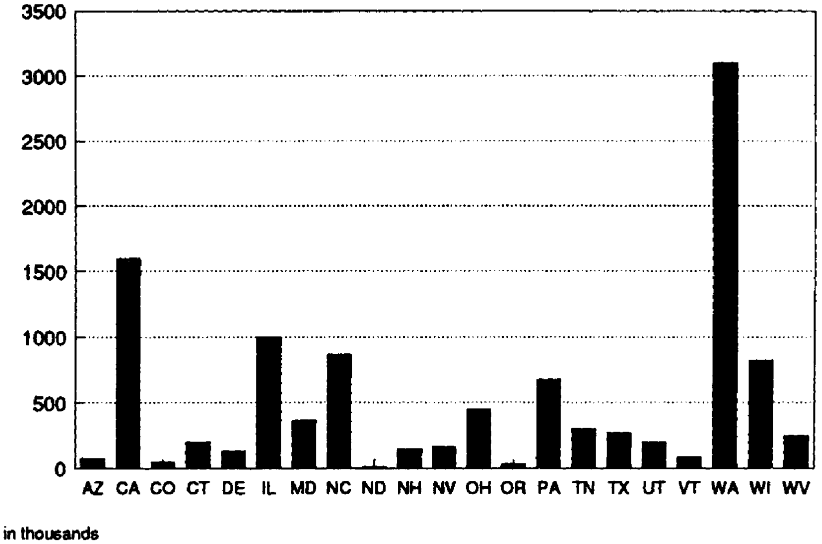
The effort presents these broad goals in the form of measurable targets, organized into twenty-two priority areas, to be achieved by the year 2000. Relying on the current level of health data collection, Virginia can tell whether it meets health targets in only twenty-eight percent of the objectives. Only five other states can measure themselves in less than thirty percent of the situations. It is difficult to set priorities and develop programs when there are inadequate data to determine the current health status. Data are required to adequately determine current health status, monitor service needs, and effectively estimate future requirements.

C. COSTS INCURRED BY OTHER STATES

Twenty-seven states with a patient level data base responded to a program survey conducted by the Virginia Health Services Cost Review Council and the Virginia Health Planning Board. The survey revealed a broad diversity of financial commitments across the nation. Twenty-one states reported patient level data base budgets ranging from North Dakota's $9,000 to Washington's $3.1 million. These figures vary due to differences in state populations, state accounting methods, technical/human resources in place, and the use of state or private vendors for data processing and storage.

The graph in figure 1 illustrates the range of budget responses received.

FIGURE 1
PATIENT LEVEL
DATA BASE BUDGETS, FY90



During the program survey, conducted by staff of the Virginia Health Services Cost Review Council and the Virginia Health Planning Board, states were also asked to respond to the expenses incurred during start-up. Start-up costs for agencies varied substantially due to the year in which the system went into operation and the types of equipment purchased for start-up. Of those states responding to the question, the average start-up cost was approximately $247,000.

Agencies in other states have employed different strategies to manage the cost of implementing a patient level data system. For example, some states with both data processing capabilities and surplus capacity have chosen to allocate the hardware needs of the system to existing resources. By utilizing existing capacity, some states like Tennessee, which processes 1,000,000 records annually, spends only $20,000 a year for data storage. Others states with greater needs and expectations such as Pennsylvania, with 2.5 million records per year and a severity adjustment system, initially spent $675,000 for agency hardware. Some states, such as North Carolina, have chosen to use an outside vendor for data input and storage. These states have no initial hardware expense.

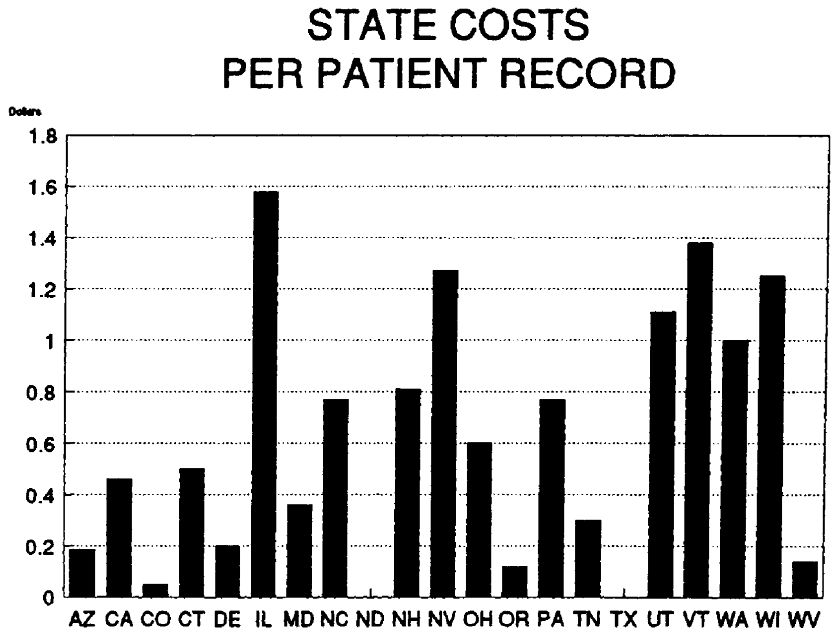
States vary in the media used to receive data and the degree to which they perform data edits. Where data were simply removed from facility data tapes without editing, as in Oregon, costs were only $.02 per record. Where other services were included such as confidentiality checks, record verification, and record edits, costs could range up to as high as Vermont's $1.38 per record.

State staffing patterns vary considerably. This can be attributed in a large part to the use of outside vendors. Most states employed between one to five full time equivalents (FTEs) for data analyses and management. FTEs for data input ranged from one to as many as twenty-five. In states using outside vendors for data input, at least one state FTE is employed to supervise the contract.

The reported average aggregate cost for the processing and storage of a patient hospital discharge data set was $ .70. Using this figure, the cost for the Commonwealth to process the estimated 718,000 discharges is $502,600. If the data tape provided by the Medical Society of Virginia Review Organization is utilized for Medicare and CHAMPUS beneficiaries, the cost for the remainder of patient records is estimated to be $251,300.

The estimated costs of processing and storing patient records are illustrated in Figure 2.

FIGURE 2

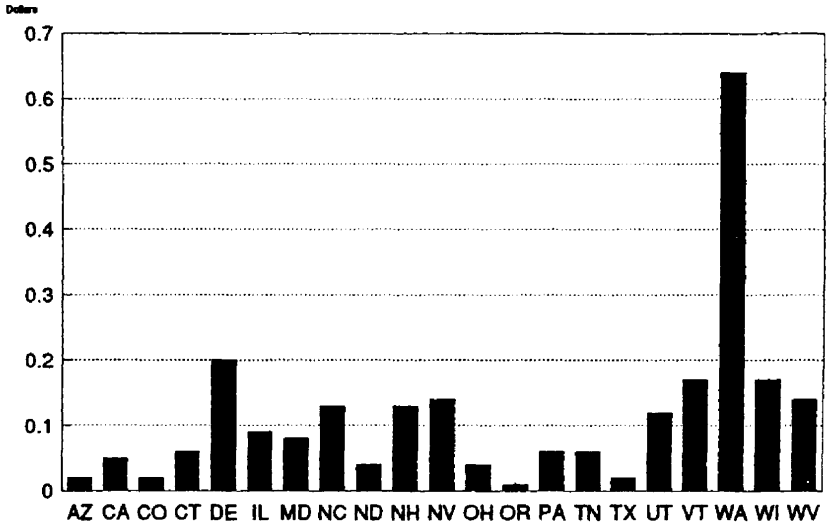


Figures not available for ND & TX

Expense per capita is another measure of estimating costs for patient level data collection. Using the reported patient level data base budgets, the average cost per capita is approximately $.12. Using this figure, the estimated cost for a patient level data base in Virginia would be $720,000.

Estimated expense per capita is illustrated in Figure 3.

FIGURE 3
PATIENT LEVEL DATA BASE
BUDGET PER CAPITA



The decision to adopt a risk adjustment system can impose substantial costs on all parties. Depending on the scope of data required and the degree to which data can be retrieved from tapes versus medical records, costs can range from $10.00 to $30.00 per record as reported by Pennsylvania.

States which mandate the reporting of risk adjustment data using proprietary software also report a substantial financial impact on providers. Colorado estimated aggregate provider start-up costs of $1,000,000 (This figure includes leasing of the computer system and staff training). Pennsylvania estimated aggregate provider start-up costs to be $25,000,000. Detail concerning each state's budget can be found in Appendix 4.

V. INTEREST IN ESTABLISHING A PATIENT LEVEL DATA BASE IN VIRGINIA

Although the 1991 session of the Virginia General Assembly enacted SJR 178 to have the Virginia Health Services Cost Review Council (Council) and the Virginia Health Planning Board (Board) study all aspects of the establishment of a patient level data base and to report their findings, there had previously been considerable study and discussion of this issue for a number of years. However, previous actions by state agencies and other interested groups were somewhat fragmented and did not result in any demonstrable resolution of this question.

A. HISTORICAL PATIENT LEVEL DATA INITIATIVES IN VIRGINIA

In 1984, a Joint Subcommittee studying the feasibility of preserving a regional health planning mechanism introduced House Joint Resolution (HJR) 27, which called for a study of the feasibility of establishing a consolidated health care data base in Virginia. House Document No. 16, issued in January, 1985, contained the report required by HJR 27. The report recommended that the Commonwealth move forward with the establishment of a statewide patient level data base and that specific recommendations for a more detailed study of this issue be developed.

Legislation was introduced in the 1986 session of the Virginia General Assembly to establish a patient level data base, but was subsequently carried over to the following year. Alternative legislation was apparently introduced at the 1987 session which would have required the Council to conduct a study on the impact and cost benefit of a consolidated health data base in Virginia. Based in part on concerns for funding to conduct the proposed study, the legislation was not enacted and the study was not completed.

Instead, in 1987, at the request of the then Secretary of Health and Human Resources, Eva S. Tieg, the Virginia Department of Health took the lead in establishing what became known as the Virginia Health Data Consortium. Its mission was to facilitate the availability of health data to agencies and organizations in the Commonwealth for utilization in planning and for delivering effective services to promote the health of all citizens. Its members included representatives of agencies and organizations who used health data and who had individual expertise in their respective organization's data. The Consortium subsequently identified data pertinent to two specific policy issues as pilot projects and published two documents entitled the Indigent Health Care Data Directory and the Nursing Manpower Data Directory.

In 1989, the General Assembly enacted legislation creating the Virginia Health Planning Board. The legislation provided, as one of the Board's responsibilities, that it "make recommendations to the Secretary, the Governor, and the General Assembly concerning statewide data collection systems for health care manpower distribution and for mortality and morbidity rates for citizens of the Commonwealth." See §32.1-122.02(B)(11). In 1990, in response to its 1989 mandate to make recommendations regarding development of a health data system, the Board formed a Task Force on Essential Health Data to study the health data needs of the Commonwealth and determine how health data could be used to affect the delivery and cost of health care services for all citizens. During 1990, the Task Force conducted surveys of providers, third party payers, consumers, businesses and industry, employers, health planners, legislators, and researchers and found there was widespread general support among potential users for a comprehensive health data system.

B. INITIATIVES PURSUANT TO THE ENACTMENT OF SJR 178

In order to assist in the SJR 178 analysis, Howard M. Cullum, Secretary of Health and Human Resources, wrote to approximately 150 groups and organizations, including provider groups, insurance organizations and other payers, business groups, health planners, medical schools, state agencies, and advocacy groups, to solicit information, comment, and concerns regarding the possible establishment of a patient level data base. (See Appendix 5 for the Secretary's letter and a summary of submitted responses).

Over fifty groups and organizations responded to the Secretary's request. Among the respondents were the following:

1. University of Virginia Health Sciences Center
2. Department of Health Administration, Medical College of Virginia, Virginia Commonwealth University
3. Williamson Institute for Health Studies, Medical College of Virginia, Virginia Commonwealth University
4. Virginia Hospital Association
5. Chesapeake General Hospital
6. Sentara Alternative Delivery Systems
7. Sentara Health System
8. Blue Cross/ Blue Shield of Virginia
9. The Travelers
10. Jefferson-Pilot Insurance/Financial Services
11. The Life Insurance Company of Virginia

12. American Family Life Assurance Company of Columbus
13. Kaiser Permanente
14. The Guardian Life Insurance Company
15. The Prudential Insurance Company of America
16. CUNA Mutual Insurance Society
17. Educators Mutual Life Insurance Company
18. Virginia Association of Health Maintenance Organizations
19. The Medical Society of Virginia
20. Virginia Academy of Family Physicians
21. Virginia Podiatric Medical Association
22. Virginia Academy of Clinical Psychologists
23. Commonwealth of Virginia, Department of Rehabilitative Services
24. Commonwealth of Virginia, Department of Mental Health, Mental Retardation and Substance Abuse Services
25. Commonwealth of Virginia, Department of Social Services
26. Commonwealth of Virginia, Department for Rights of Virginians with Disabilities
27. Commonwealth of Virginia, Department of Health
28. Commonwealth of Virginia, Department of Health Professions
29. United Coal Company
30. James River Corporation
31. Philip Morris
32. Infilco Degremont, Inc.
33. Hampton Roads Chamber of Commerce
34. Tidewater Health Coalition, Health Care Strategies, Inc.
35. Blue Ridge Regional Health Care Coalition, Inc.
36. Buyers Healthcare Cooperative of Greater Richmond
37. Richmond Area Business Group On Health, Inc.
38. Health Care Investment Analysts, Incorporated
39. Prompt Associates
40. William M. Mercer, Incorporated
41. Williams, Thatcher & Rand
42. Health Systems Agency of Northern Virginia
43. Northwestern Virginia Health Systems Agency, Inc.
44. Central Virginia Health Planning Agency, Inc.
45. Eastern Virginia Health Systems Agency, Inc.
46. National Association of Health Data Organizations
47. Medical Facilities of America, Inc.
48. Virginia Association for Home Care
49. Virginia Health Care Association

50. Oak Lea
51. The Richmond News Leader
52. Medical Society of Virginia Review Organization

As shown by the summary of comments contained in Appendix 5, there was general widespread support for the establishment of a patient level data base by most organizations that responded to the Secretary's letters. For example, a representative of the University of Virginia's Health Science Center stated that the issues being addressed in Virginia were similar to concerns expressed at the national level and in many other states. The Medical College of Virginia presented its view that studies of the data would provide useful information for health care purchasing decisions, evaluations of variations in the length and quality of care, and evolution of differences in the amount and type of care delivered to indigent clients. Several insurance companies indicated support for the concept, including Blue Cross/Blue Shield of Virginia. The Richmond Area Business Group on Health, Inc., strongly supported the value of establishing a public patient level data base. Individual businesses such as the United Coal Company, the James River Corporation, Philip Morris, and Infilco Degremont, Inc. also indicated approval for the establishment of a patient level data base. The Medical Society of Virginia Review Organization supported the concept and has agreed to provide data tapes of Medicare and CHAMPUS discharges to the Commonwealth with certain confidentiality restrictions. Finally, numerous state agencies indicated their support of and need for such a system.

While indicating support for the concept, a number of respondents, including several of those mentioned above, raised caveats regarding a patient level data base. Clearly, the motives and purposes for collecting data had to be specifically delineated. The Virginia Hospital Association expressed its concern that the means of gathering new data vary and could be costly. Chesapeake General Hospital raised the issue of the universe of data collection, i.e. whether it would include only hospitals or all other health care providers. The Medical Society of Virginia raised concerns about the misuses and abuse of information and protection against release of confidential or proprietary information. The common thread in all responses was that the establishment of a patient level data base would be extremely complex and must be carried out thoughtfully, with participation and input by a number of public and private organizations.

To further assist the Council and the Board in conducting their examination of this issue, both organizations attended a Patient Level Data Base Educational Symposium on May 20, 1991. Speakers at the Symposium provided a broad spectrum of experience and knowledge regarding other states' experiences in establishing patient level data bases. Again, the benefits, as well as the potential pitfalls, were discussed at length.

Staff supporting the Council and the Board also conducted phone surveys and literature searches regarding other states' patient level data bases. The phone surveys were intended to gather information related to costs including start-up budgets for patient level data bases, annual agency budgets, annual patient level data base budgets, estimated cost per patient records, and how many records are processed on a yearly basis. Literature searches were intended to gather information regarding the pros and cons of the various types of data systems available.

On June 5, 1991, the Task Force on Essential Data for Health Systems Evaluation reported to the Board regarding its work since 1990 on the issue of health data collection. After hearing the Task Force presentation, the Board adopted a number of recommendations, including the establishment of a patient level data base that would become part of the Virginia comprehensive health data system. (See Appendix 6 for an Executive Summary of the Task Force recommendations adopted by the Board on June 5, 1991)

On June 25, 1991, the Council adopted a recommendation supporting the establishment of a patient level data base in Virginia. The Council's recommendation also suggested that there be adequate input of relevant parties; that there be advance planning to ensure funding to both establish and operate such a system; that there be advance consideration of which data elements would be provided; and that confidentiality be adequately provided for. (See Appendix 7, a copy of the Virginia Health Services Cost Review Council's Recommendation)

In conjunction with the study of a patient level data base, the Council and the Board were required to prepare and submit an application for funding to The Robert Wood Johnson Foundation's new grant program entitled "Information for State Health Policy". The intent of this program is to help states strengthen their health statistics systems to support state policy making and to aid in program development and management.

Pursuant to guidelines issued by the foundation, Governor Wilder appointed the Office of Secretary of Health and Human Resources to be the lead agency for the grant application. In addition, a project staff was selected to develop and implement the work plan for this project.

In the Commonwealth's application, Secretary Cullum made note of the aforementioned report of the Task Force in Essential Health Data which had found a lack of uniformity of data elements, an absence of data sharing and integration, and the variety of methods of data collection by agencies in the public sector. To aid in preparing the Commonwealth's application, Secretary Cullum also conducted his own survey of twenty agencies, institutions and organizations to determine the content, scope, design and uses of existing health data collection systems in Virginia. While confirming, in many respects, the findings of the Task Force on Essential Health Data, the Secretary's survey identified a number of factors which could be considered in a more optimistic context than the Task Force's findings. Specifically, two of the most promising characteristics of the existing data collection efforts were the widespread use of unique identifiers and the automation of most of the existing data. Unique identifiers could serve as a key for matching and integrating data from several sources and tracking individuals across service systems.

The Foundation's guidelines also required that an Inter-Agency Working Group be established to administer the project. Virginia's Working Group is composed of a Steering Committee, a Technical Advisory Committee, and an Executive Committee of the Commonwealth Center for Health Policy. See Appendix 8 which describes the public and private groups constituting each of the three committees and the planned functions for each.

The proposed eight-member Interagency Steering Committee will be the primary advisory and decision-making body for the project. Critical functions of that Committee will be to establish a minimum data set for integrated health statistical data and to approve the design of a health statistics information system. Membership includes those state agencies and institutions with the most extensive responsibility for collecting and disseminating health-related data and, as an ex-officio member, a key legislative staff person will represent the interests of the Virginia General Assembly's Commission on Health Care for All Virginians. The Technical Advisory Committee, comprised of senior data processing staff from public and private agencies and organizations, will develop and test data integration strategies. Once the most feasible health statistics information system is designed, the Technical Advisory Committee will confirm and coordinate the provision of data from their respective organizations. The third advisory group, the Executive Committee of the Commonwealth Center for Health Policy Studies, would develop organizational plans for a Center for Health Policy Studies which would serve as a resource to explore policy issues with methodological rigor.

Given the strong support for the establishment of a patient level data base, but equally concerned with the complexity of the issues involved in doing so, Secretary Cullum has indicated his desire for the project team and the committees described above to begin their work in the fall of 1991.

C. A SUMMARY OF CONCERNS FROM VIRGINIA ORGANIZATIONS

Reliable patient level data can be collected, analyzed, and published provided there is effective leadership, a well-defined public purpose, perceived equity, and competent analyses. Many cautionary notes and reservations were expressed that should be considered in the design and review of any proposed system. These concerns can be summarized as follows:

Clarity of Purpose

The motivation for creating a patient level data base must be understood by all participants in the data collection effort. Respondents urged that specific health policy issues be addressed and analyzed to determine the data requirements for problem resolution. The Commonwealth was cautioned against becoming "data rich" but "information poor".

Comprehensiveness

Some organizations advocated the formation of a patient level data base that addressed the total health delivery system.

Other respondents cautioned against a comprehensive data system due to implementation problems. These organizations advocated sequential development, e.g. hospital data, then ambulatory and long term care data, and so forth.

These concerns highlighted another aspect of comprehensiveness often alluded to by respondents. On the one hand, some providers argued that data gathering will be invalid, inadequate or incomplete if not provided by all persons or entities rendering the same services. Others maintained that, depending on the question, statistical sampling techniques may be more cost-effective for both the providers of the data and the users.

Sources of Data

Any holder of information, and therefore a potential bearer of costs, tended to view the collection of data as logically falling to someone else. Providers responded that insurers and third party administrators most reasonably should produce claims forms information. Insurers responded that the collection of billing information should be left to providers in order to assure comprehensiveness, completeness and accuracy.

Other parties engaged in both the delivery and financing of health care, such as Kaiser Permanente, have significant concerns about data collection from individual physicians. They believed that such an effort would be costly without producing a corresponding return on the investment.

Data Collection Formats

Respondents recommended the abstraction of patient level data elements from claims forms or other standardized administrative forms. The UB-82 and UHDDS were both recommended for possible collection.

Compliance

Some organizations responded that participation by all health providers should be mandatory. Others, rather than mandating participation, preferred to obtain data on a voluntary basis or through a sampling process. Similarly, some respondents advocated systems that required the collection of relatively few data elements while others advocated the collection of a large number of data elements. These are not necessarily mutually exclusive preferences. All respondents agreed that collected data must relate to specific policy issues.

Unique Patient Identifier

A unique patient identifier that could potentially tie various patient data bases together without compromising confidentiality was cited as critical to many data users. All respondents agreed that the state must ensure patient confidentiality through rules, regulations and procedures. Most respondents did not recommend a particular type of unique patient identification number, although some did recommend the use of a social security number.

Cost/Effectiveness

Some organizations agreed that the public need for data appears to outweigh the costs. Consistent with this view, several organizations suggested that financial incentives be created to help lessen the provider's administrative costs associated with data collection. The use of claims forms or other administrative records was also suggested as a means to lessen administrative costs. It must be noted that while the use of the UB-82 or UHDDS forms can potentially lessen the reporting burden, the costs of data processing can vary dramatically. This is particularly true if risk adjustment systems are utilized.

Confidentiality/Proprietary Concerns

Confidentiality and proprietary concerns can be viewed on three levels: individual confidentiality, provider confidentiality, and payer confidentiality.

All respondents emphasized the importance of protecting the confidentiality of individual patients. Strict coding and access guidelines must be in place prior to system start-up.

Respondents varied in positions regarding provider and payer confidentiality. Decisions to collect and disseminate provider and payer information must be based upon the policy considerations of the Commonwealth.

It should be noted that the National Institute of Standards and Technology (NIST) has developed, and now maintains, a set of Federal Information Processing Standards (FIPS) to address the needs of data confidentiality. These standards and related guidelines are available for consideration by everyone who processes patient care data.

Quality/Misuse of Data

Inherent in any data system is the potential for misinterpretation and oversimplification. Some respondents felt that the release of provider or organization specific information was counterproductive. These respondents preferred the dissemination of aggregate information about practice patterns or average charges. At the very least, they felt, a public information campaign should be provided prior to system implementation.

Others felt that access to patient level data should be closely monitored and data requests screened. It is feared that data could be potentially used by payers to screen out high risk or high cost subscribers.

Administration

The administration of a health data system will require long-term commitment, funding, and sensitivity to a potentially broad spectrum of users with potentially conflicting interests. Respondents suggested that the state consider the following issues:

*The need to focus on all or some providers of care rather than only on the inpatient or other related setting.

*Whether claims forms data or provider/employer/state data have greater potential for comprehensiveness in determining the actual use of health services and the resources expended at a disease specific level.
*Should any one entity other than the state appropriately design the system?
*Who would have sufficient resources and needs to develop and run the system?

Validity

Respondents agreed that collected data must be perceived as accurate and reliable by all participants in the health delivery system. Respondents urged that the following be considered:

*The validity of the data after the observation, recording, and/or review process. For example, the greater amount of data recorded, reviewed, requested and/or entered, the greater potential for random errors in data transmission.
*The validity of the description of a relationship between two or more variables within a model. Does the development of rules defining relationships in a risk adjustment/quality assessment model produce a system which is a powerful explanatory tool for understanding the care process and clinical decision making?
*The validity of the predictive value of a model provided with a given set of data. Can the model achieve predictive value for its users? Are the data and rules for using it necessary and sufficient to produce a reasonable level of explanation of how a process generates outcomes. Does future performance after review correlate closely with the model's predicted performance?

Leadership in Development

Many respondents stated that data base development aimed at controlling costs and enhancing quality is believed to be desirable. They also felt that data requested and manner of collection should follow that of other states as much as possible. Other respondents stated that, while comparability with other states' information is important, a flexible data system would have the capacity to serve various policy concerns in the Commonwealth as they develop and evolve.

Payment for the System

If a state agency is charged by statute with the development of a patient level data base, general funds will be needed. Some respondents also suggested alternative financing as follows:

*Development of a structured user fee system;
*Provisions for provider data submission costs to be folded into private, state, and federal reimbursement methodologies.

VI. CONCLUSION AND RECOMMENDATION

Health care providers, third party payers, public payers (i.e. Medicare, Medicaid), employers, state and federal policy makers, health planners, researchers, and the general public all agree that there is a need to constrain rising health costs. At the same time these groups know there is a need to maintain the quality of health care, to ensure access for needed services, and to meet future service needs.

In recognizing this need, the Council and the Board were asked to study all aspects of the possible establishment of a patient level data base in Virginia. In surveying those organizations, groups and agencies, both public and private, who would be involved either in providing information to such a system or utilizing the results of such a system, or both, there appeared to be a consensus that the collection of data should generally meet the following needs: assure providers and consumers that health care resources are used in a most effective manner with optimum health outcomes; provide information on practice patterns to health care providers; and assist purchasers in making decisions concerning their health care. Most of those who commented expressed widespread support for the establishment of a patient level data base, but were mindful of the numerous issues and complexities involved in establishing such a system.

In order to deal with these issues, Governor Wilder appointed the Office of the Secretary of Health and Human Resources to act as the lead agency in Virginia in its effort to attain funding from The Robert Wood Johnson Foundation's "State Health Policy Program". Howard M. Cullum, Secretary of Health and Human Resources, in turn, submitted an application for funding from The Robert Wood Johnson Foundation for funding so that Virginia can strengthen its health statistics system to help assess its health policy, program development and management information needs; establish plans and set priorities for meeting those needs; and to improve its health statistics infrastructure.

The application submitted by Secretary Cullum contained a structured approach in which representatives of the major health data collecting organizations, both public and private, will agree on a minimum data set and design an information model and health statistics information system. A project team would assist in fulfilling those functions.

Although Virginia was not successful in obtaining the grant, Secretary Cullum has indicated his desire that the planning structure and process contained in The Robert Wood Johnson grant application should be implemented in the fall of 1991.

To further assist the committee structure as established in The Robert Wood Johnson Foundation's grant application, the resources of both the Council and the Board should be utilized. This would be consistent with the statutory provision which requires the Council to establish a uniform system of financial reporting; to undertake financial analysis and studies relating to health care institutions; and to publish and disseminate information relating to health care institutions' costs and charges. It would also comply with the statutory mandate that the Board promote the development and maintenance of a coordinated and integrated health planning system on the state and local levels and that it make recommendations to the Secretary of Health and Human Resources, the Governor and the General Assembly concerning statewide data collection systems.

It is therefore recommended that the Commission on Health Care for All Virginians indicate its support for the establishment of a patient level data base. It is further recommended that the Commission require the Secretary of Health and Human Resources to utilize the committee and planning structure established in The Robert Wood Johnson Foundation's grant application, with input from the Council and the Board, to develop a detailed, systematic plan for establishing a patient level data base in Virginia. The Secretary should be requested to report to the Commission by October 15, 1992 including any legislative proposals needed to establish a patient level data base in Virginia.

APPENDIX 1

SENATE JOINT RESOLUTION NO. 178

Requesting the Virginia Health Services Cost Review Council with the Virginia Health Planning Board to study possible establishment of a patient level data base.

Agreed to by the Senate, February 4, 1991
Agreed to by the House of Delegates, February 15, 1991

WHEREAS, the most recent analysis by the Health Care Financing Administration of the United States Department of Health and Human Services indicated that spending for health amounted to 11.1 percent of the Gross National Product in 1988, more than twice that of 1960; that hospital expenditures increased 9.3 percent from 1987 through 1988; and that spending for physician services increased 13.1 percent during that same period; and

WHEREAS, health care expenditures have continued to grow at an increasing rate so that they comprised 11.6 percent of the Gross National Product in 1989 and estimates indicate that this figure will climb to 15 percent by the year 2000; and

WHEREAS, one economic forecast estimates that, absent fundamental change, overall health care spending by the year 2000 will be six and one-half times higher than it was in 1980; and

WHEREAS, the same economic estimate projects that employers and employees will have to absorb a 529 percent increase from 1980 to 2000 for employer-based health coverage; and

WHEREAS, health care providers, health care users, third party payers, employers, the general public, and state and federal officials agree there is a need to contain these rising health care costs while simultaneously improving the quality of health care and expanding access to necessary care; and

WHEREAS, all states, including the Commonwealth, have undertaken many initiatives to deal with these critical issues; and

WHEREAS, thirty-five states, including the Commonwealth, have created health data organizations to collect and disseminate information regarding health care costs; and

WHEREAS, thirty-two states have established statewide patient level data bases to assist in the review and comparison of costs, utilization, quality, and effectiveness of health services; and

WHEREAS, the objective of a patient level data base is to improve the quality of care by providing payers and consumers, including employers and governments with information needed to make intelligent buying decisions; evaluate medical technologies and services; and establish guidelines to improve treatment and limit unnecessary procedures; and

WHEREAS, many health care providers already utilize data from patient level data bases to review internal operations, pinpoint inefficiencies, and plan future services; and other providers would benefit from such information in the future; and

WHEREAS, information from a patient level data base would provide information regarding access to care issues and provide for effective planning for future needs; and

WHEREAS, the Virginia Health Services Cost Review Council is the state-level health data organization created by legislation to collect and disseminate information concerning health care costs; and

WHEREAS, the Robert Wood Johnson Foundation has recently announced a new grant program for states to encourage the development of comprehensive health data collection at the state level; and

WHEREAS, the Virginia Health Planning Board has the statutory responsibility to supervise the development of a health data system in order to provide necessary information to support health policy recommendations; now, therefore, be it

RESOLVED by the Senate, the House of Delegates concurring, That the Virginia Health Services Cost Review Council, in cooperation with the Virginia Health Planning Board, be requested to study all aspects of the possible establishment of a patient level data base in the Commonwealth, including its potential use by providers, payers, employers, state and local governments, and the general public; the need for and efficacy of establishing state agency oversight to ensure the delivery of cost-effective health care services; and to prepare a grant application for the Robert Wood Johnson Foundation on this issue.

All agencies of the Commonwealth shall provide assistance in the study as requested by the Virginia Health Services Cost Review Council.

The Council shall report its findings and recommendations to the Commission on Health Care for All Virginians by October 15, 1991, and to the Governor and 1992 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

APPENDIX 2

RISK ADJUSTMENT SYSTEMS

There are eight major proprietary computerized systems available that study the relationships between care and cost and/or outcome and employ statistical models for risk adjustment and severity rating. These systems vary in the scope of data required, when the data is collected, and in their approach to modeling the disease process, defining its severity, and predicting either the cost, mortality, or other outcomes associated with a given mix of interventions. Two broad categories of systems exist: those that employ discharge data obtained from billing forms and those that require collection of additional clinical data from medical records. The choice of any one system presupposes the choice to accept both the strengths and limitations of the model and the scope and cost of data collection it requires. A general overview of these systems is provided highlighting some of the system differences.

MedisGroups - MediQual Systems, Inc.

MedisGroups is an automated system intended to assess admission severity of illness and to support hospital quality assurance efforts. Key clinical findings and patient information located in the patient record are analyzed using proprietary algorithms. Nine reports may be produced highlighting DRGs, patient profiles, admission appropriateness, effectiveness of treatment, clinical case summaries, appropriateness of procedures, blood and transfusion monitoring, and occurrences subject to quality or risk management review. MQ Pinpoint is a new cost and quality screening system using UB-82 data to create Illness Outcome Groups based on outcome rates for DRGs. Hospital level aggregation makes comparisons with other facilities possible.

Disease Staging - SysteMetrics, Inc.

Disease Staging is an automated system intended to assess admission severity of illness and to support hospital quality assurance efforts. Clinical and patient information is analyzed using concepts of stage progression in illness and poor clinical prognosis to define an ordinal overall illness score for each patient. A patient level severity measure, the Q-Scale, assigns an overall severity scale to each patient expressed as a percentage above or below a norm group's average of 100. The Q-scale score can be used to predict resource levels (costs) required to treat this patient. SysteMetrics is also attempting to develop a mortality prediction system using UB-82 claims data. These systems can employ UB-82 data or abstracts of data from the patient medical record; the degree of "accuracy" and speed of severity assessment depends on the precision and amount of data provided through these means.

APACHE - APACHE Medical Systems

APACHE II is a risk prediction model primarily for use with patients in Intensive Care Units. Patient data is collected after admission and within an ICU for 24 hours and is employed to predict the probability of survival. It can be employed to compare expected with actual mortality, and to track inappropriate use of ICU services by low risk patients. Version IIB attempts a hospital wide application employing a modified Medicare Mortality Predictor System (MMPS) but only for patients 65 years and older. This system requires only the patient age, a chronic health status indicator, and twelve physiological measures recorded in the ICU.

Refined DRGs (RDRGs) - Public Domain

Refined DRGs is an automated system intended to assess admission severity of illness and to predict the costs of care, not for assessment of outcomes or quality assurance. Primary/secondary diagnoses are analyzed using the architecture of DRGs to produce approximately 1100 RDRGs that reflect the severity of illness to predict costs for each patient illness score for each patient. This system can employ UB-82 data and is essentially only a classification system. Support products are available from various vendors.

Computerized Severity Index - Health Systems International

The Computerized Severity Index creates an assessment of the severity of patients with specific diagnoses employing specific clinical criteria organized into approximately 500 disease or multiple disease sets based on ICD-9-CM coding. Each diagnosis for each patient is weighted employing a computer algorithm to produce a single overall severity rating.

The Acuity Index Method (AIM) - IAMETER

AIM is an automated system intended to assess admission severity of illness and to support hospital quality assurance efforts. Patient DRG information is analyzed, subcategorized and assigned severity levels utilizing UHDDS or UB-82 claims data. Statistical norms are derived for hospital comparison not only of patients within each DRG and AIM severity level but against charges, utilization, and mortality statistics.

PRAGmatic System - Corporate Cost Management, Inc.

The PRAGmatic System is an automated system intended to assess admission severity of illness and to support studies of the cost-effectiveness of hospital treatment efforts. Patient UB-82 data is analyzed and risk levels are assigned. Homogeneous risk groups are aggregated based on ICD-9-CM diagnosis codes, the age of the patients, and procedures performed. Statistical models of adverse outcomes for these risk levels are compared against hospital experience in utilization, mortality, infections, and other complications.

Risk-Adjusted Mortality Norms - CPHA

Risk-Adjusted Mortality Norms is basically a set of reference statistics based on the CPHA data base focusing on the risk-adjustment of mortality and readmissions. The system is based on ICD-9-CM codes, age, and the presence/absence of co-morbidities and complications.

APPENDIX 3

DATA ELEMENTS FOR STATES

	AZ	CA	CO	CT	DE	FL	IA	IL	IN	MA	MD	ME	NC
Attending Physician ID	x		x	x	x			x	x		x		x
Other Physician(s) ID			x	x	x			x		x		x	x
Blue Cross/Blue Shield Provider #													
Medicaid Provider #	x										x	x	x
Transfer in Code (Hospital ID)			x					x	x				
Source of Admission	x	x				x		x		x	x		x
Patient Address (Zip Code)	x	x	x	x	x	x	x	x	x	x	x	x	x
Patient Birthdate	x	x	x	x	x	x	x	x	x	x	x	x	x
Patient Control #		x		x		x		x		x		x	
Patient Marital Status					x						x		x
Patient Sex	x	x	x	x	x	x	x	x	x	x	x	x	x
Medical Record	x			x	x					x			
Patient Race		x		x	x				x	x	x	x	
Patient County			x		x			x	x		x		
Patient's Age			x										
Birthweight				x				x			x		
Patient is 100+ Year of Age			x							x			
Employer Name													
Employment Info. Data													

DATA ELEMENTS FOR STATES (con't)

	ND	NH	NJ	NM	NV	NY	OH	OR	PA	RI	SC	TN	TX
Attending Physician ID		x	x	x	x				x	x	x	x	
Other Physician(s) ID		x	x	x	x				x		x	x	
Blue Cross/Blue Shield Provider #				x									
Medicaid Provider #		x		x									x
Transfer in Code (Hospital ID)				x	x					x	x	x	
Source of Admission			x	x	x		x		x	x	x		
Patient Address (Zip Code)	x	x	x		x	x	x	x	x	x	x	x	x
Patient Birthdate	x	x	x	x	x	x	x	x	x	x	x	x	x
Patient Control #			x	x		x			x			x	x
Patient Marital Status			x				x						x
Patient Sex	x	x	x	x	x	x	x	x	x	x	x	x	x
Medical Record			x	x		x				x	x		
Patient Race		x	x			x			x	x	x		
Patient County	x	x	x			x		x			x		
Patient's Age				x	x		x	x					x
Birthweight					x	x							
Patient is 100+ Year of Age													
Employer Name				x					x				
Employment Info. Data				x					x				

DATA ELEMENTS FOR STATES (con't)

	UT	VT	WA	WI	WY	WV							
Attending Physician ID	x	x	x	x	x	x							
Other Physician(s) ID	x	x	x	x	x	x							
Blue Cross/Blue Shield Provider #					x								
Medicaid Provider #			x		x								
Transfer in Code (Hospital ID)	x			x									
Source of Admission	x	x	x	x									
Patient Address (Zip Code)	x	x	x	x		x							
Patient Birthdate	x	x	x	x		x							
Patient Control #	x		x	x									
Patient Marital Status	x												
Patient Sex	x	x	x	x	x	x							
Medical Record	x		x	x									
Patient Race	x			x	x								
Patient County		x				x							
Patient's Age		x			x								
Birthweight													
Patient is 100+ Year of Age				x									
Employer Name	x												
Employment Info. Data	x												

DATA ELEMENTS FOR STATES

	AZ	CA	CO	CT	DE	FL	IA	IL	IN	MA	MD	ME	NC
Employer Location													
Employment Status Code													
Claim Certificate, SS# Health Ins. Claim ID#		x			x								x
Payer ID (Primary)	x		x	x	x	x	x			x		x	x
Admission Date	x	x	x	x	x	x	x	x		x		x	x
Discharge Date	x	x	x	x	x	x	x				x		
Length of Stay	x		x	x	x			x					
Type of Admission		x	x							x			x
Principal Dx Code	x	x	x	x	x	x	x	x	x	x	x	x	x
Other Dx Codes	x	x	x	x	x	x	x	x	x	x	x	x	x
Principal Procedure Code	x	x	x	x	x	x	x	x	x	x	x	x	x
Other Procedure Codes	x	x	x	x	x	x	x	x	x	x	x	x	x
Patient Status						x		x		x		x	
Type of Bill					x		x						x
Units of Service				x	x					x			
Revenue Code				x	x					x			x
DRG	x	x	x	x			x	x					
MDC								x					
Co-Ins. Amount				x									

DATA ELEMENTS FOR STATES (con't)

	ND	NH	NJ	NM	NV	NY	OH	OR	PA	RI	SC	TN	TX
Employer Location				x									
Employment Status Code				x					x				
Claim Certificate, SS# Health Ins. Claim ID#									x			x	
Payer ID (Primary)	x	x	x		x			x	x				x
Admission Date	x		x	x				x	x	x	x	x	x
Discharge Date			x			x		x	x	x	x	x	x
Length of Stay			x	x				x	x	x	x	x	x
Type of Admission	x	x	x	x	x	x					x		
Principal Dx Code	x	x	x	x	x	x	x	x	x	x	x	x	x
Other Dx Codes	x	x	x	x	x	x	x	x	x	x	x	x	x
Principal Procedure Code	x	x	x	x	x		x	x	x	x	x	x	x
Other Procedure Codes	x	x	x	x	x		x	x	x	x	x	x	x
Patient Status		x		x		x	x						
Type of Bill	x		x	x		x			x			x	
Units of Service			x	x		x			x				
Revenue Code			x	x		x			x			x	
DRG		x		x	x			x	x	x			x
MDC													
Co-Ins. Amount				x					x				

DATA ELEMENTS FOR STATES (con't)

	UT	VT	WA	WI	WY	WV							
Employer Location	x												
Employment Status Code	x												
Claim Certificate, SS# Health Ins. Claim ID#	x			x									
Payer ID (Primary)	x	x	x	x	x	x							
Admission Date	x	x	x	x		x							
Discharge Date			x	x		x							
Length of Stay		x	x	x		x							
Type of Admission	x	x		x		x							
Principal Dx Code	x	x	x	x		x							
Other Dx Codes	x	x	x	x		x							
Principal Procedure Code	x	x	x	x		x							
Other Procedure Codes	x	x	x	x		x							
Patient Status													
Type of Bill	x			x									
Units of Service	x												
Revenue Code	x		x										
DRG		x	x	x		x							
MDC		x		x		x							
Co-Ins. Amount													

DATA ELEMENTS FOR STATES

	AZ	CA	CO	CT	DE	FL	IA	IL	IN	MA	MD	ME	NC
Deductible				x									
Estimated Amount Due													
Estimated Responsibility				x							x		
Prior Payments													
Total Charges (Revenue Code Category)	x	x	x	x	x	x	x		x				x
Patient Died w/i 30 Days of Admission													
Multistage Treatment											x		
Nature of Surgery											x		
Operating Doctor											x		
Previous Admission				x									
E Code		x											
Accident Hour													

DATA ELEMENTS FOR STATES (con't)

	ND	NH	NJ	NM	NV	NY	OH	OR	PA	RI	SC	TN	TX
Deductible				x									
Estimated Amount Due									x				
Estimated Responsibility									x				
Prior Payments									x				
Total Charges (Revenue Code Category)	x	x	x	x	x	x	x	x					x
Patient Died w/i 30 Days of Admission							x						
Multistage Treatment													
Nature of Surgery													
Operating Doctor													
Previous Admission													
E Code													
Accident Hour		x	x										

DATA ELEMENTS FOR STATES (con't)

	UT	VT	WA	WI	WY	WV							
Deductible													
Estimated Amount Due													
Estimated Responsibility													
Prior Payments													
Total Charges (Revenue Code Category)	x	x	x	x	x	x							
Patient Died w/i 30 Days of Admission													
Multistage Treatment													
Nature of Surgery													
Operating Doctor													
Previous Admission													
E Code													
Accident Hour													

RECOMMENDATIONS

FROM NEW HAMPSHIRE: Source of referral coming into hospital administrative days waiting

FROM ARIZONA: Add V-codes and E-codes

APPENDIX 4

Arizona: Joe Brennan

Tele #: 602-255-1140
FAX #: 602-255-1135

FY 90 Agency Budget: N/A

FY 90 Patient Level Data Base Budget: $ 80,000

FY 90 Estimated Cost Per Patient Record: $ .184

FY 90 Estimated Number of Inpatient Records: 430,000

Start-up Budget Patient Level Data Base: FY1982

Year 1 $ 70,000 Year 2 $ 70,000

Data Collected: UB-82

Data Collected From: Providers - Hospitals and State Hospitals

Data Input: None

Data Storage: Arizona Department of Health

Data Analyses: State agency FTEs 1

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1984

Pending Legislation: Requiring facilities with less than 50 beds to report.

Providers Reimbursed: No

California: Ele Meux

Tele #: 916-324-2712
FAX #: 916-323-767

FY 90 Agency Budget: Approx. $30 million

FY 90 Patient Level Data Base Budget: Total program budget $1.6 million

FY 90 Estimated Cost Per Patient Record: $ .45

FY 90 Estimated Number of Inpatient Records: 3.6 million

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UHDDS

Data Collected From: Providers - Hospitals

Data Input: State agency FTEs 14.5 $ 23,000 - $ 52,000

Data Storage: Agency hardware initial expense unknown

Data Analyses: State agency (produce standard publications, but no "analyses")

Outcome Data: No

Severity system:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: Provider assessment What rate: 0.0312%

Date of Enabling Legislation: 1980

Pending Legislation: Data collection from ambulatory surgery hospitals.

Providers Reimbursed: No

Colorado: Paul Able

Tele #: 303-866-4980
FAX #: 303-866-2251

FY 90 Agency Budget: $ 201,000

FY 90 Patient Level Data Base Budget: $ 50,000

FY 90 Estimated Cost Per Patient Record: $ 0.05

FY 90 Estimated Number of Inpatient Records: 400,000

Start-up Budget Patient Level Data Base: FY1986

Year 1 $ 196,000	Year 2 $ 200,000

Data Collected: UB-82

Data Collected From: Providers - Hospitals and Ambulatory Surgical Centers

Data Input: Data submitted on tape

Data Storage: Agency hardware initial expense $130,000

Data Analyses: State agency FTEs 1 $ 50,000 - $ 60,000

Outcome Data: Yes, Medisgroups

Clinical Info: Patient history

Severity System:

Start-up: FY1991 $ 70,000	Start-up Cost to Providers: FY1991 1 million
Total Year 1 Budget: $ 80,000	Estimated Leasing Fees: $300,000
Total Year 2 Budge: $100,000	Estimated Training Fees: $270,000
	Estimated Cost Per Record: $ 10.00

Agency Financed Through: State general fund

Date of Enabling Legislation: 1985

Providers Reimbursed: No

Connecticut: Marcia Schonberger

Tele #: 203-556-3880
FAX #: 203-566-7793

FY 90 Agency Budget: Approx. $3.5 million

FY 90 Patient Level Data Base Budget: Approx. $200,000

FY 90 Estimated Cost Per Patient Record: $ .50

FY 90 Estimated Number of Inpatient Records: 390,000

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UB-82

Data Collected From: Providers - Hospitals

Data Input: Contract cost per record $ 0.25

Data Storage: Agency hardware Initial expense $30,000
Contract organization $ .49 per megabyte per day

Data Analysis: State agency FTEs 3 $ 40,000

Outcome Data: No - Refined DRGs (in development)

Severity System:

Start-up: FY1990 Approx. $ 50,000

Total Year 1 Budget: N/A

Estimated Cost Per Record: $ .01

Agency Financed Through: State general fund

Date of Enabling Legislation: 1984

Providers Reimbursed: No

Delaware: Don Berry

Tele #: 302-739-4776
FAX #: 302-739-3008

FY 90 Agency Budget: Unknown

FY 90 Patient Level Data Base Budget: $130,000

FY 90 Estimated Cost Per Patient Record: N/A

FY 90 Estimated Number of Inpatient Records: 70,000 - 80,000

Start-up Budget Patient Level Data Base:

Year 1 $120,000 Year 2 $130,000

Data Collected: UB-82

Data Collected From: Providers - Hospitals and Nursing Homes

Data Input: Receive all data electronically

Data Storage: Contract for now on the University of Delaware's mainframe

Data Analyses: State agency FTEs 2 $ 25,000 - $ 35,000

Data Outcome: No

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1989

Providers Reimbursed: No

Iowa: Jeff Petrie

Tele #: 515-244-1211
FAX #: 515-288-9143

FY 90 Agency Budget: $296,000

FY 90 Patient Level Data Base Budget: N/A

FY 90 Estimated Cost Per Patient Record: N/A

FY 90 Estimated Number of Inpatient Records: N/A

Start-up Budget Patient Level Data Base: FY1985

Year 1 $100,000 Year 2 $250,000

Data Collected: UB-82

Data Collected From: Payers - all insurance companies, Medicare and Medicaid

Data Input: Contract

Data Storage: Agency hardware
State information system
Contract organization

Data Analyses: State agency
Contract organization
University

Outcome Data: Yes - Medisgroups

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1985

Providers Reimbursed: No

Illinois: Mehdi Nassirpour

Tele #: 217-785-8477
FAX #: 217-785-8461

FY 90 Agency Budget: $ 2.4 million

FY 90 Patient Level Data Base Budget: $ 1 million

FY 90 Estimated Cost Per Patient Record: $ 1.58

FY 90 Estimated Number of Inpatient Records: 1 million

Start-up Budget Patient Level Data Base: FY1986

Year 1 $ 1.5 million Year 2 $ 1.7 million

Data Collected: UB-82

Data Collected From: Providers - Hospitals

Data Input: State agency FTEs 23 $ 20,000 - $ 65,000

Data Storage: Agency hardware

Data Analyses: State agency FTEs 5 $ 25,000 - $ 45,000

Outcome Data: Refunded DRGs

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1984

Providers Reimbursed: N/A

Indiana: Tom Reed

Tele #: 317-633-8541
FAX #: 317-633-0776

FY 90 Agency Budget: N/A

FY 90 Patient Level Data Base Budget: None

FY 90 Estimated Cost Per Patient Record: N/A

FY 90 Estimated Number of Inpatient Records: N/A

Start-up Budget Patient Level Data Base: N/A

Year 1 Year 2

Data Collected: Hospital (annual report from individual hospitals)

Data Collected From: Providers: Hospitals

Data Input: State agency FTEs 1 $ 15,000

Data Storage: Agency hardware; state information system

Data Analyses: State agency FTEs 2 $ 20,000

Outcome Data: No

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1988

Providers Reimbursed: No

Maryland: Lynn Garrison

Tele #: 301-776-5901
FAX #: 301-764-5987

FY 90 Agency Budget: $1,874,420

FY 90 Patient Level Data Base Budget: $364,579

FY 90 Estimated Cost Per Patient Record: $ .3645/record

FY 90 Estimated Number of Inpatient Records: 600,000 inpatient records;
400,000 ambulatory surgery records

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UB-82

Data Collected From: Providers - Hospitals

Data Input: State agency FTEs 28; Salary expense for data entry $ 19,175 per FTE

Data Storage: Contract organization

Data Analyses: State agency FTEs 3 $ 34,000

Severity system: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: Provider assessment rate 100%

Date of Enabling Legislation: 1976

Providers Reimbursed: Yes

<u>North Carolina</u>: Janis Curtis

Tele #: 919-733-7141
FAX #: 919-851-8888

FY 90 <u>Agency Budget</u>: Approx. $865,079 without salaries

FY 90 <u>Patient Level Data Base Budget</u>: $865,079

FY 90 <u>Estimated Cost Per Patient Record</u>: $ .77

FY 90 <u>Estimated Number of Inpatient Records</u>: 1.25 million (records)
850,000 annual discharges

<u>Start-up Budget Patient Level Data Base</u>: FY1986

Year 1 $ 75,000 Year 2 $135,000

<u>Data Collected</u>: UB-82

<u>Data Collected From</u>: Providers - Hospitals (acute care, rehab and psychiatric) and state facilities

<u>Data Input</u>: (Data entry and processing) Contract cost per patient record: $ .49

<u>Data Storage</u>: Agency hardware initial expense: $40,000

<u>Data Analyses</u>: State agency FTEs 2 $ 30,489 - $ 47,249

<u>Outcome Data</u>: No

<u>Severity system</u>:

<u>Start-up</u>: Approx. $ 30 million

<u>Total Year 1 Budget</u>: Total program budget $1.6 million

<u>Estimated Cost Per Record</u>: N/A

<u>Agency Financed Through</u>: State general fund

<u>Date of Enabling Legislation</u>: 1985

<u>Providers Reimbursed for Data</u>: Yes, self pay/indigent/charity patients; $ .40 per discharge

North Dakota: Dennis Klipfel

Tele #: 701-224-2894
FAX #: 701-224-3000

FY 90 Agency Budget: $ 8,000 - $ 10,000

FY 90 Patient Level Data Base Budget: $ 8,000 - $ 10,000

FY 90 Estimated Cost Per Patient Record: N/A

FY 90 Estimated Number of Inpatient Records: 75,000

Start-up Budget Patient Level Data Base: FY1989

Year 1 $ 10,000 Year 2 $ 8,000

Data Collected: UB-82

Data Collected From: Payers - Hospitals, Medicare and Medicaid

Data Input: None

Data Storage: Agency hardware: 1 personal computer $ 7,500

Data Analyses: N/A

Outcome Data: No

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1987

Pending Legislation: July 1991 physician fees

Providers Reimbursed: No

New Hampshire: Frank Novack

Tele #: 603-271-4606
FAX #: 603-271-3745

FY 90 Agency Budget: $400,000 (combined)

FY 90 Patient Level Data Base Budget: $145,000 ($ 90,000 Hosp.; $ 20,000 NH; $ 35,0000 Personnel)

FY 90 Estimated Cost Per Patient Record: $ .81

FY 90 Estimated Number of Inpatient Records: 180,000

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UHDDS

Data Collected From: Providers - Hospitals and Nursing Homes

Data Input: Contract cost per record $0.61

Data Storage: State information system Expense FY90 est. $2,000 maintenance fee

Data Analyses: State agency FTE 1 $ 32,000 - $ 35,000

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: Provider assessment: hospitals - $81.73, nursing homes - $11.07, specialty hospitals (psychiatric, rehab, substance abuse) $41.6 per licensed bed.

Data of Enabling Legislation: Data collected from ambulatory surgical hospitals. Also additional trauma data requested.

Pending Legislation: Ambulatory, trauma etc.,

Providers Reimbursed: No (Hospital data cost split with hospital association 50/50)

Nevada: Mike Downey

Tele #: 702-687-4176
FAX #: 702-687-4733

FY 90 Agency Budget: $853,867

FY 90 Patient Level Data Base Budget: $166,150.00

FY 90 Estimated Cost Per Patient Record: $ 1.27

FY 90 Estimated Number of Inpatient Records: 130,000

Start-up Budget Patient Level Data Base: FY1988

Year 1 $110,000 Year 2 $125,000

Data Collected: UB-82

Data Collected From: Providers - Hospitals

Data Input: Contract cost per record $ .75

Data Storage: Contract organization

Data Analyses: State agency; University

Outcome Data Collected: No. Refund DRGs for state data

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: Provider assessment

Date of Enabling Legislation: 1985

Providers Reimbursed: No

Ohio: Lorin Ranbom

Tele #: 614-644-8507
FAX #: 614-644-1909

FY 90 Agency Budget: $1.4 million

FY 90 Patient Level Data Base Budget: $450,000 ($350,000 Hospital data base, $100,000 nursing homes)

FY 90 Estimated Cost Per Patient Record: $ .60

FY 90 Estimated Number of Inpatient Records: 750,000

Start-up Budget Patient Level Data Base: FY1989

Year 1 $104,000 Year 2 Unknown

Data Collected: UB-82

Data Collected From: Providers - hospitals and nursing homes
Payers - Medicare and Medicaid

Data Input: Inpatient level data delivered by HCFA and medicaid on tape.

Data Storage: State information system FY90: $ 25,000

Data Analyses: State agency FTEs 2 $ 35,000
Contract organization FY90: $ 60,000

Severity System:

Start-up: FY1988 $ 3,000

Total Year 1 Budget: $ 11,000

Estimated Cost Per Record: $ .015

Agency Financed Through: State general fund, receipts from data products

Date of Enabling Legislation: 1987

Providers Reimbursed: No

Oregon: Sandy Frack-Werby

Tele #: 503-378-4684
FAX #: 503-378-8467

FY 90 Agency Budget: $1.5 million

FY 90 Patient Level Data Base Budget: $ 35,000 ($ 18,000 - $ 10,000 Hosp, and $ 8,000 other; $ 16,800 salaries)

FY 90 Estimated Cost Per Patient Record: $ .02 (from the tape, this makes it inexpensive)

FY 90 Estimated Number of Inpatient Records: 360,000

Start-up Budget Patient Level Data Base: FY1985

Year 1 $ 27,500 Year 2 $ 27,500

Data Collected: UB-82

Data Collected From: Providers - hospitals, state hospitals, federal hospitals (hospitals bear the cost)

Data Input: State agency FTEs 5 $26,000
Contract cost per record $ .02

Data Storage: State information system FY90: $12,000

Data Analyses: State agency FTEs 1 $ 26,000

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1985

Providers Reimbursed: No

Pennsylvania: Ernest Sessa

Tele #: 717-232-6787
Fax: #: 717-232-3821

FY 90 Agency Budget: $3,310,245.00

FY 90 Patient Level Data Base Budget: $675,000

FY 90 Estimated Cost Per Patient Record: $ .27

FY 90 Estimated Number of Inpatient Records: 2,500,000

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UB-82

Data Collected From: Providers - Hospitals; Ambulatory Surgical Centers and State Hospitals
Payers - Top insurance companies, Medicare and Medicaid

Data Input: State agency FTEs 25 - $17,000 - $ 50,000; $30,000 mid-range

Data Storage: Agency hardware initial expense: $675,000
State information system FY90: $700,000

Data Analyses: State agency FTEs 3 $ 20,000 - $ 40,000 expense FY90: $ 75,000

Outcome Data: Yes - Medisgroups

Severity System:

Start-up: FY87

Total Year 1 Budget: $1 million

Estimated Cost Per Record: $ .50

to providers: $25 million

estimated leasing: $20 million

estimated training: $5 million

estimated cost per record: $10-$30 average per record for a hospital stay

Agency Financed Through:
State general fund

Date of Enabling Legislation: 1986

Providers Reimbursed: No

Rhode Island: Jay Buechner

Tele #: 401-277-2233
FAX #: 401-277-6548

FY 90 Agency Budget: $ 42,000,000 (Department of Health)

FY 90 Patient Level Data Base Budget: 0

FY 90 Estimated Cost Per Patient Record: Unknown

FY 90 Estimated Number of Inpatient Records: 140,000

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UHDDS

Data Collected From: Providers - Hospitals

Data Input: No additional staff funded

Data Storage: N/A

Data Analyses: N/A

Outcome Data: No

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1989

Providers Reimbursed: No

South Carolina: Beth Corley

Tele #: 803-734-3822
FAX #: 803-734-3619

FY 90 Agency Budget: Unknown

FY 90 Patient Level Data Base Budget: Unknown

FY 90 Estimated Cost Per Patient Record: Unknown

FY 90 Estimated Number of Inpatient Records: 500,000

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UB-82, UHDDS for federal facilities

Data Collected From: Providers - Hospitals, federal facilities (military/VA)

Data Input: State agency FTEs 2 $ 16,883 - $ 23,109

Data Storage: State information system

Data Analyses: State agency FTEs 2 $ 27,000 - $ 34,000

Outcome Data: Refined DRGs

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund receipts from data products

Date of Enabling Legislation: 1985

Pending Legislation: Recommendations from a Blue Ribbon Task Force to collect ambulatory surgery data and physician data.

Providers Reimbursed: No

Tennessee: Tom Spillman

Tele #: 615-741-1954
FAX #: 615-741-1429

FY 90 Agency Budget: $ 300,000

FY 90 Patient Level Data Base Budget: $300,000

FY 90 Estimated Cost Per Patient Record: $ .30

FY 90 Estimated Number of Inpatient Records: 1 million

Start-up Budget Patient Level Data Base: FY1990

Year 1 $ 500,000 Year 2 $ 100,000

Data Collected: UB-82

Data Collected From: Payers - all insurance companies

Data Input: State agency FTEs 5 $ 11,000 - $ 30,000

Data Storage: State information system FY90: $ 20,000

Data Analysis: State agency FTEs 5 $ 20,000 - $ 28,000

Outcome Data: No

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1986

Providers Reimbursed: No

Texas: Ann Henry

Tele #: 512-458-7261
FAX #: 512-458-7407

FY 90 Agency Budget: $275,000

FY 90 Patient Level Data Base Budget: $275,000

FY 90 Estimated Cost Per Patient Record: Unknown (Medicaid no cost, share info)

FY 90 Estimate How Many Inpatient Records: 750,000 (medicare and medicaid records)

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: AHA Survey Form

Data Collected From: Providers - Hospitals (facility, level data only),
Payers - Medicare

Data Input: State agency FTEs 3.5 - 4.0 $ 18,000 - $ 22,000 total salary expense $ 70,000 (also do screening and follow-up)

Data Storage: Agency hardware expense unknown

Data Analyses: State agency FTEs 1.5 $ 24,000 - $ 28,000

Outcome Data: No

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund

Date of Enabling Legislation: 1985 (statutes authorizes collection of (1) hospital financial, (2) utilization and, (3) patient discharge data. However, funding is limited and priority placed on areas 1 + 2.)

Providers Reimbursed: No

Utah: Leslie Goodloe

Tele #: 801-538-7048
FAX #: 801-538-6694

FY 90 Agency Budget: $200,000

FY 90 Patient Level Data Base Budget: $200,000

FY 90 Estimated Cost Per Patient Record: $1.11

FY 90 Estimate Number of Inpatient Records: 180,000 (collection begins in 1992)

Start-up Budget Patient Level Data Base: FY1990

Year 1 $200,000 Year 2 $250,000

Data Collected: UB-82

Data Collected From: Providers - Hospitals and Nursing Homes

Data Input: State agency FTEs 1.5 $ 20,000 - $ 35,000

Data Storage: Agency hardware initial expense $ 30,000
State information system

Data Analyses: State agency FTEs 2 $ 30,000 - $ 40,000

Outcome Data: Yes - refined DRGs (in process of decision planning phase)

Severity System:

Start-up: 1991-1992

Total Year 1 Budget: $ 20,000

Estimated Cost Per Record: $ .11

Agency Financed Through: State general fund

Date of Enabling Legislation: 1990

Providers Reimbursed: No

Vermont: Mike Davis

Tele #: 802-241-2239
FAX #: 802-244-8103

FY 90 Agency Budget: $215,000

FY 90 Patient Level Data Base Budget: $ 90,000 - $100,000

FY 90 Estimated Cost Per Patient Record: Approx. $1.38

FY 90 Estimated Number of Inpatient Records: 65,000

Start-up Budget Patient Level Data Base: N/A

Year 1 Year 2

Data Collected: UHDDS

Data Collected From: Providers - Hospitals

Data Input: State agency FTEs 1 $ 40,000 - $ 50,000
Contract cost per record $1.38

Data Storage: Contract organization

Data Analyses: State agency FTEs 3 $ 40,000 - $ 50,000

Outcome Data: No

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund and provider assessment

Date of Enabling Legislation: 1983

Providers Reimbursed: No

Washington: Robert Robinson

Tele #: 206-753-1990
FAX #: 206-753-5877

FY 90 Agency Budget: $ 292.7 million

FY 90 Patient Level Data Base Budget: $ 3.1 million

FY 90 Estimated Cost Per Patient Record: $ 1.00

FY 90 Estimated Number of Inpatient Records: 500,000

Start-up Budget Patient Level Data Base: FY1985

Year 1 200,000 Year 2 Unknown

Data Collected: UB-82

Data Collected From: Providers - Hospitals

Data Input: State agency FTEs 6 $ 30,000 - $ 50,000
Contract cost per record - $ .50

Data Storage: N/A

Data Analyses: State agency FTEs 3 $ 40,000 - $ 50,000

Outcome Data: No

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State general fund and provider assessment
(receipts from data products - $10,000 per year)

Date of Enabling Legislation: 1984

Providers Reimbursed: No

Wisconsin: Rita Prigioni

Tele #: 608-267-0236
FAX #: 608-267-2147

FY 90 Agency Budget: Approx. $1,500,000

FY 90 Patient Level Data Base Budget: Approx. $825,000

FY 90 Estimated Cost Per Patient Record: Approx. $ 1.25

FY 90 Estimated Number of Inpatient Records: 671,872 (06/30/89 - 07/01/90)

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UB-82s

Data Collected From: Providers - Hospital and Ambulatory Surgical Centers

Data Input: State agency FTEs 4 $ 25,000 - $ 40,000

Data Storage: Agency hardware approx. $50,000
FY90 state information system approx. $180,000

Data Analyses: State agency FTEs 1.5 $ 30,000 - $ 40,000

Outcome Data: No

Severity System: N/A

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: Provider assessment

Date of Enabling Legislation: 1988

Providers Reimbursed: No

Wyoming: Douglas Thiede

Tele #: 307-777-7656
FAX #: 307-777-7439

FY 90 Agency Budget: N/A

FY 90 Patient Level Data Base Budget: N/A

FY 90 Estimated Cost Per Patient Record: N/A

FY 90 Estimated Number of Inpatient Records: 12,000 discharges

Start-up Budget Patient Level Data Base: N/A

Year 1 Year 2

Data Collected: Hospital, Nursing Homes and state monthly reports

Data Collected From: Providers - Hospitals, Nursing Homes, and State Hospitals
Payers - Medicare and Medicaid

Data Input: N/A

Data Storage: Agency hardware initial expense: $ 12,000

Data Analyses: State agency FTEs 1 - $ 30,000

Severity System: N/A

Start-up Cost: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: State General Fund

Enabling Legislation: 1990

Providers Reimbursed: No

West Virginia: Robert Parker

Tele #: 304-343-3701
FAX #:

FY 90 Agency Budget: $2,300,000

FY 90 Patient Level Data Base Budget: est. $250,000

FY 90 Estimated Cost Per Patient Record: Unknown

FY 90 Estimated Number of Inpatient Records: 300,000

Start-up Budget Patient Level Data Base: Unknown

Year 1 Year 2

Data Collected: UB-82

Data Collected From: Providers - Hospitals,
Payers - Medicare, Medicare and self-insured organizations

Data Input: Contract cost per record N/A

Data Storage: Contract organization

Data Analyses: State agency FTEs 1 $ 24,000

Outcome Data: No

Severity System:

Start-up: N/A

Total Year 1 Budget: N/A

Estimated Cost Per Record: N/A

Agency Financed Through: Provider assessment What rate: .1% GPR

Date of Enabling Legislation: 1984

Provides Reimbursed: No

APPENDIX 5

COMMONWEALTH *of* VIRGINIA

Howard M. Cullum
Secretary of Health and Human Resources

Office of the Governor
Richmond 23219

(804) 786-7765
TDD (804) 786-7765

Re: Patient Level Data Base Study

Dear Sir or Madam:

Senate Joint Resolution Number 178, adopted by the 1991 Session of the Virginia General Assembly, requires the Virginia Health Services Cost Review Council, in cooperation with the Virginia Health Planning Board, to study all aspects of the possible establishment of a patient level data base in Virginia. The report is due on October 15, 1991 and requires that there be an examination of its potential use by providers, payers, employers, state and local governments and the general public. A copy of SJR 178 is enclosed for your review. In addition, a brief explanation of what a patient level data base entails is also enclosed.

The enactment of SJR 178 is a culmination of several ongoing efforts in the Commonwealth to determine if and to what extent health data should be collected. In 1987, then Secretary of Health and Human Resources Eva Teig requested that the State Department of Health establish the Virginia Health Data Consortium to facilitate the availability of health data to agencies and organizations in Virginia for utilization in planning and in the effective delivery of health services for all citizens. In 1989, the Virginia General Assembly established a Virginia Health Planning Board and gave it the statutory responsibility to supervise the development of a health data system to provide necessary information to support health policy recommendations. A committee of that Board has been working on this issue for some time now and has also considered applying to the Robert Wood Johnson Foundation for a grant to help establish such a system. Finally, the Virginia Health Services Cost Review Council is the state agency which collects and disseminates information concerning health care costs and charges. It is my hope that through the study required by SJR 178, all of these efforts will be pulled together to assist in a determination as to whether a patient level data base should be created.

I am writing to enlist the assistance of you and your organization in the completion of this report. It is important that all aspects of this issue be addressed to assist in the ultimate determination as to what form the health care information system of Virginia should take and what factors must be in place to allow for its realization.

We are interested in any information or comments you and your organization may have concerning the possible establishment of a patient level data base. Your comments may reference such issues as the need for patient level information; who would use the information; how the information would be collected; who would be required to provide such information; and how patient confidentiality would be protected. John A. Rupp, Executive Director of the Virginia Health Services Cost Review Council, will coordinate the preparation of this report. Although the report is due on October 15, 1991, another requirement of the Joint Resolution is that a grant application to the Robert Wood Johnson Foundation be prepared. Since the deadline for that application is August 1, 1991, it is paramount that the work on this report be initiated as soon as possible.

If possible, please provide your written comments regarding the above topic by April 30, 1991 to John A. Rupp at the Virginia Health Services Cost Review Council, 805 East Broad Street, Sixth Floor, Richmond, Virginia 23219. If you have any questions, call Mr. Rupp or Ms. Kim Schulte at (804) 786-6371. Thank you in advance for your assistance.

Sincerely,

Howard M. Cullum

Howard M. Cullum

HMC/mm

Enclosures

cc: John A. Rupp

Raymond Perry

RESPONDENTS TO SECRETARY CULLUM'S MARCH 27, 1991 LETTER REQUESTING INFORMATION AND COMMENTS CONCERNING THE CREATION OF A PATIENT LEVEL DATA BASE IN THE COMMONWEALTH

1. UNIVERSITY OF VIRGINIA HEALTH SCIENCES CENTER

* Formation of a patient level data base should address the total health system and its data needs in Virginia.

* The motivation for creating the system, whether for cost containment or improved health, must be clearly understood.

* Seek patient data from all available providers, not simply inpatient sources.

* Any data base should accept formats such as UB-82, BC/BS billing formats, or those of other major insurers to reduce the costs of preparation and to aid aggregation.

* Require third party payers to adopt common data formats, definitions, and data elements to facilitate consistent collection and administration efforts by providers.

* Prospectively identify organizations with the capacity to provide appropriate analysis and research within the data base such as the University of Virginia Health Policy Center and other public or private organizations.

* Establish a source to pay for the costs of new data.

* Costs of the system should be minimized and clearly be outweighed by anticipated benefits.

2. DEPARTMENT OF HEALTH ADMINISTRATION, MEDICAL COLLEGE OF VIRGINIA, VIRGINIA COMMONWEALTH UNIVERSITY

* Studies of the data would provide useful information for

(1) health care purchase decisions,

(2) evaluation of variations in the length and quality of care,

(3) evaluation of differences in the amount and types of care delivered to indigent clients,

(4) studying the effect of third party reimbursement policies and organizational variables on the amount, type and cost of care delivered.

* Recommend including provider numbers to facilitate linkages with current data.

3. WILLIAMSON INSTITUTE FOR HEALTH STUDIES, MEDICAL COLLEGE OF VIRGINIA, VIRGINIA COMMONWEALTH UNIVERSITY

* Assessment of hospital performance, particularly in the area of medical treatment effectiveness will require multiple indicators and patient based information.

* Clinical based data can be useful to identify the efficacy of treatment modalities, provide comparisons in hospital performance, identify sources of variations in utilization, reveal overall patterns of care, and aid in the development of cost-effectiveness analyses of interventions and patient outcomes.

* Researchers could utilize clinical data in combination with organizational and market/environmental data to explain variations in hospital performance.

* Data collection from the entire patient population would be desirable but not necessary. Appropriate sampling techniques to address specific questions offer a valid alternative.

* A common I.D. may be needed to allow the matching of cost/charge and patient data while preserving confidentiality.

4. VIRGINIA HOSPITAL ASSOCIATION

* A patient level data base will achieve its highest and best use as a quality enhancement tool employed by providers, but may also be useful to third party payers and policy makers.

* Points to be considered in its development include:

(1) Quality of Care and Resource Utilization Data Systems are in their infancy and are rapidly evolving,

(2) The means of gathering raw data vary and may be costly,

(3) The purpose of the data must be well defined and then the most cost-effective and efficient way to collect it must be found,

(4) Patient level data can be easily misinterpreted producing bad decisions, misperceptions and financial damages,

(5) Development of any patient level data base will require substantial evidence that the information collected is kept confidential,

    (6) Data gathering will be invalid, inadequate or incomplete if not provided by all persons or entities rendering the same services.

* Provider concerns regarding the collection and release of patient level data should be addressed through participation in the development process.

5. CHESAPEAKE GENERAL HOSPITAL

* What universe will be included in this data collection - hospitals and all other health care providers?

* What will the ultimate use of this data be?

* Would data be submitted on magnetic media or paper?

* Will providers be reimbursed for the cost of gathering data?

* How will confidentiality be assured?

* Will this be operated by the state, contracted to an outside agency or who would have operational responsibility?

6. SENTARA ALTERNATIVE DELIVERY SYSTEMS

* The contracting division of Sentara employs patient level data to analyze variations between hospitals; when information is available, they employ costs and average lengths of stay.

* Access to morbidity information by diagnostic category would be useful.

* Patient specific data is not needed for their operations.

7. SENTARA HEALTH SYSTEM

* The health care community would benefit from the development of a comprehensive patient level data base.

* Issues for consideration in development include:

    (1) Uniformity of data collection,

    (2) Focus on all providers of care rather than on the inpatient side,

    (3) Health insurance data has greater potential for comprehensiveness in

determining the actual use of health services and the resources expended at a disease specific level,

(4) Reporting systems should not require significant set investments or add-on operation costs to assure feasible participation by rural and troubled hospitals as well as individual practitioners.

8. BLUE CROSS BLUE SHIELD OF VIRGINIA

* Blue Cross supports and offers assistance in studying the feasibility of a patient level data base.

* Blue Cross believes clear objectives for the information must be decided in the needs assessment before issues of who provides data, collects it, manages it, analyzes it, and so forth are discussed.

9. THE TRAVELERS

* It supports establishment of a patient level data base believing benefits contemplated for the private sector and outlined in SJR 178 would carry over to Medicare.

* It recognizes the "hassle factor" on the provider community will be an important issue.

10. JEFFERSON PILOT INSURANCE/FINANCIAL SERVICES

* Usefulness to payers depends on accuracy and completeness, for example, hospital and DRG breakdowns.

* Recommend collecting data from the provider in order to assure completeness and accuracy.

11. THE LIFE INSURANCE COMPANY OF VIRGINIA

* No longer writing health business.

12. AMERICAN FAMILY LIFE ASSURANCE COMPANY OF COLUMBUS

* Company provides payments based on indemnity rather than expenses incurred; their data is very general as a consequence. They believe inquiry should be made of companies who market comprehensive health insurance products.

13. KAISER PERMANENTE

- Kaiser Permanente supports the study of the feasibility and efficacy of establishing a patient level data base to assist in developing public policy goals.

- Collection of patient level data should serve three purposes:

  (1) To assure that health care resources are used in a cost effective manner with optimum health outcomes.

  (2) To provide information on practice patterns to health care providers.

  (3) To assist purchasers in making decisions concerning their health care.

- Kaiser Permanente has significant concerns about data collection at the physician level which would be costly without a corresponding return on the investment because of the infancy of severity indexing.

- There is also concern about the potential for misinterpretation and oversimplification of patient level data if collected by a third party such as a government agency and disseminated to the public.

- Kaiser Permanente opposes release of provider or organization specific information preferring aggregate information about practice patterns or average charges.

- Key issues for research concerning a patient level data base include the following:

  (1) Severity indexing for ambulatory services.

  (2) Individual physicians are concerned that confidentiality will be violated, both for themselves and for the patient, if patient level data is widely available.

  (3) Collection of standard and comparable patient data may be difficult and is likely to have questionable validity.

- Kaiser Permanente suggests the Council first evaluate the effectiveness of data collection in existing programs to determine which methods provide the most useful information with minimal administrative costs. It cites as examples the data collected for the Cancer Registry, the Medical Society of Virginia Review Organization's CHAMPUS data, and UB-82 data collected for the federal government.

- Kaiser Permanente strongly encourages the Council to carefully analyze which specific health policy recommendations require patient level data that cannot be obtained through existing programs or through a sampling methodology.

- Goals for data collection should be clear and pursued one at a time rather than develop a data system with many goals. The system should develop incrementally in conjunction with the growth of knowledge and collection capabilities.

- It offers its expertise and resources to study the usefulness of establishing a patient level data base for public policy purposes.

14. THE GUARDIAN LIFE INSURANCE COMPANY

- Patient level information is needed and could be useful for policy making and to large employers, payers, providers and the public.

- Information should be obtained directly from providers to assure records from all seeking treatment and to overcome deficiencies in data submitted to third party payers.

- A patient identifier which would tie all patient data together without compromising confidentiality is critical.

15. THE PRUDENTIAL INSURANCE COMPANY OF AMERICA

- Barriers to successful data base development would be the following:

    (1) Multiple data base sources and coding/labeling variations among carriers and providers,

    (2) Patient and medical provider confidentiality,

    (3) Capitated and Bulk paid care for which there is no "patient data",

    (4) Benefit plan variations.

- Use of an experienced private data analysis firm is suggested.

16. CUNA MUTUAL INSURANCE SOCIETY

- CUNA supports data base development aimed at controlling costs but believes the data requested and manner of collection should follow that of other states as much as possible.

- CUNA described the Iowa system which mandates physician billing information.

17. EDUCATORS MUTUAL LIFE INSURANCE COMPANY

* Such a data base could be used to properly evaluate medical care costs in different areas and assist pricing strategies for insurance products.

* Such a data base would be used to help evaluate provider costs, and utilization management performance, in conjunction with any PPO programs offered potentially allowing lower priced insurance products.

* Published reports such as found in other states are not of as much interest as access to raw data subject to preserving individual confidentiality.

* It would oppose a general restriction of access to elements such as zip code, age or sex data with the pretext that confidentiality is being preserved.

* It would be essential to separate Medicare, Medicaid, and commercially insured patients to get meaningful data.

18. VIRGINIA ASSOCIATION OF HEALTH MAINTENANCE ORGANIZATIONS

* Patient level data should be obtained from providers of care, as any other source would be incomplete and not represent the whole population.

19. THE MEDICAL SOCIETY OF VIRGINIA

* Compelling concerns from the provider perspective include the following:

(1) Misuse and Abuse of Information,

(2) Protection Against Release of Confidential or Proprietary Information,

(3) Protection Against Unnecessary and Cumbersome Paperwork.

20. VIRGINIA ACADEMY OF FAMILY PHYSICIANS

* The Academy believes that the establishment of a patient level data base will be a positive effort and can lead to improved access to appropriate medical services.

* The Academy believes that patient and physician confidentiality should be protected and that safeguards should be initiated for the patients to assure their privacy and constitutional rights.

- The Academy believes the MCV Department of Family Practice's Representative Information System could be helpful.

21. VIRGINIA PODIATRIC MEDICAL ASSOCIATION

- Support concept of data base as tool to develop information that will help consumers make intelligent choices.

- Privacy issue and confidentiality are concerns.

22. VIRGINIA ACADEMY OF CLINICAL PSYCHOLOGISTS

- Avoid burden to providers and ultimately increase in cost to patients by encouraging insurance carriers,health maintenance organizations, and private plan administration programs to set up their computerized systems to match diagnosis and procedure codes with demographic information to provide the necessary input into the system.

- Provide public information campaign prior to implementation.

- Develop a structured user fee system.

- Confidentiality is an overriding concern. Have no identifying references to individual patients or at the very least assure procedures to protect confidentiality at all system levels.

- Support use of data base to establish patterns of practice to identify the most cost effective patterns, taking care that this not be used to exclude particular styles of practice or care that patients legitimately need.

23. COMMONWEALTH OF VIRGINIA, DEPARTMENT OF REHABILITATIVE SERVICES

- Department uses client level data bases for case management and for analysis and improvement of operations.

- Patient level data base could be used for prevalence and incidence assessments of disabling and chronic diseases in order to plan for rehabilitation services.

- Patient level data base could enhance current registries for head injuries and spinal cord injuries.

- Employers could use a patient level data base to assess job-related injuries and severity of illnesses, to develop initiatives in disability management at the work place.
- Need to protect confidentiality, especially for access to health care insurance.

24. COMMONWEALTH OF VIRGINIA, DEPARTMENT OF MENTAL HEALTH, MENTAL RETARDATION, AND SUBSTANCE ABUSE SERVICES

- Department has developed and continues to develop automated patient specific systems that capture minimum data set elements designed by national organizations.
- Patient data integrated from various agencies would enhance human services system planning and improve coordination of services.
- Regarding how would information be collected, urge incorporating data from existing systems rather than duplicating or replacing those systems.
- Regarding who would be required to provide information, determine after analyzing why the database will be established and what it will be used for.
- Encourage contributors to use the system - develop contributor-specific uses and benefits.
- Address <u>protecting</u> confidentiality as opposed to <u>guaranteeing</u> confidentiality.
- To develop support from general public, market a clear and meaningful purpose for the database.

25. COMMONWEALTH OF VIRGINIA, DEPARTMENT OF SOCIAL SERVICES

- Department need includes projecting medical costs for foster care or defining, with the Department of Medical Assistance Services, optional Medicaid coverage groups.
- Departmental program units and planning and budget staff would use information for better cost projections.
- Ideally collect information at the time the medical service is rendered or through insurance claims.
- Rather than mandate participation, obtain on a sampling basis.
- Protect patient confidentiality.

26. COMMONWEALTH OF VIRGINIA, DEPARTMENT FOR RIGHTS OF VIRGINIANS WITH DISABILITIES

- Organization supports data base development if it can facilitate access to quality affordable health care, a key concern and dissatisfaction within its constituency which has high rates of unemployment and consequently often little or no health insurance.

- Data base needs for the Department include patient identification and service provider information to help identify where barriers in practice or policy result in inadequate access to or quality of care.

27. COMMONWEALTH OF VIRGINIA, DEPARTMENT OF HEALTH

- Main policy issues and data needs of most potential users can be identified.

- Policy issues deal with access to, availability of, cost of, outcome from, and quality of medical care; most other issues fall within these categories.

- The Center for Health Statistics has considered this issue with the major providers. Most data was available in electronic form but difficult to access due to differences in hardware, software, and proprietary rights.

- Prioritization and identification of data needed for public policy is possible and can be cost-effective. Key areas of concern should be:

    (1) Morbidity data (mostly ambulatory)

    (2) Functional data (health interview surveys on individual health status)

    (3) Utilization data (who does what to whom, where, and with what results)

    (4) Financial data (who are we paying, where, with what results on health)

- The data base should be funded to provide incentives to provide data in an aggregatable form showing care received by a person in all locations.

- Duplication of effort in data collection should be avoided.

- The data system may be useful in the development of cost-benefit analyses and a rationale for a triage system which could restrain increases in the costs of health care.

28. COMMONWEALTH OF VIRGINIA, DEPARTMENT OF HEALTH PROFESSIONS, BERNARD L. HENDERSON, JR.,

- Letter represents his personal opinion.
- If reasonable objections regarding the costs of recording and reporting, potential for misuse, confidentiality, or economic abuses such as price fixing can be addressed, the chances for approval and acceptance will be enhanced.
- A patient level data base could be a catalyst for efforts to create stronger economic regulations at the provider level.

29. UNITED COAL COMPANY

- Data should be useful in comparisons of costs, utilization, and services and provide a basis for negotiations to improve health care services at lower costs for employees and their families.
- Data should be available from providers, insurance carriers, and self-insured employers.
- Patient specific data should not be needed, so confidentiality should pose no problem.
- Data could affect workers' compensation costs if it provided a basis for comparison between institutions and also providers; it could be employed in fee negotiations between vendors and employers in all areas of health care.
- Areas of service duplication and unavailability could be identified, assisting the CON process and restraining expenditures for duplicative efforts.
- All providers, insurance carriers, and self-insured employers should be required to furnish all the data they maintain.
- Patient-specific data need not be collected, therefore confidentiality will not be a problem.

30. JAMES RIVER CORPORATION

- Supports creation of a state level data base to facilitate responsible purchase of health care services and the appropriate allocation of resources.
- Critical elements for consideration include:

(1) Information that highlights over and under serviced areas, practice patterns, and the impacts of medical interventions.

(2) Data should be acquired to help achieve objectives.

(3) Data should incorporate indigent care and track the sources and uses of all expenditures in the system.

(4) Patient confidentiality is important.

* It is critical to have information available to make intelligent decisions in the areas of quality, cost, and access to care. Without information on effectiveness, investment of further resources into the system will most likely result in inappropriate and unnecessary consumption of services, and proliferate runaway medical expenditures.

31. PHILIP MORRIS

* Supports creation of a patient level data base to allow employers to identify quality/cost effective health care providers and to steer employees and dependents.

32. INFILCO DEGREMONT, INC.

* Supports creation of a patient level data base to allow employers to assess quality of health care and to make purchasing decisions on that basis.

* Supports collection and management by independent state agency to avoid data manipulation by interest groups.

* Supports a patient level data base rather than simply the less detailed collection of data such as from UB-82 forms.

33. HAMPTON ROADS CHAMBER OF COMMERCE

* Issues for consideration in development include:

(1) How data would be gathered with foreseeable results in reducing costs or improving services,

(2) The types of information for inclusion in the data base,

(3) The administration of the data base and the avoidance of unnecessary overhead,

(4) The system's usability by all levels of employers and individuals to find affordable quality medical care,

(5) The availability of the data from the insurance companies and the avoidance of unnecessary additional expenses to providers,

(6) How data analysis and reports would reflect differences between general and tertiary level hospitals.

- Generally support any efforts which would help contain costs while protecting the availability and quality of care

34. TIDEWATER HEALTH COALITION, HEALTH CARE STRATEGIES, INC.

- Concerns were raised regarding the effective use of data by employers and the expense of collection based on experience in an effort seven years ago.

- Expense of collection should be minimized by requiring carriers to submit claims tapes with patient names suppressed.

- Concerns are expressed about the ability to centralize all health care data reporting within a single agency; adding yet another agency would simply add to reporting costs.

- Any data developed must be freely available to the public without edit, otherwise the expense of collection is not warranted.

35. BLUE RIDGE REGIONAL HEALTH CARE COALITION, INC.

- There is a definite need for patient level information.

- Employers, physicians, hospitals, insurance companies and any health care provider would use the information.

- Costs of collection and reporting are important; but initial data base needs could be met by tapping the hospitals and third party carriers supplemented by data from physicians and/or PPOs/HMOs.

- Confidentiality is important but does not represent a significant technical problem to resolve.

36. BUYERS HEALTHCARE COOPERATIVE OF GREATER RICHMOND

- Some members wish to enter into direct hospital-employer service contracts to allow quality health care purchasing.
- Seek balance in the quality-cost-access equation for Virginia.
- Believe patient level data base will benefit businesses, hospitals, and employees.
- Data base would enhance their position as purchasers of quality health care, facilitate provider selection, and aid the design of innovative employee benefit plans.

37. RICHMOND AREA BUSINESS GROUP ON HEALTH, INC.

- Offer a position statement supporting the validity of establishing a public patient level data base.
- Believes employers must change from being reactive "payers" to proactive "purchasers" of care.
- Without the ability to purchase care based on measurable and defined clinical treatment outcomes, a competitive marketplace for care will not exist.
- Direct consumer benefit manifested in better care outcomes at a better value is the overarching goal of all the state data initiatives and should be kept clearly in mind.
- Believe patient level data base will benefit businesses, hospitals, and employees.
- Data base would enhance their position as purchasers of quality health care, facilitate provider selection, maintenance and accountability in managed care networks, and aid the design of innovative employee benefit plans.
- Notwithstanding the many difficulties, the Business Group believes creation of the data base is essential to achieve quality health care at a competitive cost.
- Employers ready to explore public/private partnership to educate citizens about purchase and consumption of health care; they are ready to discuss employer driven financial incentives to make the project successful.

38. HEALTH CARE INVESTMENT ANALYSTS, INC.

- Particularly interested in financial and DRG related data.

- Not interested in data which could directly identify an individual patient.
- Recommends California's *Discharge Data Tape Format Documentation.*

39. PROMPT ASSOCIATES

- All concerned parties in health care would have their interests served by the systematic collection of health care information by appropriate state agencies.
- Participation by all health providers should be mandatory excepting patient names.
- Private companies will be willing to pay to purchase this data defraying in part the state's expense.

40. WILLIAM M. MERCER INCORPORATED

- Support the study and possible establishment of a patient level data base for the following reasons.
    (1) Firm works with a number of large and small companies in the Commonwealth trying to cope with rapid increases in health care costs.

    (2) Among U.S. CEOs, there is a growing concern about costs and a growing interest in Alternative Delivery Systems (HMOs and PPOs).

    (3) In Mercer's Survey of CEOs, 75% indicate their intention to exert greater influence on health care providers and 50% were already negotiating rates with providers.

    (4) Public and private purchasers need data to directly contract with hospitals and analyze physician practice patterns.

    (5) Where public patient level data is available, employers and managed care organizations can identify cost efficient hospitals and selectively contract or develop preferred provider relationships.

    (6) In states such as Virginia, employers instead must rely on insurer or employer specific data which may not be representative of activity in the area or the performance of the providers, making selective contracting difficult.

    (7) While major employers can compensate for deficiencies in the data base by using proprietary data and Medicare information, most purchasers cannot get access to this data for use in developing cost containment strategies.

    (8) A data base can serve the interests of hospital and other providers by facilitating their strategic planning, competitiveness, and the creation of collaborative relationships with purchasers to serve their respective needs.

* Data base over time should be catalyst for building/remodeling health care delivery system.

* Gather data during annual licensure renewal process.

* Public and private sector planners would use the data base to develop services that meet defined needs.

* Patient confidentiality is an issue; can gather data in aggregate form.

41. WILLIAMS, THATCHER & RAND

* Supports development of a patient level data base to facilitate employers making informed choices about purchases of health care and to manage the costs of their health plans better.

42. HEALTH SYSTEMS AGENCY OF NORTHERN VIRGINIA

* A data system should embrace these principles and characteristics:

    (1) Data should include demographic, diagnostic, economic, geographic, and outcome elements,

    (2) Availability to all interested parties in a more timely/reliable manner than with current state data,

    (3) Summary reports of data and analysis should be published periodically,

    (4) Small area analysis will require data collected to be facility, service and location specific,

    (5) Patient confidentiality should be assured,

    (6) Provider facilities and services should be revealed with appropriate safeguards against competitive disadvantage for specific provider organizations or classes of providers,

    (7) The system should be self-sustaining with all users sharing the costs of maintenance,

(8) Location of the program's control and management should foster public credibility and support.

* The need for reliable health system data is great among the provider and employer communities; and data can be collected, analyzed, and published provided there is effective leadership, a well-defined public purpose, perceived equity, and competent analyses.

43. NORTHWESTERN VIRGINIA HEALTH SYSTEMS AGENCY, INC.

* Supported the establishment of a patient level data base so long as:

(1) It is credible with all parties, and sufficiently valid to allow analysis and decision making

(2) Data is available and accessible to all interested parties in a timely manner,

(3) Periodic (annual) reports are published,

(4) Only patient identities are protected,

(5) At least demographic, diagnostic, outcome, and cost data are collected; facility/provider and geographically specific data ought to be collected.

* Public needs for data as a consequence of escalating costs appear to outweigh provider concerns with release of provider-specific data.

44. CENTRAL VIRGINIA HEALTH PLANNING AGENCY, INC.

* Only a limited patient level data base is available currently to address policy issues or to evaluate the acceptability of specific procedures within the delivery system.

* Hospital and related physician services contribute more than half of medical care expenditures, so the statewide system should start there.

* Preserve patient confidentiality, but assure that the public has timely access to diagnosis/procedure, facility/provider and geographic specific data.

* Periodic reports summarizing the basic health care system should be issued minimally containing demographic, diagnostic, outcome and cost information for health care providers and facilities in the Commonwealth.

* Data system development should be compatible with existing state data systems.

- Policy makers, businesses, health insurers, providers, patients and their families, and the public will all be served by the establishment of such a system.

45. EASTERN VIRGINIA HEALTH SYSTEMS AGENCY, INC.

- It is necessary to have a patient level data base to allow the small area analyses of practice patterns which can be used to identify practice problems locally.

- Hospital management information systems are focused on charges more than costs, and those with such information apt to view it as proprietary.

- While it is important to preserve patient confidentiality, the public must have access to the data which should be provider-specific.

- Provider concerns should not be allowed to emasculate the development of a needed system of great use to the public, consumers, payers, government, and the providers themselves.

- Information should be diagnosis/procedure, geographic/ demographic, provider and outcome specific and allow small area analysis.

- Annual reports should be made to supplement those of the VHSCRC and the Center for Vital Statistics.

46. NATIONAL ASSOCIATION OF HEALTH DATA ORGANIZATIONS (NAHDO)

- Support creation of a publicly accessible, patient level hospital discharge data base in Virginia; benefits outweigh the costs.

- Uses of data base information:

  (1) Identify commonalities and differences in service delivery and patient outcomes.

  (2) Promote needed changes in delivery and financing health care in Virginia.

  (3) Understand use, costs and case-mix of hospital care, and assess which data are useful as indicators of quality of care.

  (4) Provide insight on medical practice patterns and treatments.

- Having a patient level data base will enable Virginia to participate in a multi-state data base being developed by NAHDO-Systemetrics/McGraw-Hill-Information Strategies.

- Broad legislative mandates enable sequential development, e.g. hospital data, then ambulatory and long term care data; ambulatory core data set and definitions are available.

- Using existing claims/administrative data such as the UB-82 minimizes the reporting burden. Providers should review the data before publication.

- Ensure patient confidentiality through rules, regulations and procedures. Use a unique patient identification number; recommend the social security number.

- Assess the experience of other states before selecting any severity of illness systems.

47. MEDICAL FACILITIES OF AMERICA, INC.

- Data base over time should be catalyst for building/remodeling health care delivery system.

- Gather data during annual licensure renewal process.

- Public and private sector planners would use the data base to develop services that meet defined needs.

- Patient confidentiality is an issue; can gather data in aggregate form.

48. VIRGINIA ASSOCIATION FOR HOME CARE

- Organization is supportive as there are no common data services addressing the various types of home care and their sources of reimbursement.

- The association perceives the growth of home care to be dramatic, continuous, and cost-effective; it believes the other institutions within the industry need to be aware of its activities to appropriately plan their efforts and to coordinate them with the home care industry.

49. VIRGINIA HEALTH CARE ASSOCIATION

- Recognizes the potential value of a patient level data base.

- Patient level data is needed to understand the health care system.

- Believes the data could be used by many organizations.

* Believes the data should come from providers when produced for billing.

* Techniques for assuring confidentiality are important.

* Believes if data base extended to nursing home patients, then comprehensive assessments on admission (the HCFA Minimum Data Set) should be employed.

This data is reported to Medicaid which provides payment for almost 70% of all patients.

50. OAK LEA

* Concerns about a patient level data base include the need for additional data in long term care, whether the data is already collected, or could be compiled without requiring extra reporting.

* Feels facility would not benefit from establishment of a patient level data base. It would have little effect on the quality of care provided by long term care facilities.

51. THE RICHMOND NEWS LEADER

* Patient-specific data should be disclosed so long as confidentiality is respected.

* Adding a patient level data base to the annual hospital charge survey would enhance the ability of the newspaper to cover health issues.

52. THE MEDICAL SOCIETY OF VIRGINIA REVIEW ORGANIZATION

* Supports the concept of a statewide patient level database.

* Agrees to provide data tapes of Medicare and CHAMPUS inpatient discharges to the Commonwealth of Virginia with certain confidentiality restrictions.

APPENDIX 6

A REPORT TO THE VIRGINIA HEALTH PLANNING BOARD

FROM

THE TASK FORCE ON ESSENTIAL DATA FOR HEALTH SYSTEM EVALUATION

JUNE 5, 1991

Chairman:	William G. Ehlman
Staff Coordinator:	Kay E. Brooks

HEALTH DATA IN THE COMMONWEALTH

EXECUTIVE SUMMARY

In 1990 the Data Task Force of the Virginia Health Planning Board was formed to study the health data needs of the Commonwealth and how health data could be used to affect the delivery and cost of health care services for all citizens. To accomplish this directive the Data Task Force has:

- Reviewed current health data collection in the Commonwealth;
- Studied health data collection efforts in other states; and
- Convened various working groups comprised of agency representatives and other interested parties to discuss data needs.

The Task Force found that potential comprehensive health data system users such as consumers, providers, third party payors, business and industry, employers, health planners, legislators, and researchers agree that there is a need for comprehensive health data for their informed decisionmaking.

Other states have recognized the need for comprehensive health data. Thirty five states have enacted legislation to provide for patient level data collection.

Virginia has taken the following steps toward a data system:

1985	Study of a consolidated health data base that was requested by the General Assembly and which recommended a hospital patient level data base.
1987	Virginia Health Data Consortium organized.
1989	Virginia Health planning Board was tasked to supervise development of a health data system in order to provide necessary information to support health policy recommendations and to develop proposals for statewide data collection systems for health care manpower distribution and for mortality and morbidity rates for citizens of the Commonwealth.
1990	Essential Data for Health System Evaluation Task Force formed.
1991	General Assembly adopts joint resolution directing the Virginia Health Services Cost Review Council to work with the Virginia Health Planning Board in conducting a study on the establishment of a patient level data base and to prepare a grant application to the Robert Wood Johnson Foundation.

Despite the above steps, Virginia remains well behind most other states in health data available.

RECOMMENDATIONS:

The Health Data Task Force therefore:

(1) recommends to the Virginia Health Planning Board that the Board pursue development of a comprehensive integrated health data system that will be useful to and accepted by the users (i.e. Consumers, Providers, Third Party Payors, Business and Industry, Employers, Health planners, Policy makers, legislators, and Researchers;)

(2) recommends that resources and necessary state commitments be provided by the Governor and the Secretary to prepare the application and to gain grant funding from the Robert Wood Johnson Foundation for a data system;

(3) recommends the establishment of a patient level data base that will become a major part of the Virginia comprehensive health data system; and

(4) recommends that the work of the Data Task Force be continued towards the development of a comprehensive health data system.

The following paper outlines the work of the Data Task Force to date in its efforts to address health data needs, uses, and responsibilities. The paper concludes with recommendations for the development of a comprehensive health care data base necessary for effective health care planning and policy formation.

APPENDIX 7

RECOMMENDATION

The Virginia Health Services Cost Review Council recommends the establishment of a patient level data base that would become a major part of Virginia's Health Data System. In establishing the patient level data base, the following should be ensured:

1. That there be adequate prior input of relevant parties regarding the establishment and implementation of the patient level data base to ensure that each of their needs are met. This will include representation from consumers, providers, third party payers, employers, health planners, policy makers, legislators, and researchers;
2. That there be advance planning to ensure that there is adequate funding both to establish a patient level data base and then to operate it on an annual basis thereafter;
3. That there be adequate consideration given to financial needs and requirements of parties at interest in both using and providing the information;
4. That there be adequate prior consideration by relevant parties as to how the patient level data base would be "brought on board" including a consideration of which data elements are to be provided; and
5. That there be adequate provision for confidentiality requirements to protect the needs of patients and individuals whose information is provided to the patient level data base.

APPENDIX 8

The Robert Wood Johnson Foundation

Information For State Health Policy

Inter-Agency Working Group

Project Director, D. Coronado

Steering Committee

Chairman: Secretary of Health and Human Resources, H.M.Cullum
Virginia Department of Medical Assistance Services, B. Kozlowski
Virginia Department of Health Professions, B. Henderson
Virginia Department of Health, Robert B. Stroube, Acting Commissioner
Virginia Health Services Cost Review Council, J. Rupp
University of Virginia, D. Detmer
Medical College of Virginia, C. Fischer
Commission on Healthcare for All Virginians, J. Kusiak

Technical Advisory Committee

Chairman: Secretary of Health and Human Resoures, H.M. Cullum
Department of Mental Health,
  Mental Retardation & Substance Abuse Services, K. Davis
Virginia Department of Rehabilitative Services, S. Urofsky
Virginia Department of Personnel and Training, A. Graziano
Virginia Department of Information Technology, D. Massy
Virginia Health Systems Planning Agency, G. Barker
Virginia Hospital Association, B. Rueben
Virginia Health Care Association, S. Clement
Blue Cross/Blue Shield of Virginia, L. Colley
Medical Sociaty of Virginia Review Organization, M. Lundberg
Technical representatives from Steering Committee Memberships

Executive Committee of the Commonwealth Center for Health Policy

University of Virginia, D. Detmar
Medical College of Virginia, J. Jones
Medical College of Hampton Roads, D. Combs
Hampton University, B. Davis
Virginia Polytechnic Institute and State University, J. McAuley
George Mason University, A. Johnson-Brown

Inter-Agency Working Group

Steering Committee

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  Office of the Governor
  Secretary of Health and Human Resources

- Bruce V. Kozlowski
  Director
  Virginia Department of Medical Assistance Services

- Bernard L. Henderson, Jr.
  Director
  Virginia Department of Health Professions

- Robert B. Stroube, M.D.
  Acting Commissioner of Health
  Virginia Department of Health

- John A. Rupp
  Executive Director
  Virginia Health Services Cost Review Council

- Don E. Detmar, M.D.
  Vice President for Health Sciences
  University of Virginia

- Carl Fischer
  Executive Director
  Medical College of Virginia

- Jane Kusiak
  Deputy Director
  House Appropriations Committee

Technical Advisory Committee

- King Davis, Ph.D.
  Commissioner
  Virginia Department of Mental Health, Mental Retardation and Substance Abuse Services

- Susan Urofsky
  Commissioner
  Virginia Department of Rehabilitative Services

- Anthony Graziano
  Manager, State and Local Health Benefits Program
  Virginia Department of Personnel and Training

- Donnivan Massey
  Director, Systems Development
  Virginia Department of Information Technology

- George Barker
  Associate Director
  Regional Health Planning Agency of Northern Virginia

- Bruce Rueben
  Vice President of Finance
  Virginia Hospital Association

- Sam Clement
  Director of Finance
  Virginia Health Care Association

- J. Lawrence Colley, M.D.
  Vice President, Corporate Medical Policy
  Blue Cross/Blue Shield of Virginia

- Michael Lundberg
  Data Director
  Medical Society of Virginia Review Organization

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  Vice President for Institutional Advancement
  Medical College of Hampton Roads

- Bertha Davis, Ph.D., R.N.
  Dean, School of Nursing
  Hampton University

- William J. McAuley
  Director of Gerontology
  Virginia Polytechnic Institute and State University

- Hazel W. Johnson Brown, Ph.D., R.N.
  Director, Center for Health Policies
  George Mason University