

Approved

Stephen R. Cloud
Date

MINUTES OF THE HOUSE COMMITTEE ON GOVERNMENTAL ORGANIZATION

The meeting was called to order by Representative Stephen R. Cloud at
Chairperson

9:05 a.m./~~p.m.~~ on Thursday, January 16, 1986 in room 522-S of the Capitol.

All members were present except:

Vice Chairperson Barr - Excused

Committee staff present:

Avis Swartzman - Revisor
Carolyn Rampey - Research Dept.
Russ Mills - Research Dept.

Conferees appearing before the committee:

Barbara Sabol - Secretary of the Department of Health and Environment

The meeting of the House Governmental Organization Committee was called to order by Representative Stephen R. Cloud, Chairman, at 9:05 a.m. He welcomed the Committee back, stating it was the same membership as last year. He looks forward to the bi-partisan efforts of the members. Representative Walker will be the ACP, Acronym Control Person. Staff and the Ranking Minority Member, Representative Sughrue, were introduced.

Two agencies are up for sunset review this session. They are the Department on Aging and the Department of Health and Environment. There will also be bills assigned to the Committee. HCR 5028, A Proposition to revise Article 6 of the Constitution of the State of Kansas has been assigned to the Committee jointly along with Education.

There will be three subcommittees dealing with Aging, Health and Environment and bills of a general nature. HB 2231, Representative Aylward's bill dealing with the creation of a Department of Public Safety and Law Enforcement, is a carry over bill from last session.

John Peterson has contacted the Chairman and told him that he will be hosting the second annual Governmental Organization dinner for both House and Senate G.O. members. A tentative date of March 20 has been set.

The Chairman stated there are three official actions that need to take place with regard to House Bills 2108, 2110 and 2111. These bills were amended into HB 2109 last session and the bill was passed by both House and Senate and signed by the Governor.

Representative Sutter moved to report HB 2108, HB 2110 and HB2111 adversely.
Representative Graeber gave a second to the motion. The motion carried.

Chairman Cloud introduced Barbara Sabol, Secretary of the Department of Health and Environment, who was present to give an overview of the Department.

Secretary Sabol introduced Robert Epps, Administrative and Support Services Director. She thanked the Committee for asking her to appear today. She said the Department functions to regulate, educate and provide direct services to Kansans. Its two major goals are to protect and promote the health and welfare of all Kansas citizens. It handles everything from birth certificates to hazardous waste. The Secretary gave a short history of the Department, beginning from its creation in 1885 to the present. She mentioned that it is symbolic the Department is coming under review since it starts its second century in existence this year. A chart showing the Organization of the Kansas Department of Health and Environment was distributed. (See Attachment A)

In speaking of the Department's budget, Secretary Sabol stated that the 1986 budget is approximately 40 million, with 14.9 million coming out of the state general fund. In 1987 a budget of approximately 45 million dollars will have 14.5 million dollars coming out of the state general fund. This will be an actual decrease of 2.3%. At the present time, the Department relies heavily on federal funds. The Secretary also distributed copies of the Executive Summary, The 1984 Plan for the Health of Kansans (See Attachment B) and A Water Quality Report (See Attachment C).

SAR

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON GOVERNMENTAL ORGANIZATION,
room 522-S, Statehouse, at 9:05 a.m./~~p.m.~~ on Thursday, January 16, 1986.

The Secretary finished her presentation, stating she would be happy to answer any questions. One of the members asked where the Department would make up for the decrease in general fund money. She replied the money would be made up in part by the elimination of tuberculosis programs since this disease has been virtually wiped out in the state. The Secretary also clarified a budget question for one of the members. The Chairman thanked Secretary Sabol and turned to the next order of business.

After speaking with Senator Vidricksen, it was decided that the House Governmental Organization Committee should go ahead with having the two bills drafted and introduced that would extend the Department on Aging for 8 years and the Department of Health and Environment for 8 years and have these bills referred back to committee.

Representative Graeber moved that legislation be drafted and introduced that would extend the Department on Aging for 8 years. Representative Sughrue gave a second to the motion. The motion carried.

Representative Hassler moved that legislation be drafted and introduced that would extend the Department of Health and Environment for 8 years. Representative Harder gave a second to the motion. The motion carried.

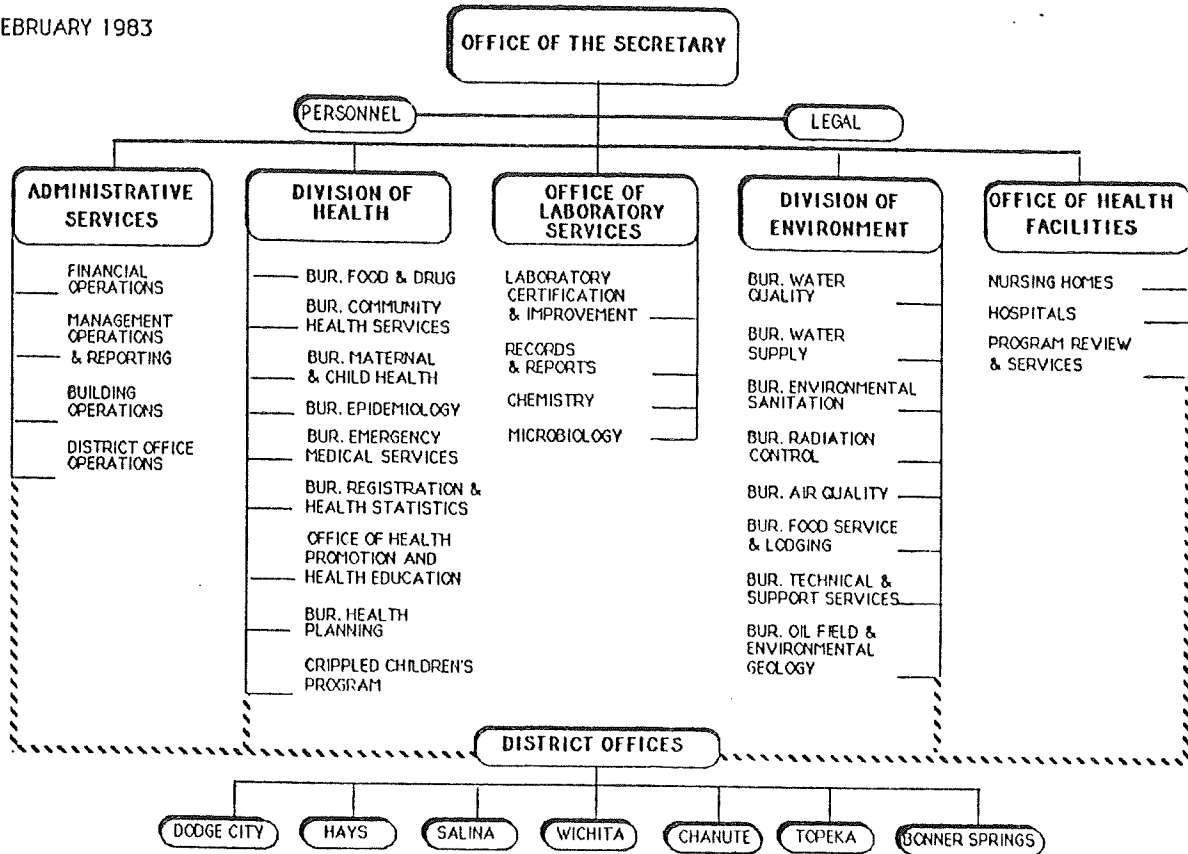
The Chairman informed the committee of the Governor's Executive Order regarding the Board of Agriculture. The decision has not been made by the Speaker as to which Committee will get this bill. The Order would be sent to both House and Senate. If either body would reject it, the Order could go no further. The Senate would take the lead with the Order.

After a review of the Agenda, the Chairman adjourned the meeting at 9:50 a.m.

ORGANIZATION OF THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT

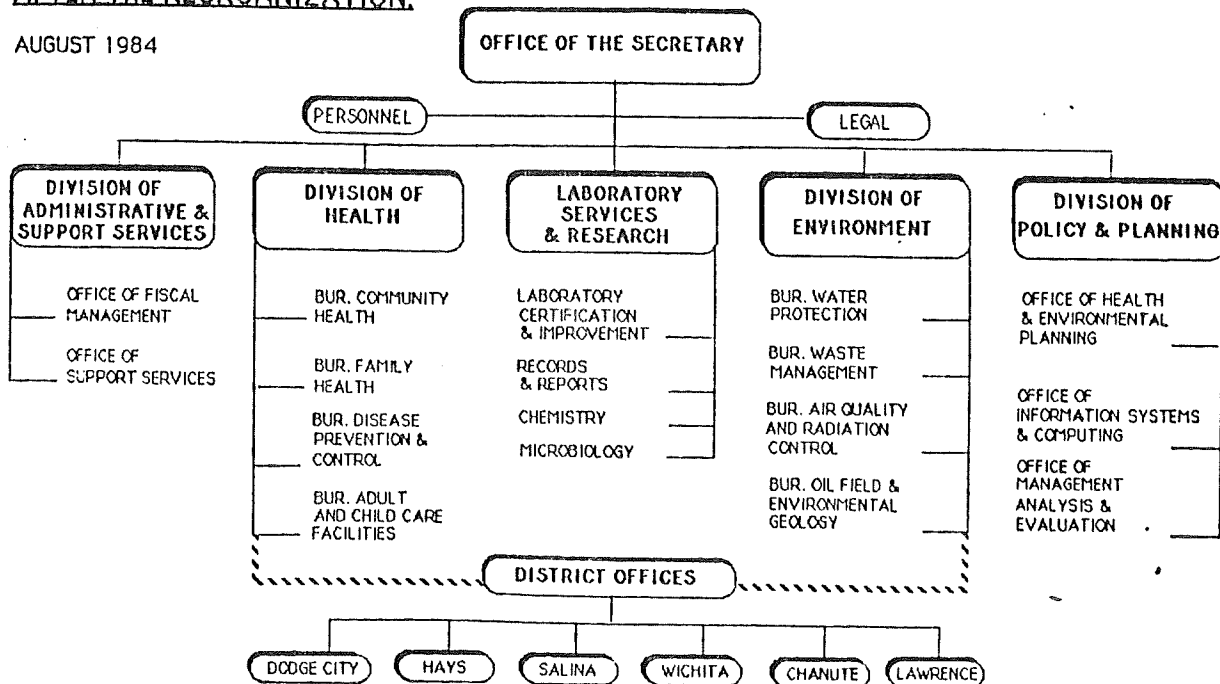
BEFORE THE REORGANIZATION:

FEBRUARY 1983



AFTER THE REORGANIZATION:

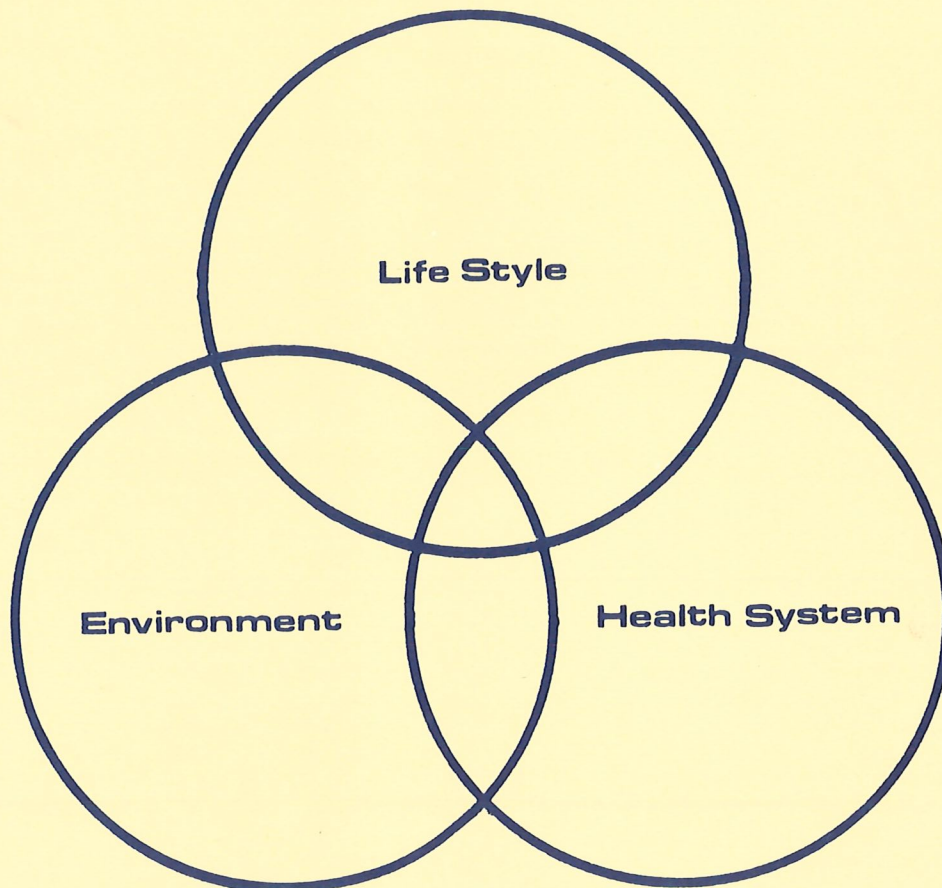
AUGUST 1984



EXECUTIVE SUMMARY

The 1984 Plan for

The Health of Kansans



**STATEWIDE HEALTH COORDINATING COUNCIL
AND
DEPARTMENT OF HEALTH AND ENVIRONMENT**

Attachment B
1/16/86 Hs. Gov. Org.

INTRODUCTION

The 1984 Plan for the Health of Kansans is part of an ongoing effort aimed at the development of a comprehensive health policy for Kansas. The State Health Plan is intended to be used as a guide for the Governor and the Kansas Legislature in health policy issues and in the development of state health programs. At the same time, the plan should be useful as a guide for private sector decisions concerning the development of health care resources. The State Health Plan is also used as the basis for reviewing applications for federal health funds and Certificates of Need for health facilities.

In this Executive Summary of the 1984 Plan for the Health of Kansans, policy issues and recommendations developed by the Statewide Health Coordinating Council in the following major health areas are highlighted:

HEALTH CARE COSTS

- Introduction
- Diagnostic Related Groups
- Health Maintenance Organizations
- Health Insurance Issues
- The Medicaid Program
- Wellness Promotion/Disease Prevention
- Accidental Injuries and Deaths
- Physicians and Health Care Costs
- Ambulatory Surgery

LONG-TERM CARE

- ENVIRONMENTAL/HEALTH DATA
- AVAILABILITY OF PRIMARY CARE
- NURSING RESOURCES
- ACUTE CARE HOSPITALS
- MATERNAL AND INFANT CARE
- COMPUTED TOMOGRAPHIC SCANNERS
- MENTAL HEALTH SERVICES
- SUBSTANCE ABUSE SERVICES

The Executive Summary is offered as a prelude to the State Health Plan, not as a replacement. It is designed to acquaint the reader with the general topic areas covered in the State Health Plan. The concluding section of the Executive Summary also highlights other activities in which the Statewide Health Coordinating Council and the Office of Health and Environmental Planning have been involved. These include studies of health care expenditures and medically underserved areas. The individual who seeks in-depth information on a particular topic is encouraged to request further information from:

Office of Health and Environmental Planning
Department of Health and Environment
6700 South Topeka Avenue - Building 321
Topeka, Kansas
(913) 862-9360, ext. 535

HEALTH CARE COSTS Introduction

The cost of medical care in the United States has nearly doubled every five years since 1955. The average growth rate of the Gross National Product has been exceeded by the rate increase of health care expenditures by several percentage points for many years. In 1982, the GNP rose by 4.1 percent while health care costs increased by 12.5 percent. The cost of medical care is rising at a greater rate than that of any other major American goods or service. A total of \$322.4 billion were spent on health care in the United States in 1982.

In Kansas, expenditures for health care services and supplies have increased every year from 1974 to 1982, with annual jumps of approximately \$200 million. Health expenditures in the state in 1982 totaled \$2,857 million, an increase of 12 percent over 1981's total expenditures. The health expenditure share of the 1982 Gross State Product was 9.0 percent, a significant increase over 1981's 8.5 percent share.

National personal health expenditures have consumed a greater share of personal income, increasing from 9.2 percent in 1975 to 11.1 percent in 1982. While the portion consumed has been less in Kansas, the trends are parallel. Kansas personal health expenditures were 8.3 percent of personal income in 1975, and increased to 9.5 percent in 1982. These trends provide some measure of the burden of health care spending on individuals.

In recognition of the growing concerns about the cost of health care, the Statewide Health Coordinating Council dedicated 1983 to a study of cost related issues. Analysis of eight specific topics resulted in the generation of numerous recommendations for health care cost containment through reimbursement issues and alternative services issues. These eight topics are now presented.

Diagnostic Related Groups

Effective October 1, 1983, Medicare, the federal health insurance program for the elderly and disabled, no longer reimburses hospitals for inpatient services under the traditional retrospective cost-based system. Development of a prospective payment proposal was called for in the Tax Equity and Fiscal Responsibility Act of 1982. The system required the establishment of prices in advance (i.e., prospectively) on a cost-per-case basis, using 467 categories of patient classification called diagnostic related groups (DRGs).

Rates were established for nine census divisions as well as for rural and urban areas within each division for every DRG. The program will be phased in over a four year period and will be fully implemented in Fiscal Year 1987.

Many questions are raised by the implementation of such a massive system change. The questions will likely not be answered until well into the operation of the prospective payment system, but nonetheless they are

repeatedly asked: What will be the system's impact on patient care?; How will the system affect hospitals?; Will the DRG payment rates be sufficient for rural hospitals?; and, most basic, How will the system work?

In addition to the federal Medicare program, Blue Cross and Blue Shield of Kansas is also basing their inpatient reimbursement system on DRGs. The Competitive Allowance Program (CAP) became effective January 1, 1984. All 137 acute-care hospitals in the state elected to participate in the program and agreed to accept the DRG rates as payment-in-full.

The Statewide Health Coordinating Council recommends that two actions be taken to restrain unnecessary increases in expenditures for health care services: 1) encourage prospective payments for all services; and 2) reduce unnecessary utilization.

1. Encourage prospective payments for all services. The performance of prospectively established health care payment systems and existing cost-containment programs must be monitored. The impact of diagnostic related group-based payment systems and preferred provider organizations on the availability, accessibility and quality of health care services is a primary concern, and must be monitored. Kansas State government should encourage prospective payments for health care services.
2. Reduce unnecessary utilization. The general concepts of utilization management contained in Medicare's and Kansas Blue Cross/Blue Shield's DRG systems should be extended to all health care services.

Health Maintenance Organizations

Health maintenance organizations (HMOs), are an example of alternative delivery systems designed to provide high-quality, comprehensive care at competitive prices. Insurance and financial functions are combined with the provision of health care in HMOs; the programs compete with traditional insurance plans and fee-for-service providers for their clientele.

In return for their members' prospective payments, HMOs provide a range of health maintenance and treatment services, either directly or by referral. The prepayment method creates incentives to provide efficient, high-quality and less costly care.

In 1983, there were 280 HMOs in the country, with a total enrollment of 11.6 million persons. As of April, 1984, there were six HMOs in Kansas serving persons in over ten counties.

The Statewide Health Coordinating Council recommends that actions be taken to contain increases in health care expenditures through the provision of appropriate and high-quality health services by the most cost-effective method possible. Policy recommendations are offered in two areas: 1) implement programs to reduce demand and utilization of services; and 2) encourage expansion of HMO services to targeted populations.

1. Implement programs to reduce demand and utilization of services. The development of prepaid alternative delivery systems should be evaluated and encouraged as appropriate.
2. Encourage expansion of HMO services to targeted populations. Health maintenance organization services should be expanded to Medicare and Medicaid beneficiaries. Kansas planning agencies should evaluate demonstration social/health maintenance organizations which are being developed in other areas of the country.

Health Insurance Issues

America's health insurance system has been identified as the "most popular culprit for the health care cost problem." The large third party payment system has insulated consumers from the true cost of health care; the result has been excessive utilization of health resources.

Because of the significant role played by insurance in the increasingly high cost of health care, federal and state governments, as well as private insurers, are analyzing more cost-effective delivery methods and various methods of restraining the use of services, while at the same time attempting to increase consumers' awareness of the issues. Some of these methods include cost-sharing, and cost containment efforts of Blue Cross and Blue Shield plans.

The Statewide Health Coordinating Council recommends that three actions be taken to restrain excessive increases in expenditures for health care services through insurance related methods: 1) implement programs to reduce demand for services; 2) increase public awareness of health care costs and cost containment; and 3) promote catastrophic medical coverage for all persons.

1. Implement programs to reduce demand for services. Health insurance carriers should offer comprehensive coverage including coverage for outpatient services as alternatives to inpatient care, deductibles, and copayment provisions; first-dollar coverage should be available as a separately priced benefit. Subrogation of insurance benefits should be studied to determine if it could reduce health care costs.
2. Increase public awareness of health care costs and cost containment. Education programs on group health insurance and health care costs for major purchasers and statewide business groups should be continued. The Kansas Insurance Commissioner should develop and implement an education program for major purchasers to inform them about health cost issues related to group health plans. The program should also be used to promote cost consciousness with statewide business groups and consumer coalitions.
3. Promote catastrophic medical coverage for all persons. A study of catastrophic medical coverage, including long-term care and rehabilitation services, should be completed and such coverage should be promoted. The extent and specific causes of possible barriers to health care in Kansas should be determined.

The Medicaid Program

On July 30, 1965, Congress enacted Title XIX of the Social Security Act which established the Medicaid Program. The program was designed to provide medical assistance to certain low-income individuals and families whose resources and incomes were not adequate to pay for health care.

In 1968, Medicaid expenditures were \$3.5 billion; for Fiscal Year 1983, state and Federal Medicaid payments were expected to total \$37 billion. Medicaid has been called the "sleeper" of the Social Security Amendments; the program has grown at an unbelievable rate.

Two recent pieces of legislation have led to many changes in the Medicaid Program: The Omnibus Budget Reconciliation Act (OBRA) of 1981, and the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982. The laws allowed the states more flexibility in program management which has led to some major reforms in their Medicaid programs. In Kansas, the Home and Community Based Services Program waiver, begun in 1982, and the Primary Care Network waiver, begun in 1984, were both implemented as a result of TEFRA.

The Statewide Health Coordinating Council recommends that actions be taken to provide cost-effective and quality services and care to the state's Medicaid population. Recommendations are offered to: 1) promote appropriate and cost-effective services; and 2) expand the Primary Care Network pilot project.

1. Promote appropriate services. All Kansas counties should have home health and other community-based noninstitutional services. The Kansas Legislature, as well as local government agencies and public/private agencies, should continue to make allocations for projects which promote primary and long-term care service coordination for all elderly regardless of income.
2. Expand the Primary Care Network pilot project. The Department of Social and Rehabilitation Services, the Department of Health and Environment, and the Department on Aging, in addition to providers and consumers participating in the Primary Care Network, should be involved in evaluating the program. The PCN should be monitored to determine if the program is effective in reducing utilization of and costs for health care, and to determine that continuity and quality of care are being maintained.

Wellness Promotion/Disease Prevention

Since the turn of the century, a remarkable change has occurred in the population's health status. There has been a steady decline in morbidity and mortality rates for a number of acute and infectious diseases such as rheumatic fever, meningitis, small pox, diphtheria, tetanus, poliomyelitis, and tuberculosis.

Conversely, there has been a steady increase in morbidity and mortality rates for chronic disorders such as cardiovascular disease, cancer, cerebrovascular disease, diabetes mellitus, and liver diseases. Evidence now indicates that

at least half of all chronic disease deaths are closely linked to life-style choices.

The Statewide Health Coordinating Council recommends that the population's health status be improved through modified life-styles and that a lower demand for costly health services be achieved by increasing the availability and accessibility of health promotion and disease prevention programs. Policy recommendations are offered in two areas: 1) develop a comprehensive approach for primary prevention programs; and 2) develop a comprehensive approach for risk-reduction programs.

1. Develop a comprehensive approach for primary prevention programs. Activities to increase public awareness of chronic ill health problems and causal factors should be engaged in. Kansas colleges and universities that train grade K-12 teachers should develop the curricula necessary to support the development and implementation of complete health promotion and education activities in the school system. Substance abuse prevention should be established as one of the highest priorities of school age prevention programs, and existing state agency efforts in this area should be coordinated under a single, unified system easily accessed by the general public as well as organized education/other institutions and agencies.
2. Develop a comprehensive approach for risk-reduction programs. The Department of Health and Environment's PLUS Program concept should be expanded by augmenting existing staff efforts with the Department's community health consultants; additionally, consideration should be given to program expansion to reach school age children and youth. The Department of Health and Environment should continue to work with public health departments and employers to promote the Project VOTE concept. The Kansas Legislature should consider mandating nonsmoking areas in all public places, in child day care facilities, in health facilities, in public conveyances, and in schools and work places of 20 or more employees. Kansas communities should assume responsibility for promoting health education and screening through programs such as Kansas Health Fairs. Technical assistance should be available from the Department of Health and Environment and local health departments.

Accidental Injuries and Deaths

The American Medical Association has called accidental injuries and deaths the neglected diseases of modern society. Currently, accidents are the fourth leading cause of death both in Kansas and the United States; further, accidents are the leading cause of death for persons age one to 44.

National data indicate that 25 to 30 percent of the population are accidentally injured each year; this yields one accident every three seconds. In Kansas during 1981, 1,243 people died as a result of accidents. This yielded a ratio of 52 accidental deaths per 100,000 population; the 1981 United States ratio was substantially lower at 43.7 per 100,000. In general, accidental

death rates for Kansas have exceeded the national rate since the 1930's, when both reached their peak.

To an extent, accidental injuries and deaths will always be a problem for society. However, many accidents are preventable and thus unnecessary injuries and premature deaths could be avoided. The savings to the health care system would be realized in both financial and emotional terms.

The Statewide Health Coordinating Council recommends actions to reduce health care expenditures and prevent unnecessary suffering by decreasing the incidence of accidental injuries and deaths in Kansas. Policy recommendations are offered in two areas: 1) by 1990, the motor vehicle accidental death rate should not exceed 18 deaths per 100,000 population; and 2) modify the health care system to better meet the needs of severely traumatized accident victims, particularly those with head or spinal cord injuries.

1. By 1990, the motor vehicle accidental death rate should not exceed 18 deaths per 100,000 population. The Kansas legislature should give serious consideration to increasing the severity of drunk driving penalties. Items which should be debated include: dram shop liability; limitations on alcohol consumed for a set price; felony convictions for vehicular homicide; and evaluations of effectiveness and consistency of diversion programs. The Department of Health and Environment should work with the Kansas Highway Patrol, Department of Transportation, and other concerned groups to continue media campaigns on the value of using seat belts and infant car seats. The Department of Health and Environment should work with the Commissioner of Insurance to study insurance practices which would enhance motor vehicle safety.
2. Modify the health care system to better meet the needs of severely traumatized accident victims, particularly those with head or spinal cord injuries. The Department of Health and Environment should study the needs of persons handicapped by spinal cord or head injuries and develop appropriate plans. The Emergency Medical Services Council of the Department of Health and Environment should be encouraged to complete their statewide communication system.

Physicians and Health Care Costs

In 1981, Kansans spent \$469 million for physician services; this resulted in a per capita expenditure of \$197. Nationally, \$54.8 billion were spent for physician services, for a per capita expenditure of \$234. Both in Kansas and the United States, physician services represent the second largest category of total personal health expenditures (exceeded only by hospital services) and have consistently consumed approximately 20 percent of all personal health care expenditures.

Whereas large scale forces such as general inflation and population growth influence the economic behavior of the health care system, the physician has the authority to make direct and indirect decisions about the use of the

majority of health care resources. Studies indicate that between 70 and 90 percent of all health care expenditures are initiated or controlled by physicians. Given the societal mandate to gain control of spiraling health care costs, physicians are finding themselves in the center of the financial challenge.

The Statewide Health Coordinating Council recommends that physician services in Kansas should be adequate to meet the population's need for quality, cost-effective care. Policy recommendations are offered in three areas: 1) strengthen the state's medical education system's efforts to address physician knowledge; 2) maintain medical reviews of service utilization to assure that appropriate care is provided; and 3) by 1990, increase the supply of primary care physicians to 73 per 100,000 population, and the supply of total physicians to 151.7 per 100,000 population.

1. Strengthen the state's medical education system's efforts to address physician knowledge. The University of Kansas School of Medicine should continue to work with the Long-Term Care Gerontology Center to provide medical students with geriatric education. The University of Kansas School of Medicine should develop and mandate education curricula for medical students which emphasizes medical economics and health care cost containment. The University of Kansas School of Medicine, the Kansas Medical Society, and the Kansas Osteopathic Association should increase efforts in primary care education. The Kansas Hospital Association, Kansas Medical Society, and professional laboratory/medical technologist organizations should work together to assist in redesigning hospital laboratory test order forms to stress problem-oriented utilization.
2. Maintain medical reviews of service utilization to assure that appropriate care is provided. All health insurers (private insurers, the Kansas Medicare intermediary, and the Kansas Medicaid program), should develop and/or maintain review procedures related to the utilization of ancillary services.
3. By 1990, increase the supply of primary care physicians to 73 per 100,000 population, and the supply of total physicians to 151.7 per 100,000 population. Physician practice in rural areas should be enhanced through maintenance of three area health education centers. The Kansas Medical Scholarship Program should make the majority of funds available to students who plan to enter primary care practice in underserved, rural areas of Kansas.

Ambulatory Surgery

The health care delivery system challenge of the 1980's is to provide high quality care in the most cost effective setting possible. To this end, attention is increasingly focused on various forms of ambulatory care as alternatives to inpatient hospital care. Ambulatory care, broadly defined, includes primary care, hospital outpatient care, ambulatory and neighborhood health clinics, emergency room services, and ambulatory surgery. Although

each type of ambulatory care has been studied during the last decade, ambulatory surgery proposals have perhaps generated the most interest.

It is widely recognized by the medical community today that a large percentage of surgical cases do not require hospitalization. Thus, ambulatory surgery is hailed as a viable cost containment proposal. However, to be of value, plans for expansion of any ambulatory service must be viewed as an integrated part of the health care system. Concerns also exist because of the potential for service duplication.

The Statewide Health Coordinating Council recommends that ambulatory surgery programs in a variety of settings be promoted to prevent expenditures related to unnecessary inpatient surgery and hospitalization. Policy recommendations are offered under the following objective: The development of new or expansion of any existing ambulatory surgical capacity, regardless of setting, should be covered by the Kansas Certificate of Need program.

Certificate of Need applications for the addition of any new surgical capacity regardless of setting in a service area should take into consideration: a) quality of existing and proposed services; b) utilization of all surgical capacity in the service area; c) a service area population of at least 75,000 people within 30 minutes traveltime; and d) short-term and long-term health care service availability and cost impacts of proposed projects. Ambulatory surgical capacity should be monitored on a yearly basis and the status of the program and its impact on inpatient surgery services should be evaluated.

LONG-TERM CARE

Long-term care refers to any professional or personal service required on a recurring or continuous basis by an individual because of chronic or permanent physical and/or mental impairments. Three population groups may generate substantial long-term care needs: the 65 and older population, which has grown from four percent of the population in 1900 to almost 13 percent in Kansas in 1980; the developmentally disabled; and the chronically mentally ill. The ultimate goal of the long-term care system is to promote optimal physical, social, and psychological functioning by assisting individuals to cope with disabilities and live as independently and normally as possible.

A variety or "continuum" of long-term care services are needed if the goal is to be realized. Services in the long-term care continuum should be available in a variety of settings (home, community agency, institution, and other), and may be delivered by a number of providers ranging from family and friends to paid professionals. An analysis of the long-term care continuum in Kansas indicates that three major problems exist.

- There are service gaps in the continuum. With the exception of intermediate nursing home care, few long-term care services are widely available across the state. A core set of services has been identified and described as being essential in the provision

of continuum services. The core services include: income programs, home health, homemaker services, meal programs, day care, transportation services, nursing home care, hospital care, alternative housing, and case management/service coordination mechanisms.

- Reimbursement for long-term care services has been biased in favor of medical/institutional care. Because competition for resources is increasing, service needs were examined by the urban/rural geography of Kansas to shift planning emphasis away from the medical bias toward a more comprehensive approach.
- Over 50 types of services are part of the long-term care continuum. Given the almost confusing array of services, a coordinating mechanism is needed to enhance access to services. Several elements of case management are described, including: client identification, evaluation, care plan development, and plan implementation.

The Statewide Health Coordinating Council proposes that actions be taken in three areas to assure the provision of a long-term care continuum in Kansas: 1) eliminate service gaps, 2) promote continuum quality, and 3) special population needs.

1. Eliminate Service Gaps. Kansas communities must assume responsibility for developing plans concerning their ability to provide formal and informal services. The Kansas Legislature, as well as local government agencies and public/private agencies, should help finance the development of core services in unserved areas, and should sponsor innovative projects which promote service coordination. State government agencies involved with long-term care should work together to develop statewide program implementation plans. Finally, the moratorium on nursing home construction or expansion should be continued to prevent undue emphasis on institutional resources.
2. Promote Continuum Quality. Increased knowledge and understanding offer the greatest potential for ensuring that the long-term care system functions in a high-quality manner. All health providers should have greater exposure to geriatric care concepts during training and through continuing education courses. Public information programs should also be directed at the general population.
3. Special Population Needs. Developmentally disabled and chronically mentally ill adults in need of general supervision should have access to facilities designed to meet their needs and should not be placed in facilities designed for the frail and ill elderly.

ENVIRONMENTAL/HEALTH DATA

In Kansas, and in the nation as a whole, citizens are becoming increasingly aware of the association between environmental contaminants and adverse health effects. Every year, Congress hears an increasing outcry for stricter

enforcement of air and water quality controls. There are now thousands of citizen claims being filed for compensation for health problems due to exposure to Agent Orange, diethylstilbestrol (DES), asbestos, formaldehyde, and other substances. A number of environmental health issues in Kansas have become increasingly evident in recent years.

- There are several areas around the state where surface water and/or groundwater supplies are contaminated with heavy metals, hazardous wastes, or salt. Approximately 80 percent of all Kansans rely on groundwater as their major source of water for all purposes; this is the highest population percentage in the nation. In some water-contaminated areas, high rates of tuberculosis, infant mortality, and lung cancer have been noted.
- As a state highly dependent on agriculture, pesticide usage is common. Although the health effects of the over 32,000 pesticide products are basically unknown, it is known that pesticides remain in the environment for many years and their impact may be latent and synergistic. In 1981, the Kansas Fish and Game Commission reported that eight fish kills (over 25,000 fish) were attributable to pesticides.
- Chronic occupational disease is becoming a major health problem in industrialized society. There are over 60,000 synthetic chemicals in production today, and each year 500 to 1,000 additional substances are produced. Absolute knowledge of their effects is often minimal because research cannot keep pace with the rapid introduction of chemicals into industrial settings and ultimately the environment. It is known, however, that certain occupations do have higher than normal cancer rates and pregnant women employed by specific industries are more at-risk than other population groups.

The Statewide Health Coordinating Council recommends that Kansas expand and improve its capacity to respond to environmental health conditions and to research the impact of environment on public health. Policy recommendations are offered in three areas: 1) toxics management data system, 2) toxicology, and 3) environmental health training.

1. Toxics Management Data System. To establish the data base needed, the Department of Health and Environment should help establish a statewide registry of toxic substances and a pesticide monitoring system, both of which should be integrated with health-related information. The system should ultimately serve as a source for evaluating existing and potential environmental health conditions, and provide awareness and protection for Kansans.
2. Toxicology. The Toxicology Unit of the Department of Health and Environment should work with other state agencies, state universities, federal agencies, and local health departments to identify and respond to environmental health conditions in the state.

3. Environmental Health Training. Health care practitioners, students, and any other professionals involved with human or animal life should be trained in identifying health problems due to environmental exposure. The cooperation of local health departments in this endeavor is encouraged.

AVAILABILITY OF PRIMARY CARE

Primary care is an essential set of health services, providing early detection and treatment for a majority of the health problems of the population. In recent years, Congress has identified the provision of primary care services, especially in medically underserved rural and economically depressed areas, as a priority issue to be addressed. One important element in the provision of primary care services is the availability of physician manpower (doctors of medicine and osteopathy).

- The supply of full-time primary care physicians in Kansas has increased by 13 percent in just four years; from 50.8 per 100,000 population in 1978 to 57.4 per 100,000 in 1982. By 1990, if present trends continue, Kansas will show an overall surplus of physicians and a deficit of full-time primary care physicians of just 2.4 per 100,000, or 3.3 percent. As supply rapidly improves, geographic maldistribution can be expected to remain the major issue regarding availability of primary care in Kansas.
- Over one-third of Kansas' counties fall below 36 full-time physicians per 100,000 population, a ratio just one-half the optimal ratio of 73 per 100,000. Moreover, 28 counties are below 33.3 per 100,000 (one physician per 3,000 people), a threshold indicating severe need for primary care physicians.

The Statewide Health Coordinating Council has set a target of 73 full-time primary care physicians per 100,000 population by 1990. In 1982, there were 57.4 primary care physicians per 100,000 population. To achieve this objective, three areas for action are identified: 1) physician recruitment, placement, and retention; 2) rural professional enhancement; and 3) physician residency guides. In developing its recommendations, the Council recognizes the role performed by physician assistants and nurse practitioners in providing primary care, especially in underserved areas.

1. Physician Recruitment, Placement, and Retention. The University of Kansas College of Health Sciences, Department of Health and Environment, and Department of Economic Development have worked cooperatively for several years to provide technical assistance to local community and professional organizations seeking to recruit physicians. Since the program's inception in 1978, over 100 physicians have been recruited and placed in more than 75 Kansas communities. This program should be maintained and strengthened.

The Kansas Medical Scholarship program, the similar Board of Regents Scholarship Program, and the Medi-Serve Program now have the capability to add 75 to 100 physicians per year to underserved areas in Kansas over the next seven years. Approximately 30 such physicians now are practicing in Kansas.

2. Rural Professional Enhancement. The University of Kansas College of Health Sciences has worked with the communities of Hays, Chanute, and Garden City to establish area health education centers to provide professional support for rural health care providers. This decentralized approach to health science education should be maintained as it provides needed professional linkages for recruitment of new providers and supports efforts to geographically integrate and coordinate services.
3. Physician Residency Guides. To prevent an increasing oversupply of secondary and tertiary care specialists, demonstrated need for these practitioners should be used as a guide for the number of residency opportunities.

NURSING RESOURCES

Registered nurses and licensed practical nurses play major roles in the health care system, as half of all health care personnel provide nursing-related services. Both nationally and in Kansas, many health worksites have a difficult time recruiting and retaining qualified nursing personnel. In extreme cases, health facilities have closed portions of existing facilities and/or delayed opening new facilities. The health consumer/patient may be adversely affected if timely and emotionally supportive care are delayed due to personnel shortages, and to the extent that facility charges are increased to cover nurse recruitment costs. There appear to be several reasons for the difficulties in recruiting and retaining nurses.

- A growing body of nurses are vocalizing dissatisfaction with their careers. Issues cited include: misuse of professional time by physicians and health facility administrators who do not understand the assessment, treatment, and patient education roles nurses are trained to assume; hours of work which are incompatible with social and family life; salaries which are below many nonprofessional occupations; overwork due to staff shortages and increasing paper work requirements; lack of career mobility; and "burn-out" due to physical and mental stresses of the job.

- The supply of full-time equivalent, active nurses fell short of meeting the health care needs of Kansans by over 2,880 registered nurses and 820 practical nurses in 1981. By 1985, the statewide shortage only will decline slightly. Hospitals and nursing homes experience the most acute shortages; this is a result of the increased utilization of hospital care, greater emphasis on out-patient care, a growing population age 65 and older, and the institutional 24-hour per day responsibility in these worksites. The supply of nursing personnel in rural areas is also short.

Despite claims that nurses are leaving their profession in great numbers, this does not appear to be occurring in Kansas. Almost 80 percent of the licensed registered nurses in Kansas are actively employed, as compared with 77 percent nationwide. Further, the activity status for nurses exceeds the work status for most allied health professions and for college educated women. The Statewide Health Coordinating Council recommends that actions be taken in three areas to ensure that the Kansas population's need for nursing services is adequately met: 1) maintenance of 80 percent activity status, 2) enhancement of geriatric and rural health care, and 3) student support.

1. Maintenance of 80 Percent Activity Status. Health sector employers and nurses in Kansas must assume the responsibility for working together to retain active nursing personnel. Options which should be explored include: part-time, flexible scheduling; improved communication and decision-making processes; attaining and retaining adequate salary schedules and fringe benefit packages; developing career mobility pathways; cooperative recruitment; more appropriate utilization; and improvements in the nursing media image. Further, efforts should be made to organize and coordinate refresher programs for inactive nurses, as well as continuing education programs for active nurses. Innovative projects which will provide further information on the profession are encouraged.
2. Enhancement of Geriatric and Rural Health Care. The supply of nursing personnel in rural areas is critically short, and statistics indicate that few nursing graduates enter nursing homes. Nursing school curriculum requirements should be reevaluated to increase content and practical opportunities in these areas. Teaching nursing homes are encouraged.
3. Student Support. Declines in the number of high school graduates, federal Nurse Training Act funds, and other programs which help finance nursing education have played some role in declines being experienced in nursing school admissions. A state-sponsored loan forgiveness program should be established to encourage students to enter the nursing field and to seek employment in Kansas hospitals and nursing homes. The private sector is also encouraged to provide loans and scholarships to students. Special consideration should be given to licensed practical nurses who are interested in becoming registered nurses.

ACUTE CARE HOSPITALS

The hospital industry in Kansas is a large and significant part of the Kansas economy. Expenditures for care in nonfederal, short-term hospitals amounted to 3.5 percent of the Gross State Product in 1981; over 36,500 full-time equivalent personnel were employed by the hospitals. There are several reasons why hospitals warrant study as a health planning issue.

- Total expenditures for hospital care in Kansas equaled \$1.17 billion in 1981, a substantial increase over the \$151 million expended in 1966. Spending for hospital services made up 48 percent of all personal health care expenditures in 1981, compared to 40 percent in 1966. The increased expenditures were caused by general economy price increases, new and additional services provided to inpatients, and increased service utilization by the total population.

- Because hospitals which serve the same population do not necessarily coordinate the services they offer, duplicate services may exist in some communities while other service needs go unmet. In part, this is caused by a lack of economic pressures for efficiency, and social factors such as physician influence on hospitals and community pride in being "medically self-sufficient."
- There is an apparent excess of over 1,350 hospital beds in Kansas. The oversupply can lead to increased costs because of low facility utilization or to unnecessary utilization encouraged by available capacity.
- In 1981, the average expense per hospital admission in Kansas was \$2,243. It is thought that at this level of expense, some persons will not seek and will not receive needed hospital care because they do not have the personal resources or a third-party policy which will be responsible for their hospital expenses.

In order to prevent unnecessary increases in hospital costs while assuring that appropriate, high-quality services are provided to the population, the Statewide Health Coordinating Council has made policy recommendations in three areas: 1) cost-effectiveness, 2) service utilization, and 3) service planning.

1. Cost-Effectiveness. The performance of existing cost-containment programs should be monitored, and recommendations for necessary changes or refinements should be made.
2. Service Utilization. As discussed in the Health Care Costs Section of the State Health Plan, the general concepts of admissions review, concurrent review, and medical care evaluation studies should be extended to all acute care hospital patients regardless of their source of payment. Further, programs which may help reduce the need for and utilization of costly inpatient hospital services should be encouraged; examples include health promotion programs, prepaid alternative delivery systems, and appropriate outpatient services. Studies should also be directed toward determining the extent and possible causes of barriers to hospital care for some Kansans.
3. Service Planning. Institutional and interinstitutional planning activities are encouraged in order to avoid duplicative and unnecessary development of hospital facilities and services. Health planning actions should also be directed toward developing incentives to reduce the apparent excess of hospital beds, including exploration of regulations, legislation, and/or procedures which would encourage alternate uses of hospital facilities.

MATERNAL AND INFANT CARE

In order to assure optimal pregnancy outcomes, the provision of timely, appropriate, and high-quality services for the mother and infant are essential. During the 20th Century, it is apparent that great gains have been

made in this area. Infant death rates in Kansas have declined from approximately 65 deaths per 1,000 live births in 1926 to 11.0 deaths per 1,000 live births in 1981; nationally, the infant death rate was slightly higher in 1981, at 11.7 deaths per 1,000 live births. Maternal death rates have also declined from approximately 65 deaths per 10,000 live births in 1926 to virtually none in recent years. While these trends are impressive, there are still further improvements which can be made among high-risk populations.

- Appropriate prenatal care is essential. This includes maintenance of a nutritional diet and avoidance of substances potentially harmful to the fetus. Prenatal care may also serve to identify potentially high-risk patients. The absence of proper prenatal care is associated with the delivery of low birth weight infants, which in turn correlates with higher fetal mortality. Other characteristics which correlate with potentially at-risk cases include: racial/ethnic minority identity, age, marital status, and geographic residence of the mother; and factors such as previous history of pregnancy loss, short gestation period, and inter-pregnancy interval of under six months.
- Care received during and after delivery is also a determinant in pregnancy outcomes. National experts recommend a system of regionalized care; three hospital obstetrical levels are proposed, with Level I providing routine care and Levels II and III providing for complicated cases. All facilities and professionals involved with maternal and infant care must be integrated into the system to assure appropriate pregnancy management. This is especially important given the often random and nonscheduled timing of obstetric admissions and fluctuations in the numbers of births.
- The popularity of family-centered maternity and newborn care has grown in recent years. More fathers are present at deliveries and the importance of early parent-child bonding is emphasized. Hospitals are attempting to change regulations so that the care provided is more acceptable to the family unit.

The Statewide Health Coordinating Council proposes that pregnancy outcomes may be improved by addressing: 1) access to prenatal care, 2) regional perinatal care, and 3) acceptability of care.

1. Access to Prenatal Care. Federal and state dollars for prenatal care programs should be directed toward high-risk black populations in urban areas, high-risk populations in geographically underserved areas, and adolescent populations. Health education in the schools and public and private agencies should emphasize the importance of prenatal care. The supply of physicians should be monitored to evaluate access to primary care and obstetrical doctors, and continuing education for physicians, as well as all other health providers should emphasize recognition and management of high-risk pregnancies.
2. Regional Perinatal Care. To promote appropriate utilization of hospital services, Level II centers should achieve a minimum of 65 percent

occupancy with 500 deliveries annually, and Level III centers should achieve 75 percent occupancy with 1,500 deliveries annually.

3. Acceptability of Care. The Kansas Department of Health and Environment should continue to consult with hospitals to provide family-centered care, when safe for the mother and child.

COMPUTED TOMOGRAPHIC SCANNERS

Computed tomographic (CT) scanning combines X-ray equipment with computers to produce cross-sectional images of the head or body. The first CT scanner in the United States was installed in 1973 and had only head scanning capabilities. Since that time, CT scanners have changed substantially and now have full-body scanning capabilities as well as shorter scanning times. Although the potential of body scanners is still being explored, the CT scanner has established itself as a diagnostic device of remarkable usefulness by providing accurate diagnoses of some conditions and improving the safety and comfort of patients when used in place of older, invasive diagnostic methods.

The policy direction for CT scanners, both nationally and in Kansas, has been to ensure the availability of medically necessary scanning services at the lowest possible resource commitment. Several factors, however, complicate the situation.

- Nationwide and in Kansas, there has been a strong desire to acquire CT scanners. In 1982, the Department of Health and Environment reviewed eight Certificate of Need requests for CT scanners; six were approved. The number of CT scanners in Kansas now equals 24. A potential for underutilization exists and is a concern since much of CT scanning costs are fixed; the cost per procedure is affected by the total number of procedures performed by each scanner.
- CT scanning services have not been consistently or systematically monitored to ensure that only medically necessary and appropriate usage is occurring. The appropriateness of CT services is difficult to define and evaluate. Unnecessary utilization can lead to false assumptions that additional capacity is needed, and it can delay necessary and timely access to the service for some patients. Information on the current utilization of existing scanners, whether based in or out of hospitals, is also necessary to assist in determining the need for future scanning services, as well as information on the clients served by CT scanners.
- Quality and continuity standards are fundamental to the provision of CT scanning services. As CT scanning availability expands from tertiary to secondary care service areas, standards are needed to ensure that appropriate staffing, facilities, and support services are in place.

The Statewide Health Coordinating Council recommends that actions be taken in three areas to ensure the appropriate provision of CT services in Kansas: 1) scanner supply guidelines; 2) continuity, quality, and efficient utilization; and 3) necessary data collection.

1. Scanner Supply Guidelines. Community need for CT scanning services should be documented through the Certificate of Need Program. Scanners should operate at a minimum of 4,000 HECT scans per year for the second year of operation and thereafter, or before additions or replacements occur in a service area. Exceptions may be allowed for areas with a high proportion of medically underserved elderly, pediatric, or trauma patients who require scanning, or in rural areas where travel time is a serious hardship.
2. Continuity, Quality, and Efficient Utilization. Facilities offering the service must have existing medical capabilities, including professional and paraprofessional personnel, which complement the CT service. Utilization review for CT services should occur for all patients regardless of the source of payment. Professional education should emphasize the importance of efficacy, effectiveness, and efficiency considerations in CT medical practice.
3. Necessary Data Collection. Data collectors in Kansas should explore the specifics of developing the ability to retrieve information on the use of all CT scanners, and the demographic and diagnostic characteristics of CT patients.

MENTAL HEALTH SERVICES

Mental health represents a continuum. At one end is a state of wellness in which an individual is able to achieve a balance between the positive and negative forces that are in play in all aspects of life. At the other end is a state of mental disorder or illness which leaves individuals unable to function effectively and relate to others in a meaningful way. Concern for the widespread impact and high cost, both personally and financially, of mental health problems which affect an estimated 15 percent of the population has made mental health services a priority issue at the federal, state, and local levels. Given a body of increasing knowledge about the dynamics of mental health, a movement toward deinstitutionalization of chronic mentally ill persons, and concerns for treatment in the least restrictive setting, the current service delivery system has been found to be insufficient.

- Public and private insurance reimbursement policies have traditionally favored inpatient care and do not promote prevention, early identification, or noninstitutional alternatives. One result is that Kansas appears to have a more than adequate supply of psychiatric inpatient beds.
- The special needs of the chronically mentally ill, elderly, young people, racial and ethnic minorities, and victims of family and sexual abuse are sometimes not met by the current service system.
- Coordination between mental health services, and between medical, legal, and social services is often weak. Given that many persons fear the stigma associated with admitting and seeking help for a mental health problem, the lack of coordination among services may frustrate many persons in need of care and treatment.

- Basic data to monitor and evaluate the performance of the mental health delivery system are not available.

With the goal of providing a coordinated continuum of appropriate social, psychological, and medical services for mental health clients, the Statewide Health Coordinating Council recommends: 1) development of a model delivery system, and 2) improvement of the mental health system data base. Given federal and state fiscal policies which will ultimately reduce the amount of funds available for mental health care, the need to improve the efficiency of the mental health delivery system is evident.

1. Development of a Model Delivery System. A model service delivery system for the severely mentally ill should be developed. The system should: a) conduct an assessment of the client's total needs, including but not limited to, needs for treatment, shelter, food, education, personal support networks, employment, income, and recreation; b) determine the most appropriate means for meeting the client's total needs; and c) develop an individualized service program including arrangements for service delivery and progress monitoring. The current Partnership Agreement for the Continuity of Treatment (PACT) Program may serve as the vehicle for implementing the model system. The Department of Social and Rehabilitation Services and interested psychiatrists, psychologists, social workers, the Kansas Hospital Association, and others should be involved. Once the model system is in place for the severely mentally ill, it should be expanded to include all mental health clients.

Undue emphasis on inpatient/institutional care should be avoided. The Certificate of Need Program should review applications for psychiatric inpatient beds taking into account: beds available, occupancy of existing beds, and other mental health continuum services available.

2. Improvement of the Mental Health System Data Base. To eliminate gaps in the mental health system data base, epidemiologic studies should be conducted to determine the nature and extent of mental health problems in the state. Special emphasis should be placed on behavioral evaluations which would help determine the need for community-based facilities which would serve as alternatives to institutional care.

SUBSTANCE ABUSE SERVICES

Substance abuse is the nonmedical use of any drug or alcohol in such a way that it adversely affects some aspect of the user's life. The abuse may be intentional or unintentional; it may involve legal or illegal substances. There are estimated to be 142,000 problem drinkers and 110,000 high-risk drug abusers in Kansas. The personal and financial costs of substance abuse can be substantial. Many traffic fatalities, suicides, homicides, and fatal accidents are related to substance abuse. Lost productivity through absenteeism, unemployment, and death amounts to billions of dollars annually. Children are also innocent victims of abuse and neglect related to familial substance abuse.

When substance abuse was first recognized as a serious social problem, the service response to the needs of the abusers was neither planned nor orderly.

Substance abusers were often removed from their natural environment and placed in highly structured environments for treatment. In recent years, emphasis has been placed on a continuum of care which encompasses prevention and treatment services, and utilizes outpatient services as the focal point of the system. Although admissions to substance abuse programs are increasing, barriers do exist which restrict the development and utilization of a full range of services.

- Substance abuse services are provided by a wide range of agencies and facilities, including hospitals, mental health centers, state psychiatric facilities, freestanding programs, self-help groups, and others. Lack of coordination due to philosophical differences, geographic location, and funding sources all contribute to problems for the client in need of coordinated services, which may also include job training and social services.
- Social stigmas still prevent many persons from seeking help. This may be due to feelings of failure, fear for personal reputation, and use of illegal substances.
- Service needs of special populations, including young people, the elderly, women, and racial/ethnic minorities are frequently not recognized.
- Private insurance policies do not address substance abuse service needs in a comprehensive manner.

With the goal to reduce the personally destructive and socially disruptive effects of substance abuse, the Statewide Health Coordinating Council made recommendations regarding: 1) continuum of care, 2) funding, and 3) service provider education.

1. Continuum of Care. Prevention/education programs are encouraged as a vital part of the substance abuse continuum because they act as a means of intervention before more costly treatment services are needed. Outpatient services also are stressed so that clients may remain in the family, community, and/or work setting while receiving treatment. Inpatient services are a part of the continuum where Certificate of Need reviews are needed to prevent unwarranted growth.
2. Funding. At the federal level, funding for alcohol and drug abuse services has been combined in a block grant with mental health services. The Kansas Legislature is encouraged to eliminate the separation between state funds for alcohol and drug abuse services, to permit more flexibility in funding allocations of scarce treatment resources.
3. Service Provider Education. Substance abuse identification, intervention, and referral training programs for medical and social service providers should be expanded. Training programs should also be developed for substance abuse and other service providers to ensure that the prevention, early identification, and treatment needs of young people, the elderly, women, and racial/ethnic minorities are adequately met.

OTHER STATEWIDE HEALTH COORDINATING COUNCIL AND
OFFICE OF HEALTH AND ENVIRONMENTAL PLANNING ACTIVITIES

HEALTH CARE EXPENDITURES IN KANSAS

Rising health care expenditures are a major cause of concern in Kansas and the nation. The Office of Health Planning, Kansas Department of Health and Environment, annually produces a document which is designed to monitor trends in health care expenditures for Kansas and the United States. Some of the data items contained in the documents include total outlays and per capita expenditures for health services and supplies, major categorical distributions of the expenditures, and sources of health care funding. Because data are available beginning with Fiscal Year 1966, it is possible to examine changes in health care spending since passage of Medicare and Medicaid legislation.

The following highlights, taken from the 1982 Health Care Expenditures Report, underscore the importance of this topic.

- Kansans spent \$2.9 billion in 1982 for all health services and supplies, up 12 percent from 1981. This amounted to \$1,186 per capita.
- 1982 health care spending contributed 9.0 percent of the Gross State Product, an increase over the 1981 share of 8.5 percent.
- Kansans spent \$1,096 per capita for personal health care services in 1982, compared to \$1,216 nationally. Per capita spending is now 90 percent of the United States level compared to 92 percent in 1981.
- Kansans spent \$540 per capita for hospital care in 1982, compared to \$574 nationally. Hospital care accounted for the largest share, 49 percent, of 1982 personal health care spending in Kansas. Since 1975, the rate of spending for hospital services has grown faster in Kansas than the national rate.
- Since 1966, nursing homes have shown the most growth in health care expenditures nationally and in Kansas. Per capita spending in Kansas increased from \$5.55 in 1966 to \$108 in 1982.
- In 1982, \$1,061 million were spent for personal health services under public programs in Kansas. The Medicare Program contributed the largest share of public spending in Kansas amounting to \$512 million in 1982. The Medicaid Program contributed the second largest share of public funds amounting to \$268 million in 1982.
- The federal government funded nearly 30 percent of all personal health care services nationally and in Kansas in 1982, compared to only about ten percent in 1966. The federal government funded 40 percent of all hospital care nationally and 44 percent in Kansas in 1982.
- In 1982, out-of-pocket spending by consumers accounted for about one-third of all outlays for personal health care nationally and in

Kansas, a notable decrease from the half contributed by consumers in 1966.

Many changes are taking place in federal policies which will affect health care programs in the future. The changes include a movement toward block grant programs with greater state control, and reduced funding levels. It will be important to continue to monitor and analyze the impact of these initiatives on health care expenditures.

KANSAS MEDICALLY UNDERSERVED AREAS

As part of the Medical Scholarship Program enacted by the 1978 Kansas Legislature, the Secretary of the Department of Health and Environment is directed to prepare annually a list of areas in the state which are medically underserved with regard to doctors of medicine and osteopathy. As part of the report, the availability of primary care physicians, 11 categories of secondary physician specialists, and six categories of tertiary physician specialists in the state are compared with optimal physician-to-population ratios. The resulting designation of areas where the current availability is substantially below the optimal ratio serves as a guide in determining where scholarship physicians may fulfill their service commitments. In 1982, both critically underserved areas, as well as underserved areas, were designated, as required by legislative changes intended to show which areas in Kansas have severe needs for physicians.

The following information is summarized from the 1983 edition of the Kansas Medically Underserved Areas Report, the sixth annual document in this series.

- In 1983, Kansas showed a total of 3,083 full-time equivalent practicing, nonfederal physicians, a .98 percent increase from 1982. The greatest gain, as in past years, was in tertiary and secondary specialties. The tertiary speciality increased by six percent and the secondary speciality increased by .75 percent. The primary speciality decreased by less than one percent (.21). Thirty-seven counties were designated as underserved in primary care, compared to 36 in 1982. Thirty-three counties are considered critically underserved. Seventy-six secondary areas in 11 specialties were designated as underserved, 49 as critically underserved. In the six tertiary specialties, four areas were designated as underserved, three critically.

- Overall, Kansas shows about 130 full-time equivalent physicians per 100,000 population, about 535 full-time equivalent's short of the optimum of 151.7 per 100,000. During the rest of this decade, present trends indicate that the need for primary care physicians will continue but that the secondary and tertiary specialties will show surpluses. Disparities in distribution of physicians, particularly in primary care, persist, despite modest improvement in Kansas' smaller counties. To achieve further improvement will depend on appropriate distribution of scholarship recipients committed to underserved areas.

- As of June 30, 1983, 2,759 scholarships have been awarded to 1,584 recipients. Current projections show that fewer than 90 physicians per year are needed to reach optimum levels, with 31 per year needed in underserved areas and 15 per year in primary care. Thus, enough scholarships already have been given to have a substantial impact on physician supply and distribution in Kansas.

The preparation of this plan was financially aided through a federal grant from the Department of Health and Human Services.

WATER QUALITY REPORT

1984



Department of Health and Environment

Attachment C
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WATER QUALITY REPORT

1984

Man has always been dependent upon water to sustain life, however, this same human necessity has spread illness and disease. At its first meeting in 1885 the State Board of Health adopted rules and regulations for protecting public and private water supplies. In 1904, when the number of cases of typhoid fever reported had reached 1,000 with over 300 deaths, Dr. Samuel Crumrine, State Health Officer, urged legislation placing municipal water supplies and sewerage systems under the jurisdiction of state government. This was the beginning of state regulation of municipal water supplies and sewerage systems. In 1972, with passage of the federal Clean Water Act, a state - federal partnership to implement a national clean water program was initiated. Kansas now manages all but two of the federal Water Pollution Control Programs. Delegation of responsibility to the state as provided in the Clean Water Act is working and the state is carrying out:

- water quality monitoring
- water quality standards setting
- construction grants program administration
- permit issuance, and
- enforcement.

Congress invested \$316 million of the \$633 million spent over the last decade in Kansas on municipal waste treatment facilities. The primary emphasis during this period was construction of new and modification to existing municipal waste treatment plants. Attention is now turning more to sewage collection and transportation needs. During this same decade, Congress invested over \$10 million in state management assistance grants while state government appropriated over \$6 million in state funds. The purpose of this report is to focus attention on

the results of this program over the last decade. Great progress has been made, but, meeting the challenges of the future will require continued strong support of local officials, industry, and all of our citizens.

OUR RESOURCES

Kansas is a 200 by 400 mile rectangle located in the center of the 48 contiguous states. The primary water source is precipitation. Kansas receives an average of 27 inches of precipitation each year, ranging from 16 inches in the extreme west to 42 inches in the southeast. Runoff varies even more, ranging from less than one-tenth inch yearly in the west to over ten inches in the southeast. On the average, ten million acre-feet of water flows out of the state each year, but has varied from two million acre-feet in 1956 to a maximum of forty-three million acre-feet in 1951.

Kansas is between two contrasting regions. The eastern part of the state with its abundance of water is allied with the eastern region of the United States. The western part of the state is similar to the water deficient west. However, these conditions change from year to year. The entire state may have an abundance in one year and a scarcity of water in another year.

The total amount of fresh waters stored underground in Kansas has been estimated at 400 million acre-feet -- enough to cover the entire state with water seven and one-half feet deep. Geology accounts for the groundwater availability in Kansas. In humid eastern Kansas, the underground formations - mostly limestone and shale - yield little or no water, while in drier western and south central Kansas, underground deposits of sand and

gravel yield large amounts of water.

Kansans withdraw about six million acre-feet of water annually for municipal, domestic, industrial, irrigation, and other agricultural uses. In Kansas, eight out of ten gallons of water are used for irrigation. Only five states exceed the amount of water used for irrigation purposes. More than 65 percent of Kansas public water supplies rely on groundwater as their source of water supply. The quality of both groundwater and surface runoff is strongly influenced by natural conditions and man's activities. Climate and geology significantly influence the state's water quality.

Our Knowledge about Water Resources

- The state has approximately 20,000 miles of streams of which 580 miles are publicly owned (Kansas and Arkansas rivers).
- The state has 120,000 acres of publicly owned man-made impoundments.
- Approximately two-thirds of the state is underlain by a usable groundwater reserve of over 400 million acre-feet.
- The surface water problems of Kansas are diverse but are related to the basic problem of flooding on one extreme and insufficient runoff on the others extreme.
- Problems arise from extreme variations in occurrence of water in terms of geology, location, time distribution and quality.
- Groundwater reserves are subject to fluctuation in response to water usage, natural recharge, and natural discharge.
- Mining of groundwater reserves is occurring faster than they can be recharged.

SURFACE WATER QUALITY ASSESSMENT

The key word to Kansas surface water quality is variation. The findings of Kansas water quality assessment reflects this variation due to the extremes in runoff in any one year and location within the state. Streams in the eastern portion of the state exhibit evidence of continuous flow in normal years, whereas many streams in the west flow only after a cloudburst.

Our Knowledge has Increased about Streams

The Kansas water quality assessment study evaluated the surface water resources over the 18 years of record available. Each of the 62 basin segments of the 12 major drainage basins contain one or more locations where water quality samples are collected on a routine basis.

- Thirty years ago water quality data were collected at only 39 locations.
- Today 103 locations are sampled on a routine basis.
- The current monitoring network, with minor modifica-

tions, has been in place since 1965 (Figure 1).

- The network of sample locations is adequate to assess 90 percent of the main stem river miles and 42 percent of the tributary river miles.
- In the last 20 years, 6,400 samples were collected at 2,000 locations which resulted in over 1,000,000 pieces of information on water quality.

Pollution has Decreased

Pollution from municipalities, industry and feedlots has decreased despite increases in population, farmland in production, industrial development and feedlots. For those streams where data were available, a comparison was made between 1967-77 and 1978 to date. The water quality trend analysis shows:

- improvement at 58 percent of the locations for dissolved oxygen and fecal coliform bacteria, and
- improvement at 67 percent of the locations for ammonia.

More Designated Uses are Supported

Fecal coliform is used to measure support of recreation (swimming). Half the locations where fecal coliform criteria were exceeded were located along major rivers (Figure 2). No point source of pollution could be identified for a number of cases suggesting contamination from nonpoint sources or natural cases.

Dissolved oxygen and ammonia are used to define whether a stream would support fisheries. The locations not supporting fisheries in large part can be traced to point sources of pollution (Figure 3). The finding shows:

- 76 percent of the locations sampled will support swimming.
- 95 percent of the locations sampled will support fisheries.
- 90 to 95 percent of the locations will support agricultural uses of the water (Figure 4).
- 67 to 82 percent of the locations will meet primary drinking water criteria (Figure 5).

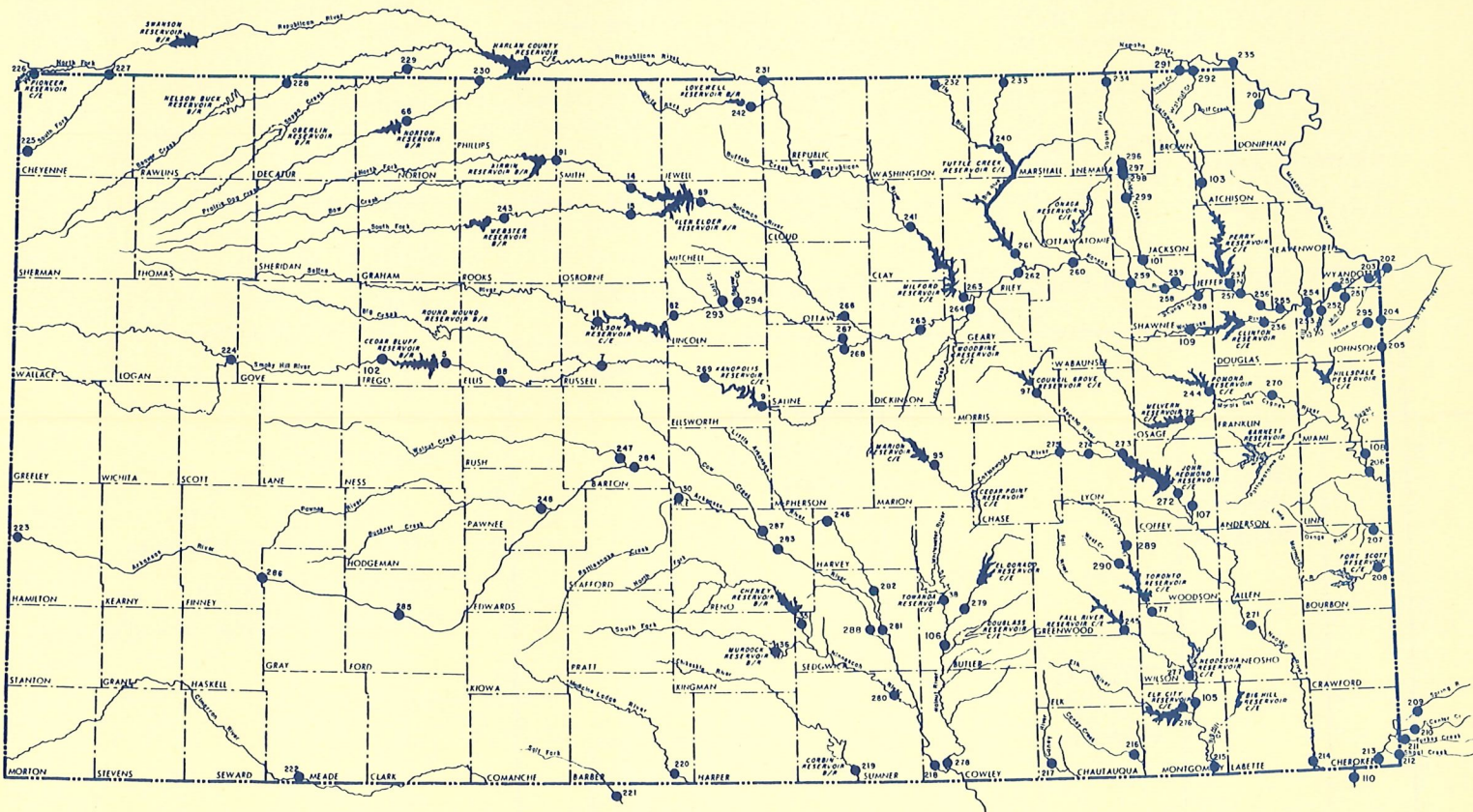


Figure 1 Surface Water Quality Sampling Network

SUBSTANTIAL PROGRESS HAS BEEN MADE IN CLEANUP

Substantial progress has been made in construction and operation of wastewater treatment facilities by industries, agriculture and municipalities. Limited progress has been made in the control of nonpoint sources, particularly with respect to soil erosion, naturally occurring mineral intrusion, and mining activities.

Wastewater Treatment

Although Kansas was a leader nationally in requiring waste treatment before the advent of the Clean Water Act, the provision of adequate municipal wastewater treatment has been one of the major accomplishments of the past decade. With an expenditure of \$280 per capita in Kansas for municipal sewage systems, improvement in water quality has been demonstrated in recent years. Of the approximately 2.4 million people in Kansas in 1982:

- 1.6 million people received acceptable levels of sewage treatment, an increase of 21 percent over 1972. Seventy-six percent of the state population, is served by treatment facilities.
- Over a half million people or twenty-one percent in the state do not need central treatment systems because they are adequately served by on-site disposal.

- During the decade, 37,000 persons were added to collector systems.

Upgrading the level of sewage treatment produces direct benefits by reducing pollutants discharged to the streams of the state (Figure 6). The most widely used measure of municipal pollution is the extent to which the treated waste organic content depletes oxygen in the receiving water, reducing the amount available to fish and other aquatic life. Municipal organic pollution decreased during the past decade. Oxygen-demanding pollutants reaching Kansas streams fell by sixty-three percent over the past decade. Over eighty percent of the oxygen demanding pollutants are discharged from Bonner Springs; Kaw Point Plant, Kansas City; and St. Paul. All have improvements under construction or are proceeding under a court decree. Completion of these projects will reduce the current organic load significantly.

Cost for improving municipal sewage treatment systems over the past decade totalled over \$633 million (Figure 7). The state and the U.S. Environmental Protection Agency determined in the 1984 Needs study that three quarters of a billion dollars are still required to bring municipal wastewater systems up to acceptable standards.

Industry has responded favorably to the mandates of the state

and federal water pollution control program during the past decade. Industrial dischargers have invested heavily to reduce their water pollution. Pollution abatement capital expenditures by industries with 20 employees or more amounted to \$53.2 million in 1982. Of this total, \$24.0 million was for air, \$17.8 million for water, and \$11.4 million for waste management. Annual capital investment for the previous five years was similar. The number of industries under the regulatory program has increased from 100 in 1972 to 330 in 1982. In 1982, of the 134 industries with state or federal permits, 88 percent complied all of the time with permit limitations compared to 48 percent 1972 if the same criteria had been used throughout the decade. The 1972 standards for discharging industrial wastes were significantly more lenient.

The most significant change in the waste treatment programs has been regulation of commercial feedlots in the State of Kansas. On January 1, 1982, there were approximately 6.2 million head of cattle and 1.8 million hogs in the state compared to 3.6 million cattle and 1.2 million hogs in 1950 (Figure 8). The large commercial feedlots began development in Kansas in the early 1950's. This number of animals produce wastes equivalent to that produced by a population of approximately 71 million people in 1982 compared to 45 million in 1950. The number of cattle in commercial feedlots increased from 2 percent in 1965 to 20 percent in 1982. Kansas presently ranks third in the United States in the number of cattle in feedlots.

OXYGEN DEMANDING POLLUTANTS GENERATED & DISCHARGED 1972-1982

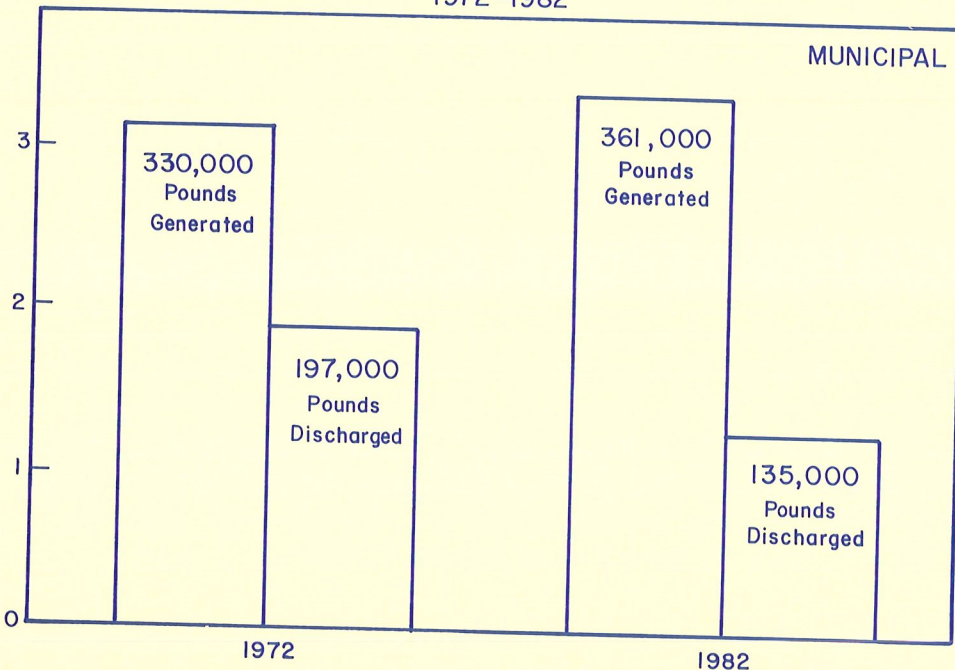
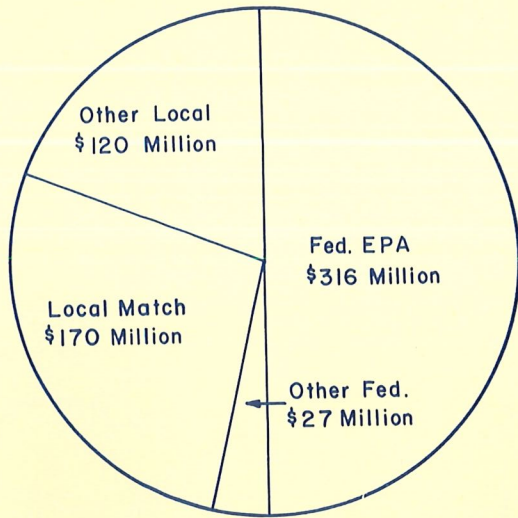


Figure 6

Effect of Municipal Waste Treatment Plants on Reducing Discharge of Pollutants



CAPITAL COST FOR MUNICIPAL SEWAGE TREATMENT - TOTAL \$633 MILLION 1972 - 1982

Figure 7 Who Is Paying The Cost Of Sewage Treatment

This report reviews the Kansas portion of a much larger, nation wide effort focusing attention on progress toward achieving the goals and requirements of the federal Clean Water Act. The assessment represents a cooperative effort of the Association of State and Interstate Water Pollution Control Administrators and the U.S. Environmental Protection Agency. Our staff participated in developing the format to derive and display the individual state responses.

OXYGEN DEMANDING POLLUTANTS GENERATED & DISCHARGED 1972-1982

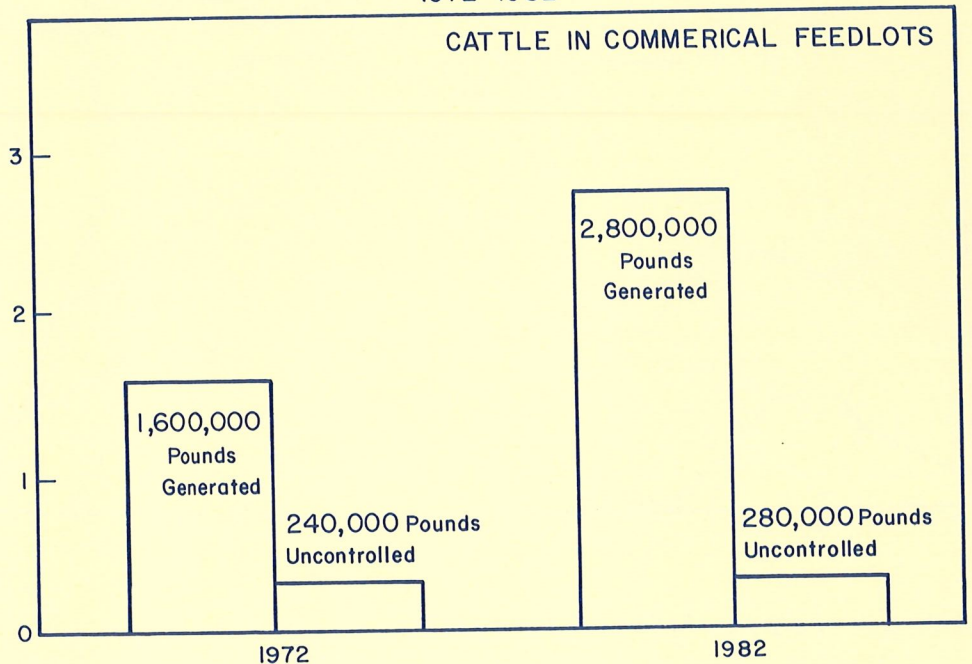


Figure 8 Effect of Waste Treatment Programs on Commercial Feedlot Discharge

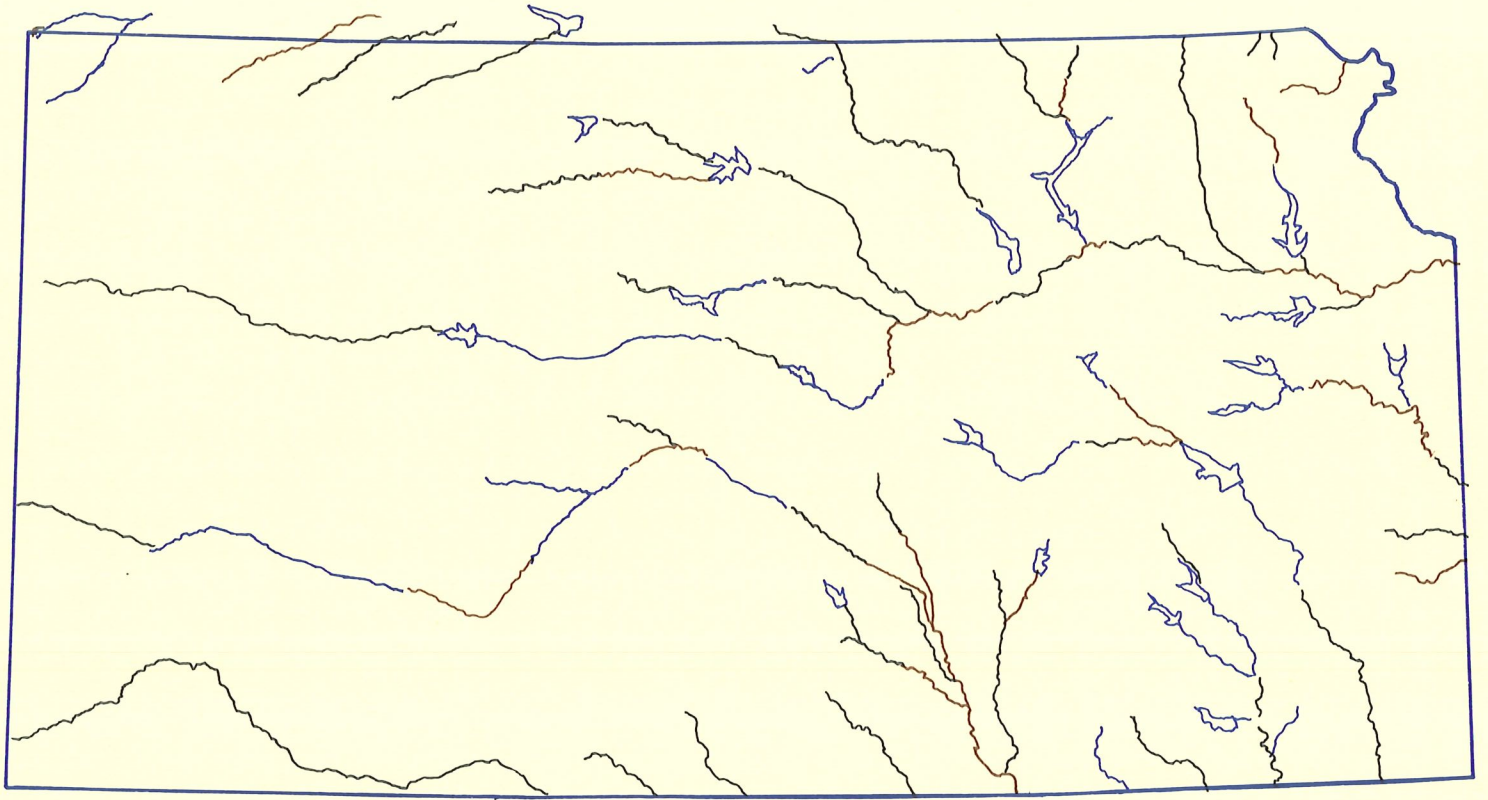


Figure 2 Recreation Assessment

high quality ———
moderate quality ———
low quality ———

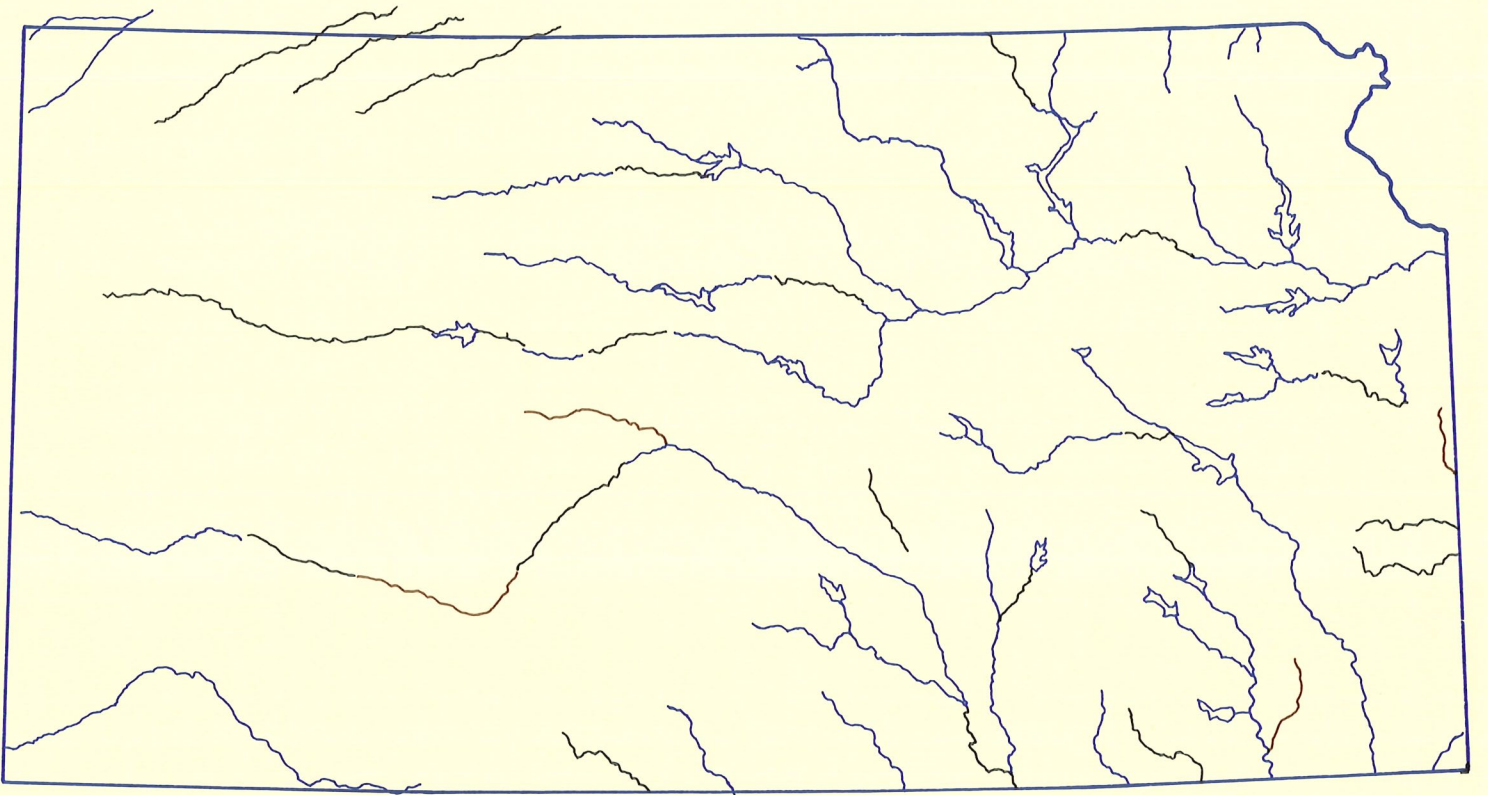
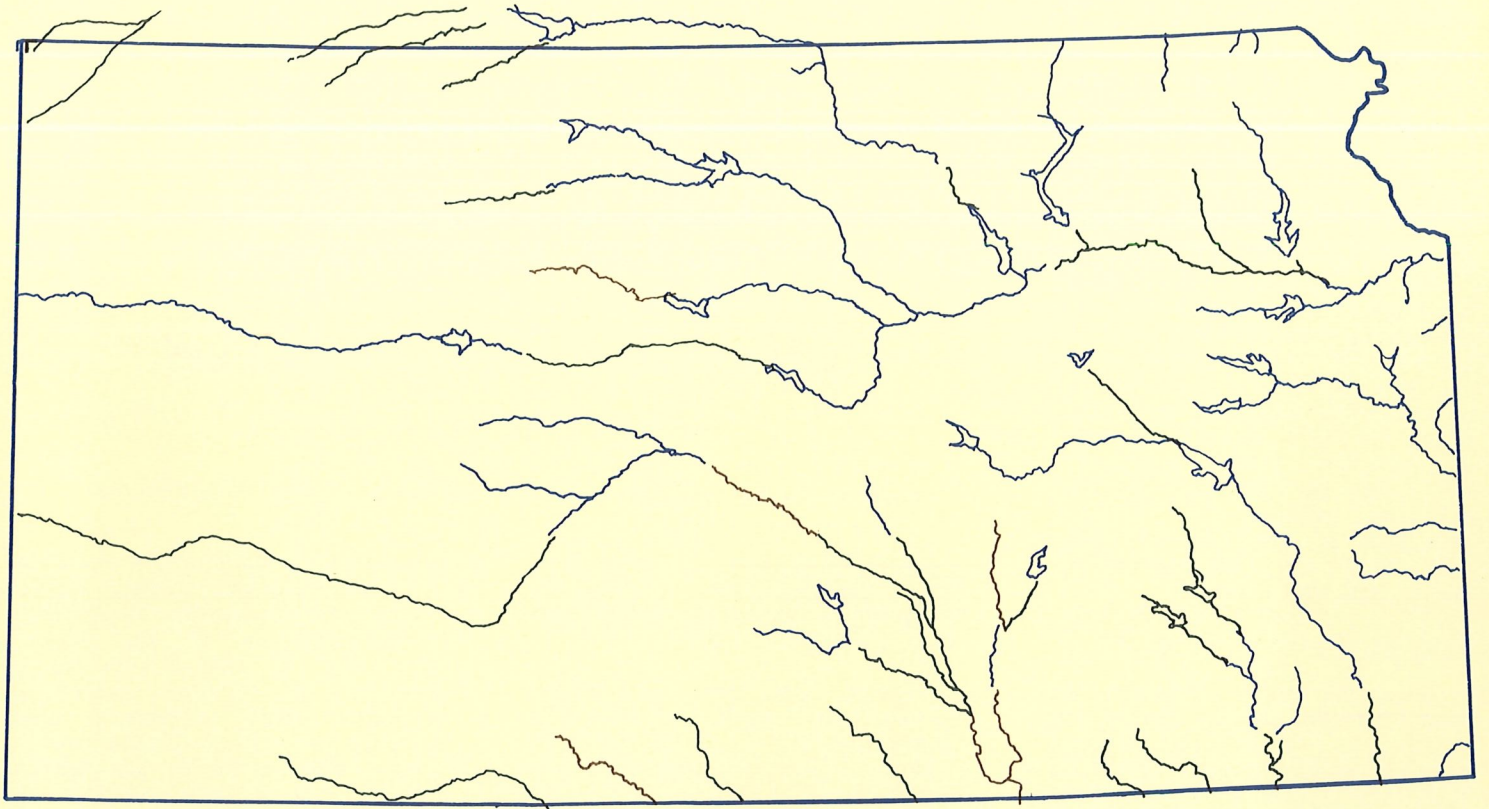


Figure 3 Aquatic Life Support Assessment



high quality ———
moderate quality ———
low quality ———

Figure 4 Livestock Water Assessment

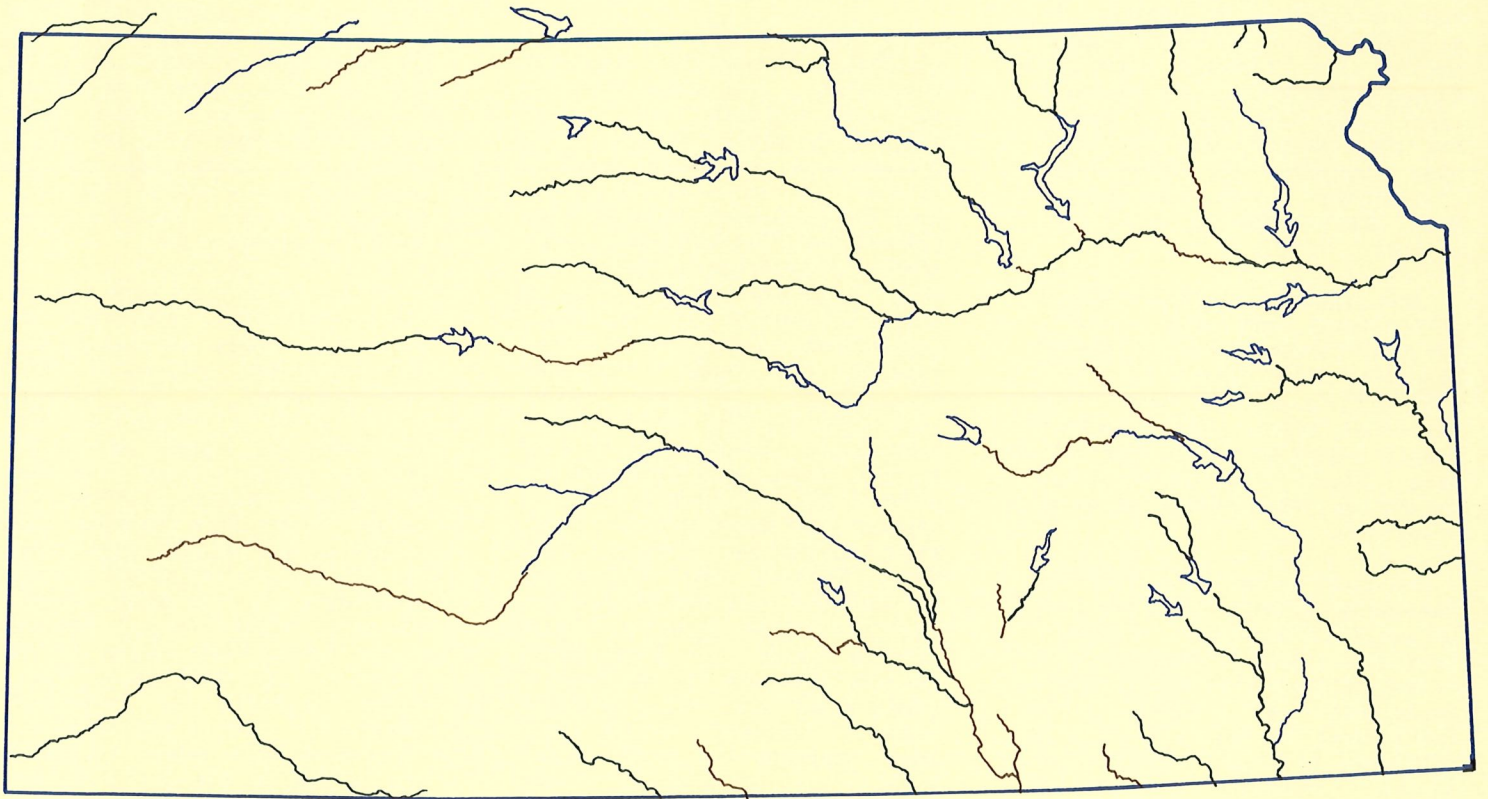


Figure 5 Drinking Water Assessment

During the years 1963 through 1966, Kansas experienced 93 recorded fishkills of which 60 percent were directly attributed to runoff from commercial feedlots (Figure 9). A regulatory program was initiated in the late 1960's to control pollution from large commercial feedlots. By comparison for the years 1980 through 1983 of the 219 reported fishkills, only 6 percent could be traced to commercial feeding operations testifying to the success of this program. The increase in the number of reported fishkills can be attributed to environmental awareness of citizens since, many fish kills can go undetected without citizens calling them to the attention of the Fish and Game Commission or Department of Health and Environment.

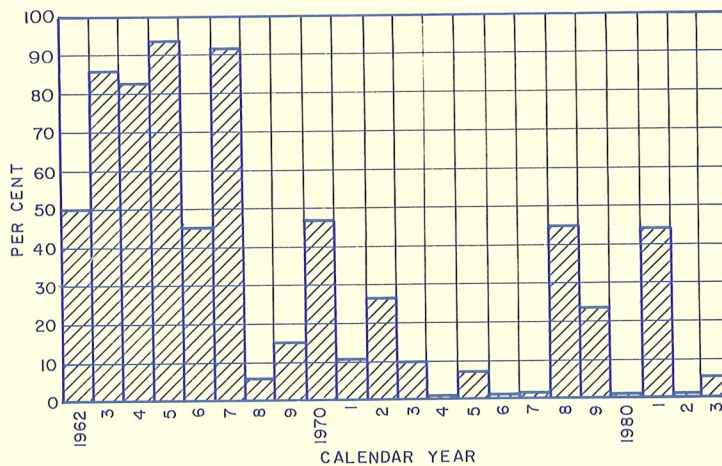


Figure 9 Fishkills Attributed to Runoff from Commercial Feedlots

Nonpoint Sources of Pollution

Over the years attention has been focused toward corrective action to reduce the obvious sources of pollution originating from industry and municipalities. There is no question that these point sources have contributed to the pollution problems of the state's surface and groundwaters. However, nonpoint sources of pollution are diffused in nature and are difficult to define. In general, pollution from nonpoint sources is carried over or through the ground by rainfall runoff and snow melt. Progress has been made by municipalities and industry in controlling contaminated runoff from storms. Much still needs to be accomplished.

The nonpoint sources include agricultural and urban runoff, mineral intrusion, mining (mainly abandoned mined lands), construction activities, and runoff from irrigated lands. These sources create pollution on an intermittent basis and particularly during or immediately following rainstorms.

Nonpoint source investigations have been conducted over the past decade by the Kansas Department of Health and Environment. Those investigations with which Kansas Department of Health and Environment has been particularly concerned relate to agriculture, mineral intrusion and mining activities. Sediment is the most widespread nonpoint source pollutant. Agricultural pesticides are being detected more frequently in the states waters and in sediment sample analysis. The

agricultural runoff management program is linked to water and soil conservation goals.

There have been two basic assumptions about control of contaminants in agricultural runoff. First, treating all agricultural land to meet soil conservation standards will result in attainment of water quality goals. Secondly, practices will be voluntarily installed if financial and technical assistance are provided.

In order to carry out the two assumptions several programs were identified. The state legislature has augmented the federal program by providing the State Conservation Commission about \$3 million in cost-sharing funds over the last several years. The State Water Plan currently under review, if adopted by the Kansas Water Authority and submitted to the legislature in its 1985 session, will recommend increased funding for water resources cost-sharing programs administered by the State Conservation Commission. Funds would be used to accelerate land treatment on some 27 million acres of land in need of such treatment. In addition, Kansas had a Rural Clean Water Project and a special agricultural conservation water quality project covering about 260,000 acres. The Clean Lakes Program (Section 314 of Federal Clean Water Act) is also being used to implement the agricultural nonpoint source management plan. In four projects, Clean Lake Studies will include a watershed needs inventory. The Phase II projects are designed to use Clean Lakes funds on needed watershed conservation and lake restoration practices.

Intrusion of minerals or salts into alluvial and surface waters is a major concern in several river segments in the State. Intrusion is almost entirely a product of natural processes although human influences have altered the impact of the intrusion. High chloride and sodium levels reduce the quality of water in the receiving streams. An extensive study has been made of the Solomon, Saline, Smoky Hill and Kansas Rivers and their alluvium. The brine discharge has been estimated to range from three-tenths to eight-tenths of a cubic foot per second (130 to 360 gallons per minute) and the chloride load ranges from 150 to 370 tons per day. In many locations these waters are not suitable on an intermittent and, in some areas, on a continuing basis for municipal, industrial or agricultural purposes.

Fifty percent or more of the samples of water taken from the Smoky Hill River and tested for both chlorides and sodium indicate the water was not suitable for drinking or irrigation. The percentage of samples not suitable for either use was less than 10 percent downstream along the Kansas River from Wamego. The exception was sodium, where over 20 percent of the samples were unsuitable for drinking water. The State Water Plan, if adopted by the Kansas Water Authority and funded by the state legislature, would initiate an intercept project to control naturally occurring mineral intrusions which are polluting the Saline, Smoky Hill, Solomon and Kansas Rivers. Cost of the interception project has been estimated at \$7 million with construction over 4 to 6 years with an annual operating cost of \$100,000.

WASTEWATER TREATMENT PLANT COMPLIANCE 1972 - 1982

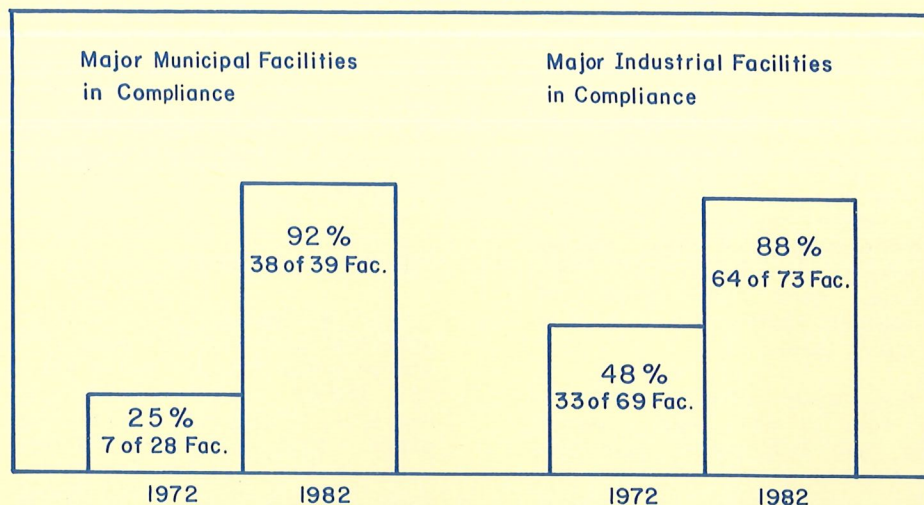


Figure 10 Compliance Record of Municipal and Industrial Waste Treatment Plants

In southeast Kansas, past lead, zinc and coal mining activities have created a pollution threat to local streams and aquifers. This mining area extends from Kansas into both Missouri and Oklahoma. The major deep aquifer, the Roubidoux, is the principal source of drinking water for the tri-state region. Although evidence does not indicate extensive migration of contaminated waters in the Roubidoux in Kansas, increasing use of the aquifer could induce overlying pollution into the aquifer.

Accidental Spills and Leaks

Accidental spills of hazardous materials present a possibility of seriously polluting both surface and groundwater supplies. Since spills are "accidental," no amount of preplanning will completely eliminate these problems. Nearly 500 spills are reported and investigated annually. Spills result from transportation accidents, pipeline breaks, storage tank leaks and overflows as well as many other sources. The greatest number of spills are crude oil or refined petroleum products.

Most spills are minor involving small quantities and are handled fairly routinely. Some are more serious, causing a serious threat to public health and safety or having potentially serious environmental effect.

Over ninety percent of all spills involve petroleum products, with chemicals such as acids, bases, pesticides, herbicides, fertilizers, and brines making up the rest.

The Division of Environment has set up an emergency response system to deal with hazardous spills. A single call from any person in the state will activate this system. Personnel will be on the site within a short time of the call.

REGULATION OF DISCHARGERS

Compliance has improved. The State of Kansas has an enforcement policy similar to the federal enforcement policy which it uniformly applies against violators. The primary emphasis is on achieving compliance by cooperation. However, the state does not hesitate to take appropriate formal enforcement action, if satisfactory progress is not made. The key tools in enforce-

ment are monitoring, surveillance, and technical assistance to the regulated community. In 1983, administrative orders with civil penalties were issued for violations in 15 different situations. By the end of the year, 13 of these violations had been resolved.

The regulated community has increased significantly in the last decade.

- Municipal systems permitted have increased from 477 to 732.
- Industrial facilities regulated have increased from 100 to 330.
- Commercial facilities were not regulated in 1972 and 40 are now permitted in 1982.
- Agricultural feedlots permitted have increased from none in 1972 to 1,710 in 1982.
- Municipal compliance has been significant (Figure 10).
- 42 percent of the facilities do not discharge any pollutants to the streams (non discharging facilities).
- In 1972 only 25 percent of municipal systems with a discharge of over one million gallons per day (28 facilities) met 1982 standards. Of the 39 facilities in this category in 1982, 92 percent were in total compliance.
- In 1982, 85 percent of all municipalities were in abso-

lute compliance with their permit limitations.

Similarly, progress has been made by industrial dischargers.

- 60 percent of the industrial facilities permitted do not discharge any pollutants to a stream.
- 88 percent of the industrial dischargers were in total compliance with the permit limitations in 1982.

In addition agricultural feedlots have made tremendous progress in the last decade.

- The major source of fishkills has for practical purposes been eliminated with control of feedlot runoff.
- None of the permitted facilities discharge to a stream.

LAKES AND RESERVOIRS

There are few natural lakes in Kansas. Most of the natural lakes are sink holes which were formed by the collapse of underlying geologic structure. These natural lakes are neither large nor significant in the overall management of the water resources. For example, the largest natural lake in Kansas is located in McPherson County. It has a surface area of 130 acres and a maximum depth of less than 10 feet when full.

Most lakes in Kansas are man-made - that is they are built by federal, state, local governments and private citizens. The largest lakes in Kansas are those built by the U. S. Corps of Engineers and the U. S. Bureau of Reclamation. These federal reservoirs store water for flood control, irrigation, municipal and industrial water supply, recreation, low flow augmentation and other uses. Soon after completion of the first federal reservoir in Kansas in 1948, Kansans soon discovered the recreation opportunities offered by these lakes.

Many water storage works in the form of mill dams, channel dams, and farm ponds, have been constructed in Kansas since the first settlements were made. Cities needing a more stable water supply constructed water supply reservoirs. The local government lakes have a combined surface area in excess of 20,000 acres. This is small in comparison to the over 100,000 acres of lake surface behind federal reservoirs.

These lakes and reservoirs represent a significant resource beneficial to aquatic life, recreation, and water supply for domestic, agricultural and industrial uses. The significance of these resources has prompted the state to carry out an extensive chemical and biological monitoring and surveillance program since 1965. Our knowledge about these lakes has increased.

- The state monitors 22 federal reservoirs and 38 county and city lakes.
- Of the 71 percent of the lakes monitored on a regular basis, the waters were found to have a supply of nutrients sufficient to support significant algae growth.
- Suspended sediments may limit light available for algae growth in Kansas lakes and reservoirs.
- A survey of 19 drinking water supply lakes, in 1983, showed 63 percent of the lakes were moderately to highly eutrophic.
- Several pesticides have been detected in surface water sampling from major federal reservoirs, county and city lakes.

Impairment of our lakes and reservoirs is likely to continue, as demand for lake water suitable for drinking, recreation and

aquatic life grows. The immediate problem is low levels of pesticides in drinking water and recreational lakes. Long term problems include the maintenance of aquatic communities, good quality drinking water supplies and the loss of recreational benefits in lakes and reservoirs. These potential problems call for strong lake - reservoir watershed management.

GROUNDWATER RESERVES

An estimated 400 million acre-feet of fresh groundwater is stored under Kansas. This water is stored in unconsolidated deposits of clay, silt, sand and gravel that comprise aquifers such as the Ogallala formation, river valleys, and glacial drift. Limited amounts of groundwater can be found in the sedimentary rocks such as sandstone, limestone and shales. Groundwater may differ in quality within the same aquifer. Groundwater quality can be adversely affected by both natural sources and activities related to man.

Our Knowledge has Increased about Groundwater

- Geology and groundwater reports are available for all counties with significant groundwater resources.
- Baseline groundwater quality reports are available for all major aquifers (1976-1982).
- Data on 24 chemical properties from 766 wells from across the

state were collected between 1976-1981 (Figure 11).

- Prevalent mineral constituents encountered were dissolved solids, nitrates, selenium, iron, manganese, chloride and fluoride.
- A Groundwater Quality Management Plan for the State of Kansas was published in 1982 and serves as the current strategy for groundwater quality protection.
- Of sixty-seven public ground water supplies screened for synthetic organics, 15 were found with detectable levels of which only one was considered unsuitable for public drinking water.

Although natural pollution problems may cover a large area, most serious pollution problems relate to man made sources and are confined to a restricted geographic area -- often less than a square mile but may extend to 5 to 10 square miles. The most prevalent groundwater pollution concerns expressed by local, state, and federal officials in the development of the state groundwater quality management plan were oil and gas field operations, accidental spills or leaks, abandoned wells of all kinds, and improper waste disposal practices.

If groundwater is depleted in certain areas of the state, freshwater deterioration may occur from movement of less desirable (quality) waters into the area.

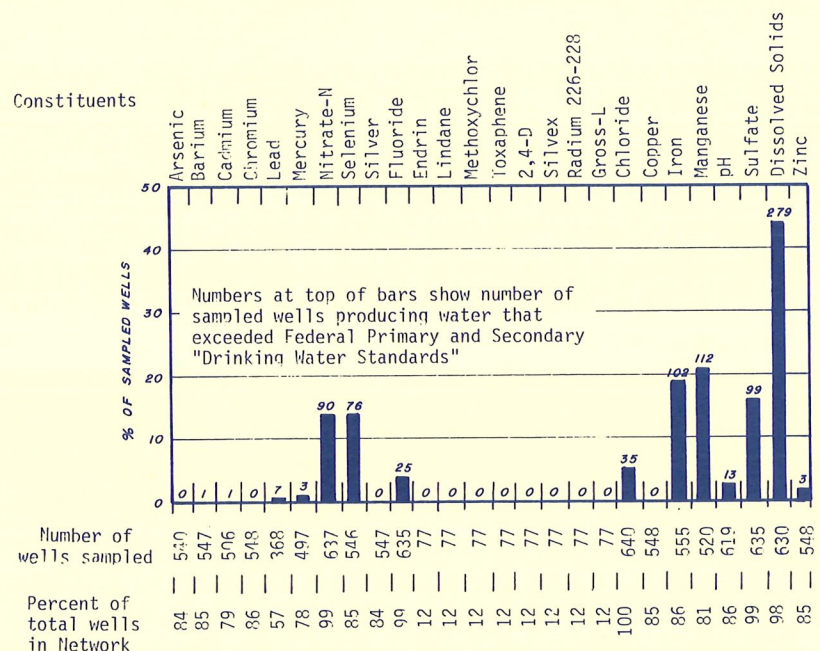


Figure 11 Percentage of Samples in State-Wide Groundwater Quality Network That Exceeded Federal Drinking Water Standards

ISSUES AND CHALLENGES

The history of Kansas' development to a large extent can be told in terms of the use of the state's natural resources. Although many Kansans once shared the misconception that these resources could never be depleted, many are now aware of the limits of the natural resource base and the tenuous ecological and economic interrelationship upon which the future availability and the quality of these resources depend. The continued availability, quality and reasonable balanced use of the state's land and water resources are the keys in maintaining the state's current productivity and preserving the general quality of life in Kansas. The state must act with sensitivity to preserve and protect its environmental quality for future generations while effectively utilizing its natural resources. In order to maintain this harmonious balance there must be continued vigilance to identify, detect, analyze, prevent or resolve emerging problems.

Kansas' current water quality goals include achievement of primary drinking water standards, maintenance of surface waters within acceptable water quality standards, and protection of the quality of groundwater. These goals are achieved through implementation of the state's environmental laws and regulations. The state has sought and been granted the responsibility to carry out the federal regulatory program under the Clean Water Act, the Safe Drinking Water Act, and Resource Conservation and Recovery Act.

Wastewater Treatment Plant Funding

Every two years EPA must make an annual report to Congress on the cost of compliance with clean water regulations -- and the estimated tab is \$705 million for the next 10 years compared to \$633 million spent over the last decade. Correction or rehabilitation of existing and the construction of new sewers amounts to 83 percent of the estimate. The subsequent decade could see the expenditure approaching a billion dollars. Funding of these projects may become an issue with the shifting of the financial burden from federal to local governments.

Operation and Maintenance Problems

Many publicly owned treatment works have problems with poor operation and maintenance and inadequate financing. Correction of problems with operation of these facilities is a high priority issue with the state. To protect the hundreds of millions of dollars invested in the construction of municipal waste treatment works during the last decade, it is imperative to increase the operation and maintenance skills of operating personnel. The state is currently meeting less than half of the training requirements under its certification program, even though the expenditures in this program now exceed a quarter of a million dollars per year. As federal assistance to municipalities for building or replacing wastewater works is phased out, it is essential technical assistance be provided to municipalities for implementing a utility concept of wastewater management. Most of the municipal wastewater systems are not operated on a sound utility concept.

Toxic Pollutants

An issue now receiving attention, and one that will require more effort in the immediate future, relates to toxic pollutants. Identification and control of toxins in industrial wastewater discharges is a concern. The state has incorporated biological monitoring require-

ments into industrial discharge permits where there is a potential for toxicity. The program has a three tiered approach. The first phase involves conducting a static bioassay on the effluent to determine if toxicity is present; then if potential problems are identified the next step is to undertake an internal assessment of the industrial process to isolate the problem; the last step after corrective measures are adopted is to rerun the static test or perform a more detailed toxicity test to determine if the corrective measures implemented, reduced or eliminated toxicity through source control or improved treatment.

The Emerging Problems

Monitoring, surveillance and complaint investigations identify emerging environmental problems. These include:

- Surface and groundwater contamination from abandoned mined areas.
- Agricultural runoff.
- Pesticides detected in lakes.
- Irrigation return flow.
- Mineral intrusion polluting surface waters as well as groundwaters.
- Injection of pesticides into irrigation distribution systems.
- Toxic pollutants in municipal and industrial wastewater effluent.
- Groundwater pollution occurring from Kansas industrial activities.
- Low flow augmentation programs to support aquatic life.

SUGGESTED ADDITIONAL READING

Editors note: This article was a summary of reports by KDHE and prepared in compliance with Section 305b of Public Law 92-500.

Revision to Kansas Water Quality Management Plan, KDHE 1984

Groundwater Management Plan, KDHE 1982

Report to 1984 Kansas Legislature Concerning Special Studies Required by the Kansas Legislature in 1979 Under Provisions of SCR 1640, KDHE 1984

America's Clean Water, The States' Evaluation of Progress 1972-1982, Association of State and Interstate Water Pollution Control Administrators 1984

Kansas State Water Plan, Kansas Water Authority 1985

SUMMARY

The people of Kansas for almost a century have been concerned about the quality of water and adequate supplies. With increasing demand has come a growing concern for good quality management. Assuring an adequate supply is not sufficient - it must also be a safe supply. Although great progress has been made in water cleanup during the last decade, Kansas needs to move progressively forward to improve its water protection to ensure a high quality of life for our citizens by assuring:

- better water quality in

streams, lakes and ground-water;

- more surface and ground water supporting designate uses;
- more people served by adequate sewage treatment;
- continued progress by industry and municipalities in providing adequate treatment of wastes; and
- progress toward effective management of non-point sources of pollution.

Clearly, much remains to be done. Some communities need to complete necessary improvements or construct new plants. Vigilance is required to assure adequate control prior to dis-

charging to surface waters. Non-point sources of pollution must be reduced, and groundwater quality protected.

Further progress will be costly and more difficult, requiring continued support of the federal, state and local government, industry and private citizens.

The past decade has laid a solid foundation. For the most part, our water quality has begun to improve. The progress made toward cleaner water will serve us well as we build on past accomplishments in the years ahead.

The Department of Health and Environment is pleased to report its progress in restoring and protecting the quality of Kansas water resources. Pollution over the last decade has decreased and more beneficial uses are supported due to the improved quality of surface water runoff. The number of municipalities, industries and agricultural facilities permitted under Kansas statute increased from 600 to 2,800 facilities over the last decade. The owners and operators of these facilities are meeting the permit requirements better than 90% of the time. This has been accomplished with the co-operation of private industry and federal, state and local

agencies in meeting the goals of the federal Clean Water Act. Our local units of government have provided about one-half of the \$633 million expended to build, improve and update our municipal wastewater treatment facilities in the state. This figure does not include the investment made by industry and private citizens.

In the coming years, maintaining our progress will be a tremendous challenge; but the strength of our economic and natural environment depend upon the continuing supply of clean water for our citizens and communities. With the support of our legislature and citizens, Kansas

will continue to improve the water protection and management programs which help assure a high quality of life for all of our people.



*Barbara J. Sabol, Secretary
Department of Health & Environment*

*John Carlin
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