RECOMMENDATIONS FOR
A National Strategy For Disease Prevention

Report to the Director, CDC
by the
CENTER FOR DISEASE CONTROL
PROGRAMS AND POLICIES
ADVISORY COMMITTEE
(Ad Hoc)

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1978

June 30, 1978

U.S. Department of Health, Education, and Welfare / Public Health Service / Center for Disease Control / Atlanta, Georgia 30333

Conferences / Reports
(1254)

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INTRODUCTION

In July 1977 the Director, Center for Disease Control (CDC) initiated a project to plan how CDC can best work toward achievement of its objective: preventing or reducing unnecessary* morbidity and/or mortality in the U.S.

The first phase of the project was an extensive mail solicitation of recommendations on what CDC's activities should be to maximize achievement of its objective. Several hundred individuals and organizations representing a wide range of public health interests responded.

The second phase of this project was the specification of recommendations on CDC's future programs and policies by an advisory group composed of prominent individuals in public health from outside CDC. This committee, chartered on December 19, 1977, was designated "The Center for Disease Control Programs and Policies Advisory Committee *Ad Hoc*." Their deliberations were based on the responses to the solicitation, current morbidity and mortality data, and their own experience, insight, and expertise in public health.

The next phase of this project will be concerned with implementing the Committee's recommendations. Approximately one year from the date of this report, the Committee will be reconvened to evaluate the progress that has been made towards this end.

This report is designed to advise the Director, CDC, of the Committee's recommendations on CDC's future programs and policies. It consists of the objectives of the Committee, the selection of its members, the procedures used during each Committee meeting and the recommendations resulting from those meetings.

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*Morbidity and/or mortality that can be prevented or reduced by the application of existing or imminent scientific and operational knowledge.

I

BACKGROUND

BACKGROUND

Preparation for Committee

In preparation for the Committee, specific and measurable objectives for the Committee's deliberations were established. Factors that might significantly impede the achievement of these objectives were then anticipated. Such factors included the lack of commonality of backgrounds and experiences among committee members, the lack of motivation, and other obstacles (e.g., the lack of time or a crowded work environment). Detailed plans were developed to prevent any of these potential factors from occurring. Such plans resulted in the specification of the process to select the Committee's members, Chairperson, and Staff; the number of Committee meetings; the length of each meeting; and the procedures and guidelines for each meeting. For example, one of the potential factors was the lack of commonality of backgrounds. To ensure that each Committee member shared common definitions and understandings of certain basic concepts (e.g., a "health problem"), guidelines used by the Committee included definitions of these concepts (e.g., a health problem was defined as a cause of morbidity and/or mortality that can be prevented by the application of existing or imminent scientific and/or operational knowledge).

Committee Objectives

The primary objective of the committee was to recommend to the Center Director those programs and policies that would substantially reduce unnecessary morbidity and mortality in the U.S.

It was anticipated that achievement of this objective would require the successful completion of the following subobjectives:

> Categorize health problems according to the impact that programs designed to remove them would have on reducing unnecessary morbidity and/or mortality.
>
> Given descriptions of the nature and extent of preventable health problems of high priority:
>
> > Specify a plan for obtaining the data necessary to more accurately define each health problem and assess progress in reducing the problem.
> >
> > Specify a general strategy of intervention to prevent or reduce morbidity and/or mortality due to each health problem.

Given descriptions of strategies of intervention to reduce unnecessary morbidity and mortality due to preventable health problems of high priority, specify CDC's role in the implementation of the strategies.

Given recommendations for CDC's role in the implementation of the strategies of intervention, suggest organizational improvements that would allow CDC to function more efficiently in that role.

Selection of Committee Members

Of all the factors that could influence the success of the committee, the selection of its members was recognized to be critical. Consequently, Committee members were carefully and deliberately chosen. Attempts were made to ensure that the members reflected a range and balance of perspectives that would enhance the quality and credibility of their conclusions, and that they possessed personal characteristics that would enable them to function together efficiently.

Selection was based on the following, more precise, criteria:

The members should be from outside CDC to provide the comprehensive objectivity that might be lacking on a committee consisting solely of CDC personnel.

The members should represent organizations and groups with significant concerns in public health in the U.S. (e.g., voluntary agencies, consumers, State and local health departments, schools of public health, physicians).

The members should represent a range of professional competencies and experiences in public health (e.g., pediatrics, laboratory, epidemiology, clinical medicine, chronic diseases).

The members should demonstrate objectivity, critical thinking, flexibility, interpersonal skills, and personal commitment.

After specification of these criteria, the selection process consisted of the following steps:

Specification of organizations and groups with significant concerns in public health in the U.S. (e.g., voluntary agencies, consumers, the Association of State & Territorial Health Officers, the Association of State & Territorial Epidemiologists, schools of public health, physicians, industrial workers).

Solicitation of nominations for membership from the above organizations and groups and from CDC management.

Selection of the Committee members by the Director, CDC, using the list of nominees and the list of criteria. After careful and deliberate consideration of more than 100 nominees, a tentative list of Committee members was selected and invited to participate. Based on their responses, the list was subsequently revised.

The following individuals comprised the Committee:

William C. Banton, II, M.D.
Health Commissioner
County of St. Louis
Clayton, Missouri

Giles G. Bole, M.D.
Physician-in-Charge
Arthritis Division and Rachkam
Arthritis Research Unit
University of Michigan
Medical School
Ann Arbor, Michigan

Mrs. Betty Bumpers
Bethesda, Maryland

James Chin, M.D.
Chief, Infectious Disease Section
California Department of Health
Berkeley, California

Suzanne E. Dandoy, M.D.
Director, Arizona Department of
Health Services
Phoenix, Arizona

Asher J. Finkel, M.D.
Group Vice President for
Scientific Affairs
American Medical Association
Chicago, Illinois

Eugene W. Fowinkle, M.D.
Chairman, Association of State and
Territorial Health Officers
Tennessee Dept. of Public Health
Nashville, Tennessee

D. A. Henderson, M.D., Dean
School of Hygiene and
Public Health
The Johns Hopkins University
Baltimore, Maryland

Maureen M. Henderson, M.D.
Assistant Vice President for
Health Affairs
University of Washington
Seattle, Washington

Lorin E. Kerr, M.D.
Director, Department of
Occupational Health
United Mine Workers of America
Washington, D.C.

Joyce C. Lashof, M.D.
Deputy Assistant Secretary
for Health
Department of Health, Education,
and Welfare
Washington, D.C.

J. Brett Lazar, M.D.
Health Officer
Montgomery County Health Dept.
Rockville, Maryland

George I. Lythcott, M.D.
Health Services Administration, PHS
Department of Health, Education,
and Welfare
Rockville, Maryland

James O. Mason, M.D.
Deputy Director of Health
Utah Division of Health
Salt Lake City, Utah

George A. Reich, M.D.
Regional Health Administrator
Department of Health, Education,
and Welfare
Atlanta, Georgia

John Sbarbaro, M.D.
Medical Coordinator, Health Programs
Denver Department of Health
and Hospitals
Denver, Colorado

Selection of Committee Chairperson and Staff

The Committee Chairperson was selected according to the following criteria:

> The chairperson should possess occupational experience with a preventive health program.
>
> The chairperson should demonstrate objectivity, critical thinking, flexibility, interpersonal skills and personal commitment.
>
> The chairperson should possess the ability to direct the group toward achievement of its objective (e.g., maintain positive group motivation, distribute work evenly, manage the meeting materials and resources).
>
> The chairperson should be a member of the CDC staff to assure constant availability to the Committee of general information on the Center; to provide direct liaison between the Committee and the Director, CDC; to be directly accountable for the preparation of reports; and to facilitate full participation of the Committee members.

These criteria were used by the Director, CDC, to select the Chairperson:

J. Donald Millar, M.D.
Director
Bureau of State Services, CDC

The selection of the Executive Secretary of the Committee was anticipated to be crucial in ensuring that the Committee's deliberations proceeded smoothly. The Executive Secretary was responsible for coordinating the administrative details of the Committee (e.g., arranging for facilities and supplies, preparing travel orders); for developing the procedures to be used by the Committee; and, most importantly, for ensuring that these procedures were implemented (e.g., if any obstacles to implementation arose, he/she could take the proper corrective action). In addition, the Executive Secretary was also responsible for appropriate documentation of the Committee's deliberations and recommendations (e.g., minutes and transcripts of the meetings). The individual selected by the Director, CDC, to assume these responsibilities was:

Ms. Patsy Whitesell
Bureau of Training, CDC

In addition to Ms. Whitesell, the Committee Staff included:

Ms. Susan Toal, M.P.H.
Acting Executive Secretary
Bureau of Training, CDC

Ms. Fay Hendricks
Travel Assistant
Bureau of Epidemiology, CDC

Ms. Joan Davenport
Recording Secretary
Bureau of State Services, CDC

Michael Wimpy
Staff Assistant
Bureau of Training, CDC

II

ASSIGNMENT OF PRIORITIES TO PREVENTABLE HEALTH PROBLEMS

ASSIGNMENT OF PRIORITIES TO PREVENTABLE HEALTH PROBLEMS

Methodology

The first committee meeting (February 21-23, 1978) was designed to achieve the following objective:

> Categorize health problems according to the impact that programs designed to remove them would have on reducing unnecessary morbidity and/or mortality.

To accomplish this objective, the Committee was asked to perform two major tasks:

> List health problems responsible for unnecessary morbidity and/or mortality.
>
> Classify each listed health problem as high, medium, low, or no priority according to the impact a program designed to remove it would have on reducing unnecessary morbidity and/or mortality.

For purposes of this committee, a health problem was defined as:

> A cause of morbidity and/or mortality that can be prevented by the application of existing or imminent scientific and/or operational knowledge. Some examples are: tuberculosis, poliomyelitis, measles, diphtheria, motor vehicle accidents, chronic obstructive lung disease, lung cancer, hypertension, stroke, genetic disorders, and substance abuse (including tobacco, alcohol, and drugs).

The Committee was provided with the responses to the solicitation, current morbidity and mortality data*, and a list of experts inside and outside CDC who could be contacted to answer questions relating to their particular area of expertise.

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* Harvey Geller and Gregory Steele, "Probability Tables of Death in the Next Ten Years From Specific Causes," Prospective Medicine, Methodist Hospital, Indianapolis, 1974.

"Reported Morbidity and Mortality in the U.S. 1976," Morbidity and Mortality Weekly Report, Vol. 25, No. 3, Center for Disease Control, Atlanta, 1977.

"Ten Leading Causes of U.S. Mortality by Race and Sex for 1975 and the Proportional Allocation to the Four Elements of the Health Field," Center for Disease Control, Atlanta, 1976.

For ease of management, it was decided that the health problems could be considered to belong to one of three general areas of concern: Environment, Lifestyle, or Medical Services. The areas were defined as follows.

ENVIRONMENT: This area includes causes of morbidity and/or mortality related to influences in the environments of work, home, and recreation. Some of these influences are food, water, transportation, pollution, consumer safety, occupational hazards, communicable disease.

LIFESTYLE: This area includes causes of morbidity and/or mortality related to an individual's personal behavior patterns such as use of drugs, alcohol, smoking, nutrition, physical fitness.

MEDICAL SERVICES: This area includes causes of morbidity and/or mortality related to services that influence health by preventing or treating diseases or disability. Some of these services are immunization, genetic counseling, rehabilitation, dental services, early detection and treatment of chronic diseases (e.g., diabetes, arthritis), emergency services, family planning, prenatal and perinatal care.

The Committee members were divided into three (five- or six-person) subcommittees, to correspond with these three areas of concern. Each subcommittee was asked to limit its concern to health problems within its designated area.

The members were asked to consider the following guidelines when generating their lists of health problems:

List only health problems that *directly* contribute to morbidity and/or mortality.

List health problems without consideration of the role CDC might have in a program to resolve the problem.

List only *domestic* health problems.

Combine individual, specific health problems into collective groups of problems when the same strategy of intervention could be used to resolve them. (For example, list "vaccine preventable diseases of children," rather than listing each vaccine preventable disease separately; e.g., "poliomyelitis," "measles," "pertussis," etc.).

Upon completion of their lists, the subcommittees were asked to classify each listed health problem as having "high," "medium," "low," or "no" priority according to the impact a program designed to remove it would have on reducing unnecessary morbidity and/or mortality.

For purposes of the work of this session of the Committee, categories of health problems of "high," "medium," "low," and "no" priority were defined as:

HIGH PRIORITY: A *large* decrease in morbidity and/or mortality would be *predictable* if appropriate measures to control this problem were implemented, and/or an *unacceptable* increase or persistence in morbidity and mortality would be *predictable* if measures to control this problem were discontinued.

MEDIUM PRIORITY: A *moderate* decrease in morbidity and/or mortality would be *probable* if appropriate measures to control this problem were implemented, and/or an *undesirable* increase or persistence in morbidity and mortality would be *probable* if measures to control this problem were discontinued.

LOW PRIORITY: A *small* (but significant) decrease in morbidity and/or mortality would be expected if appropriate measures to control this problem were implemented, and/or a *tolerable* increase or persistence in morbidity and mortality would be expected if measures to control this problem were discontinued.

NO PRIORITY: An *insignificant* decrease in morbidity and/or mortality would be expected if appropriate measures to control this problem were implemented, and/or an *insignificant* increase or persistence in morbidity and mortality would be expected if measures to control this problem were discontinued.

A minimum of three factors (prevalence, mortality and/or decreased quality of life, and technical feasibility of successful intervention) were suggested for consideration in assigning priority to health problems.

PREVALENCE (assuming the absence of a program of intervention)

What percentage of the population is affected by the problem?

Does prevalence appear to be increasing or decreasing?

MORTALITY AND/OR DECREASED QUALITY OF LIFE for the individual (assuming the absence of a program of intervention)

What is the mortality rate for the health problem? What proportion of persons afflicted are expected to die?

How severe is the morbidity caused by the problem to the individual (e.g., in terms of time lost from productive activity, personal discomfort)?

What is the extent of long term disability or decreased quality of life (e.g., complications resulting from diabetes, impaired hearing from noise pollution)?

TECHNICAL FEASIBILITY OF SUCCESSFUL INTERVENTION

To what extent can available technology be effective in preventing or controlling the health problem?

What is the likelihood of imminent advances in technology (e.g., scientific breakthroughs) that would provide a means of preventing or controlling the health problem?

The subcommittee on "Lifestyle" expanded these factors to also include "medical-care cost-impact" (which refers to the effect of the health problem's continuation or elimination in terms of medical care costs) and "national economy impact" (which refers to the years of productive life that could be gained by eliminating the problem).

To make the priority classification of each health problem somewhat more objective, a numerical system for evaluating the relative importance of the factors was suggested and generally utilized. Each factor was assigned a value of 0-4 by the members. These values were then multiplied by each other. The resulting product was classified as follows: 28 to 64 indicates "high" priority; 9 to 27 indicates "medium" priority; 1 to 8 indicates "low" priority; 0 indicates "no" priority. For example, if the three factors for a certain health problem were assigned values of 4, 2, and 3, then the problem would be classified as "medium" priority (i.e., 4 x 2 x 3 = 24, which lies in the "medium" priority range).

Worksheets were provided to each subcommittee to facilitate recording the values assigned to each factor and ranking the problems.

Discussion

The Committee members selected the preventable health problems of high priority by considering the factors discussed previously in light of the morbidity and mortality data provided and their own knowledge and experience. If they felt that all of the factors (e.g., prevalence, mortality and/or decreased quality of life, technical feasibility of successful intervention, etc.) deserved a high numerical value (i.e., a 4 or a 3) for a certain health problem, then they classified that problem as having "high" priority. For example, the problem of motor vehicle accidents affects everyone in the population, either as a driver, a passenger, or a pedestrian. (Thus, "Prevalence" was assigned a value of 4.) Motor vehicle accidents are one of the ten leading causes of death and are also the third largest cause of loss of potential years of life. Those affected also suffer such consequences as economic loss from property damage, economic loss due to injuries or disabilities, and time and economic loss due to the accident and its legal repercussions. (Thus, "Mortality and/or Decreased Quality of Life" was assigned a value of 4.) The Committee felt that the problem could be prevented or controlled with available technology (e.g., through strict enforcement of laws for safe design and manufacture of vehicles, for safe design of road systems, and for mandatory periodic driving tests before renewing operator licenses. Thus, "Technical Feasibility of Successful Intervention" was assigned a value of 4.) Multiplying these assigned values (4 x 4 x 4 = 64) placed "motor vehicle accidents" in the "high" priority category.

At the conclusion of the first meeting, the Committee had produced lists of health problems classified as "high," "medium," "low," or "no" priority. In subsequent meetings these lists were reconsidered, evaluated and edited. The Committee decided in its second meeting to eliminate from further consideration the lists of "low" and "no" priority health problems because programs designed to remove them would have such a small or insignificant impact on reducing morbidity and/or mortality.

In its third meeting the Committee decided to change the title of the list of "medium" priority health problems to "Additional Preventable Health Problems of Noteworthy Significance." This title change resulted from the Committee's concern that these health problems as defined, although not of the highest priority, are of considerable importance, more so than is suggested by the term "medium" priority. These problems generally did not rate highly in all of the factors (i.e., received values of 3 or 2 for a majority of factors), but were still significant public health problems. For example, although human rabies is not prevalent, a single reported case is considered to be a public health emergency. On the other hand, other problems included in this list are very prevalent (e.g., arthritis) but the technology to prevent them is not yet available.

Preventable Health Problems of High Priority

The "final" list of preventable health problems considered to be of "high" priority included:

ALCOHOL and its consequences

CANCERS of medium to high incidence subject to prevention or successful intervention when detected early

CARDIOVASCULAR DISEASES of medium to high incidence and subject to successful intervention

CONTAMINATION OF DRINKING WATER

DENTAL DISEASES (notably caries and periodontal)

DISEASES CAUSED BY HAZARDOUS HEALTH EXPOSURES IN THE WORKPLACE

INFANT MORTALITY

MOTOR VEHICLE ACCIDENTS

NEWLY RECOGNIZED DISEASES AND UNEXPECTED EPIDEMICS OF PUBLIC HEALTH SIGNIFICANCE

NOSOCOMIAL INFECTIONS

SMOKING and its consequences

VACCINE PREVENTABLE DISEASES OF CHILDREN (diphtheria, pertussis, tetanus, poliomyelitis, measles, rubella)

As a result of substantial discussion, the Committee identified the following problems as "Problems of High Priority for Special Consideration:"

MENTAL ILLNESS

SOCIAL DISORDERS

STRESS

It felt that these problems clearly contribute greatly to unnecessary morbidity and mortality in this country. However, their causes are multiple, only some of which are known and/or vulnerable to prevention. The Committee urged that a panel subsequently define these problems in more detail and determine whether or not appropriate strategies can be developed.

Additional Preventable Health Problems of Noteworthy Significance

The "final" list of "additional preventable health problems of noteworthy significance" included:

ARTHRITIS/RHEUMATISM

CANCER (Bladder, Lip, Mouth, Pharynx, Skin, Uterus, Vagina)

DIABETES

DISASTERS

DISEASES CAUSED BY AIR POLLUTION

GENETIC DISEASES

INAPPROPRIATE USE OF MEDICAL SERVICES AND PHARMACEUTICAL PRODUCTS

INAPPROPRIATE USE OF PSYCHOACTIVE DRUGS

NUTRITION-RELATED PROBLEMS

OCCUPATIONAL ACCIDENTS

INFECTIONS OF LOW INCIDENCE but of potential significance to the community, such as encephalitis, leprosy, plague, and rabies

INFECTIONS OF MEDIUM TO HIGH INCIDENCE and of significance to the community, such as influenza, mycobacterial respiratory disease, and venereal disease

RENAL DISEASE

TREATABLE DISEASES OF THE CENTRAL NERVOUS SYSTEM (Epilepsy and Parkinsonism)

UNWANTED PREGNANCY

VISION IMPAIRMENT

III

DEVELOPMENT OF STRATEGIES OF INTERVENTION TO RESOLVE PREVENTABLE HEALTH PROBLEMS OF HIGH PRIORITY

DEVELOPMENT OF STRATEGIES OF INTERVENTION TO RESOLVE PREVENTABLE HEALTH PROBLEMS OF HIGH PRIORITY

Methodology

The second committee meeting (April 11-13, 1978) was designed to achieve the following objective:

> Given descriptions of the nature and extent of preventable health problems of high priority:
>
> > Specify a plan for obtaining the data necessary to more accurately define each health problem and assess progress in reducing the problem.
> >
> > Specify a general strategy of intervention to prevent or reduce morbidity and/or mortality due to each health problem.

It was decided that small working groups (i.e., 3 or 4 members) would make the extensive amount of detail required to achieve this objective more manageable. For this reason, the high priority health problems were randomly divided into four groups. The Committee members were then assigned a group of problems according to their particular interests and expertise. Each subcommittee was provided with guidelines and worksheets that suggested a format for their deliberations and recommendations. They were asked to:

> Describe the nature of the high priority health problem in terms of its impact on morbidity and mortality.
>
> Define the extent of the health problem by using present knowledge and readily available information, including the magnitude of the problem (i.e., its prevalence and seriousness); the population most affected; the causes; the consequences, other than morbidity and mortality (e.g., significant economic or social consequences); and the problem's vulnerability to prevention.
>
> Determine if the data available are adequate to define the extent of the health problem accurately. If not, specify a plan to define the problem more accurately and consequently to assess the effectiveness of intervention. This plan should include a description of the data needed to make the assessment and the steps required to obtain them.
>
> Given the description of the health problem and the plan to define the problem more accurately, specify an optimal strategy of intervention to prevent or reduce morbidity and mortality due to the health problem. This strategy should include the objectives of the intervention (e.g., reduce the number of susceptibles, reduce the concentration of a carcinogen in the workplace) and the major steps of the intervention that must be adequately performed to resolve the problem.

The members were provided with the following suggested criteria for an optimal strategy of intervention:

> It is likely to result in a maximal reduction of morbidity and mortality due to the problem.
>
> It is technically, operationally, and economically feasible.

The Committee was requested to, whenever possible, designate the group or agency (i.e., Federal, State, or local government, private medicine, volunteer agencies, public school system, etc.; in the case of Federal agencies, specify CDC, FDA, NIH, ADAMHA, EPA, Department of Transportation, Department of Labor, etc.) most likely to possess the competency required to perform each step in the strategy and to identify any specific needs that the designated agency would require to implement the step (e.g., grants to States, equipment, specialized personnel, legislation).

Each subcommittee was asked to present its proposed strategies to the Committee as a whole for debate and amendment until consensus could be achieved.

Discussion

At the conclusion of the second meeting, the Committee had produced descriptions of strategies of intervention for reducing morbidity and mortality due to the 12 high priority health problems. In subsequent meetings, they further evaluated and edited these strategies, ensuring that an agency was designated to perform each step in the strategy and suggesting methods that CDC could use to perform its assigned steps.

In their deliberations, the Committee repeatedly stressed that the greatest reduction in morbidity and mortality could be achieved through *primary* prevention (i.e., measures designed to prevent the occurrence of disease) rather than through *secondary* prevention (i.e., measures designed to control or cure a disease after it has occurred). They emphasized the absence of one agency responsible for advocating and coordinating primary prevention activities. They also felt that much of the data currently being collected are not being adequately utilized and interpreted from an epidemiologic perspective. They urged CDC to conduct such epidemiologic analyses and to inform the public of the results.

As will be noted in several of the descriptions of strategies, the Committee envisioned various "new" roles for CDC. Some of these responsibilities recommended for the Center address disease problems that are not *now* part of the Center's charge and are included in the missions of one or more other Federal agencies. Aware of potential misunderstandings of the intent of its recommendations, the Committee strongly stressed the concepts of "cooperation" and "coordination" in advising CDC to enter these fields. The members wished to make it clear that they were not interested in fostering "competition" with, "duplication" of, or

"encroachment" on the responsibilities of other agencies. In every case, the recommendations that CDC become involved in problems now being addressed by others grew out of the perception that the field could profit from CDC's expertise (e.g., in epidemiologic investigation and analysis) and/or from greater emphasis on disease prevention. The recommendations also reflect a conviction of the Committee (as more fully described in Chapter IV) that CDC should be designated as the "national focus for prevention."

Description of Strategies

The following pages describe the twelve strategies of intervention. The functions in these strategies that the Committee recommended be performed by CDC are italicized.

ALCOHOL

PROBLEM STATEMENT

Preventable death and disease due to alcohol constitute a major health problem in the U.S. In addition to alcohol-related illness and death among alcohol users themselves, a substantial amount of unnecessary death and disability are caused to others by persons under the influence of alcohol. Alcohol is responsible for a high proportion of deaths due to automobile accidents, homicide, and suicide. In addition, the social and economic consequences of alcoholism are poorly measured but known to be profoundly significant.

HEALTH PROBLEM DEFINITION

The use of alcohol is an integral part of today's American lifestyle, and moderate alcohol use is even thought by some to be beneficial. However, alcohol use produces serious problems affecting the total population directly or indirectly. It results in economic losses, from a loss of life and productive functioning of individuals, as well as damage to property. It is a major problem among particular ethnic groups and subcultures, is rapidly increasing in teenagers, and is a major contributing factor in accidents, homicide, and suicide. Cirrhosis of the liver due to alcohol is one of the five leading causes of death in men ages 25 to 44.

The underlying causes of alcoholism are not understood, but a combination of cultural and socioeconomic factors are suspected. Also, genetic factors apparently cause some individuals and cultural groups to be more susceptible to alcoholism than others. Although evidence indicates that the incidence of alcohol-related problems is correlated with per capita alcohol consumption, it is difficult to predict which drinkers will experience or create alcohol-related problems.

Alcohol-related health problems are thought to be vulnerable to primary prevention through education, increased penalties for accidents resulting from excess consumption, and factors reducing per capita consumption, such as decreased availability (e.g., limited hours for the sale of alcohol and the reduction of beverage "proofs") and increased taxation. The problem is also vulnerable to secondary prevention through early detection of the symptoms of alcoholism and appropriate individual counseling and treatment.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Data should be collected regarding:

Number of hospital admissions and deaths due to cirrhosis of the liver;

The annual volume of alcohol sold (i.e., consumed) from data collected by local government jurisdictions;

The number and proportion of vehicle violations related to alcohol abuse (including violations involving drivers or pedestrians under the influence of alcohol);

The number and proportion of homicides and suicides related to alcohol;

Hospital admissions and deaths due to alcohol-related child or spouse abuse;

The number of patient entries and re-entries into detoxification facilities; and

The outpatient admissions of alcoholics.

Data are currently being collected on cases of cirrhosis of the liver (by the National Center for Health Statistics) and the volume of alcohol sales (by Federal, state, county, and municipal tax agencies); but these have generally not been collated, analyzed, and integrated by the same agencies. The collection of data for alcohol-related vehicle violations, homicides and suicides, and child or spouse abuse would require special surveillance mechanisms and definitive sample surveys. (For example, documentation of alcohol-related child or spouse abuse would require the establishment of a new code number for hospital admissions records.) The National Highway Traffic Safety Administration should be encouraged to collect and publish data on alcohol-related vehicle violations, while the National Institute of Alcohol Abuse and Alcoholism (NIAAA) should collect and publish data on homicides and suicides, child or spouse abuse, and entries into detoxification facilities. Special surveys may be required to collect outpatient admissions data. *CDC should conduct epidemiologic analyses of these available data to determine the extent of the problem and the efficacy of various interventions.*

STRATEGY OF INTERVENTION

The purpose of intervention would be to reduce adverse health and socioeconomic effects due to the consumption of alcohol.

Major steps of intervention would include:

Specific, imaginative health education in the communities regarding the appropriate uses of alcohol and the adverse effects of alcohol abuse. These efforts would be directed through schools, churches, family structure, etc., and aimed at teenagers and other high risk groups. *With authorizing legislation, CDC should coordinate the implementation of these community programs through the State health agencies, school systems, and voluntary agencies. In this effort, CDC should work closely with other Public Health Service (PHS) agencies currently involved in this field.*

More severe penalties for alcohol-related motor vehicle and work environment accidents, coordinated by State governments in conjunction with Federal incentives (e.g., removal of Federal subsidies for failure to enforce penalties).

Increasing the availability of clinics for early counseling and rehabilitation, using approaches similar to that of Alcoholics Anonymous, *with coordination of the activities of CDC, the rest of the PHS, and the State health agencies.*

Studies to assess the effectiveness of various methods of intervention, such as limiting hours for sale of alcohol, increasing the cost of alcohol by taxation, changing the minimum legal age for drinking, and other interventions implemented by NIAAA. *These studies would be coordinated with CDC to assure appropriate attention to current epidemiologic concepts of prevention.*

Development of specific strategies for prevention of alcohol-related morbidity and mortality, based on studies of efficacy of various interventions. *These strategies should be developed collaboratively by NIAAA in cooperation with CDC.*

Epidemiologic studies on the causes of alcohol abuse (e.g., why alcoholism is prevalent among specific groups). *CDC should collaborate with NIAAA in designing and conducting these studies.*

Research on the relationship between different body metabolisms and degrees of craving for alcohol, conducted by NIAAA, National Institute of Health (NIH), and academic centers.

Studies to evaluate the rates of cure in detoxification facilities and other programs, conducted by NIAAA.

CANCERS OF MEDIUM TO HIGH INCIDENCE SUBJECT TO PREVENTION OR SUCCESSFUL INTERVENTION WHEN DETECTED EARLY

PROBLEM STATEMENT

Cancer is the second leading cause of death in the U.S. and in the process produces substantial illness and suffering. A significant number of cases of certain types of cancer are entirely preventable. In addition, deaths from some types of cancer can be prevented if the cancer is detected early and treated properly.

HEALTH PROBLEM DEFINITION

Cancer causes a substantial drain on health care resources and on the national economy. The tragic effects on the families of cancer victims are obvious.

Cancers of the colon, rectum, prostate, cervix, and breast are more easily detected than others and are significant contributors to the overall problem. These cancers most often affect persons older than 30 years, with specific age, sex, and racial characteristics depending on the particular cancer. Some, such as breast cancer, show a familial tendency.

With the exception of cancers such as some carcinomas of the lung and mesothelioma, the causes of cancer are unknown, and the problem, therefore, is only selectively vulnerable to primary prevention. However, these selective vulnerabilities are important because of the relationships of these cancers to factors presumably quite vulnerable to intervention, such as smoking and exposure to other known carcinogens. Other types of cancers whose causes are not yet known, are vulnerable to secondary prevention through early detection and prompt medical and/or surgical intervention.

PROPOSED PLAN TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Data on morbidity and mortality of cancer should be collected on a standardized national basis. Although some States have excellent cancer registries, others have registries that are not currently adequate. Those registries that do exist should be supported and modified to collect the data needed. Since the most accurate data are obtained from pathology reports, surveillance mechanisms requiring pathological reporting should be established throughout the nation.

STRATEGY OF INTERVENTION

The purpose of intervention would be to: 1. reduce currently preventable morbidity and mortality due to cancer; and 2. develop a data base that

will permit epidemiologic investigations of various types of cancers to better understand causation and, thus, to increase the opportunities for prevention.

Major steps of the recommended intervention would include:

Development and expansion of a data base on cancer, coordinated by CDC. CDC, in conjunction with State health departments, should assure development of a system of mandatory reporting of pathological findings by hospital laboratories, and should stimulate development of uniform nationwide cancer registries.

Selective screening of specific populations (i.e., those characterized by factors suggesting that they are at high risk of developing cancer) for early detection and prompt, appropriate intervention (e.g., screening programs must be closely related to treatment programs). These services should be provided under the aegises of State and local health departments in association with private medical and voluntary health organizations. The National Cancer Institute (NCI) currently awards some grants to States for cancer screening activities (when such screening is part of a clinical trial or demonstration project). *Because of CDC's lengthy and continuing relationship with State and local health departments via disease control grants, the Center should seek a role in providing national coordination for such selective cancer screening programs to assure adequate emphasis on prevention. To assist this process, CDC should consider expanding the scope of its current disease control grants to State and local health departments to include some support for selective cancer screening. CDC should also explore with NCI the possibility of assisting in the administration of NCI grants, perhaps by using the "pass through" mechanism, to integrate the NCI programs with the rest of the preventive services delivery system.*

Provision of health education on prevention, detection, and treatment of certain cancers by State and local health departments in cooperation with voluntary organizations. *Here again, CDC should provide national coordination for these activities.*

Experimental use of chemotherapy to determine its effectiveness on various types of cancer, coordinated by NCI.

Basic research on the causes of cancer, coordinated by NCI.

CARDIOVASCULAR DISEASE

PROBLEM STATEMENT

Too many Americans die prematurely or suffer unnecessarily from preventable heart disease.

HEALTH PROBLEM DEFINITION

Cardiovascular disease is the leading cause of death in the United States, and is second only to cancer as the leading cause of lost years of productive life. Risk is related to age and sex with males being affected more often than females, particularly during productive years. The disease has geographic distribution patterns with mid-West and Rocky Mountain areas enjoying lower rates. Risk factors that have been identified to date include hypertension, elevated blood lipids, cigarette smoking, diabetes, and inherited genetic factors; obesity and sedentary living are probably also contributing factors. Heart disease is the single largest cause of health costs: the direct and indirect costs of cardiovascular disease in the U.S. in 1975 were estimated to be $50.4 billion.

Although not all of the facts are in, available evidence strongly suggests that cardiovascular disease is vulnerable to primary prevention. Hypertension control, prudent diet, exercise, and reduction in tobacco use appear to have had a definite positive effect on mortality trends in the United States in recent years. Evidence suggests that cardiovascular disease is vulnerable to secondary prevention as well: hypertension diagnosis and treatment appear to prevent congestive heart failure, renal failure, stroke and sudden death; chances of recurrence of myocardial infarction are reduced when the patient stops smoking; effective emergency medical service to victims is generally thought to decrease mortality.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Accurate mortality data have been collected for cardiovascular disease. The death rate has decreased, but, because of inadequate morbidity data, reduced incidence of the disease has not yet been proved. Variations in regional and local incidence should be evaluated and the incidence of non-hospital cases should be measured to help define the extent of hypertension, angina pectoris, congestive heart failure, and other related heart diseases.

Not all types of data needed to calculate these indices are being collected. *CDC should collaborate with the National Center for Health Statistics and Professional Standards Review Organizations to modify*

existing surveillance mechanisms and develop new surveillance mechanisms to obtain more complete incidence data. Suggested methods include the collection of hospital discharge data on a national basis and the study of public and private ambulatory care needs for incidence of non-hospital cardiovascular morbidity.

STRATEGY OF INTERVENTION

The purpose of the intervention would be to: 1. reduce the controllable factors proven or suspected to increase the risk of heart disease; and 2. diagnose and treat coronary artery disease in its early stages of development.

The Committee urges CDC as the "Advocate for Prevention" to undertake bold steps, in association with State and local health departments and other Federal agencies, to control cardiovascular morbidity and mortality. A strategy to accomplish this would include the following steps:

Implementation of national health education programs pertaining to risk factors such as hypertension, smoking, exercise, diet, and possibly stress. *CDC, building upon the knowledge and experience gained through the efforts of the National Heart, Lung, and Blood Institute (NHLBI) should expand health education programs. The Center should coordinate these programs nationally, with cooperation from such organizations as the American Heart Association, the American Medical Association, and the National Clearinghouse for Health Education.*

Initiation by health-care deliverers of aggressive clinical methods to identify, locate and treat persons known to be at high risk of developing heart disease, i.e., persons with hypertensive cardiovascular disease, history of heart disease, family history of hypertension, etc. (This activity would be somewhat analogous to emerging concepts in the control of sexually transmitted diseases by identifying persons who have had the diseases and then focusing the delivery of diagnostic and treatment services on them.) *CDC should encourage public and private deliverers to undertake such efforts.*

Implementation of screening and treatment programs, made available to all at low or no cost, to identify and treat persons with multiple risk factors and health hazards such as hypertension, blood lipids, glucose, obesity, and family history of heart disease. *CDC should coordinate these programs by awarding grants and assigning personnel to State and local health departments and by soliciting cooperation from the private medical community.*

Application, evaluation, and promotion of bold techniques of behavior modification (including health hazard appraisal) and arrangement of personal behavioral support services (e.g., techniques similar to those used successfully by Alcoholics Anonymous). *CDC should coordinate this effort by awarding grants (and assigning*

personnel as appropriate) to State and local health departments to support such programs and by assisting private physicians and industries in applying these techniques.

Encouragement of a healthful, prudent, positive lifestyle particularly in children and youths (e.g., stressing the importance of a nutritious versus a harmful diet and of smoking versus non-smoking), and development and distribution of definitive guidelines for individuals interested in heart disease prevention but confused by conflicting advice (e.g., eggs are harmful versus eggs are healthful). *CDC, in cooperation with NHLBI, should continually review and evaluate the literature to develop definitive guidelines and should serve as a clearinghouse to provide the public with up-to-date information on positive lifestyles and methods for reducing risk factors.*

Enactment and strict enforcement of food labeling laws by the Food and Drug Administration. *CDC should lend its support to advocacy efforts for such legislation.*

Continuation of research and evaluation of cardiovascular intervention methods. NIH and other agencies should conduct basic research in cardiovascular disease pathogenesis and prevention. *In cooperation with NIH, CDC should explore the possibility of using its specific epidemiologic expertise to conduct applied research on cardiovascular disease and to evaluate various intervention methods.*

Curtailment of any type of assistance to the tobacco industry by supporting the Secretary, DHEW, in his anti-smoking campaign, by aiding farmers who substitute other crops for tobacco, and by raising tobacco taxes to offset the health care cost liability associated with smoking. *CDC should support such efforts through linkage with other organizations such as the American Lung Association, the American Medical Association, etc., in a common voice against subsidies for the production of tobacco products.*

Promotion of nation-wide physical fitness by encouraging the establishment of exercise facilities in business and industry, by encouraging management and labor unions to use these facilities, and by reviving school physical education programs. *CDC should evaluate current models of physical fitness programs in the U.S. and other countries, and provide management in business and industry with information on their effectiveness. These activities would be linked with those of other agencies such as the Department of Education, the Department of Labor, unions, etc.*

CONTAMINATION OF DRINKING WATER

PROBLEM STATEMENT

The health of consumers is being adversely affected by supplies of drinking water that are contaminated by sewage, industrial, and possibly radioactive wastes.

HEALTH PROBLEM DEFINITION

The problem has potential nationwide impact on both public and private water supplies. All persons drinking from a source of contaminated water are affected. The problem is caused by industrial, sewage, pesticide, and possibly radioactive products spilling into water supplies and by inadequate treatment of water before consumption.

The consequences of drinking contaminated water include the spread of waterborne communicable diseases, poisoning due to toxic agents, and exposure to carcinogens.

The problem is vulnerable to primary prevention by identifying contaminants and developing programs to eliminate them at source or by treatment; and by ongoing surveillance operations.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Variables to be measured include levels of contamination from specific industrial, radioactive, sewage, and pesticide sources; the effect on health of specific contaminants; levels of contamination of public and private water supplies; and degree of effectiveness of sewage disposal systems and potable water purification systems.

Proposed steps to obtain the necessary data involve mandatory reporting of all usage of industrial products and by-products and standardized surveillance procedures.

STRATEGY OF INTERVENTION

The purpose of intervention is to prevent contamination of water supplies and subsequent adverse effects on health and to continue and improve current treatment.

The major steps of the recommended intervention would include:

> Restoration of water/sewage standards as a Public Health Service responsibility. *This effort would be coordinated by CDC, in cooperation with the Environmental Protection Agency (EPA). EPA would be responsible for the legal and technical aspects, while CDC would be responsible for the health aspects.*

Establishment of Federal standards for safe water derived from studies of the effect of contaminants on human health. A source of Federal assistance needs to be re-established to respond to questions and requests for assistance on matters of water contamination from local health departments, as well as from private citizens. *This would be the joint responsibility of CDC and EPA.*

Development of techniques to identify water contamination, including the identification of contaminants known to be related to human disease and the development of measurement techniques. *CDC would coordinate such development in close cooperation with EPA and State and local health departments.*

Identification of sources of contamination by State and local health departments *with assistance from CDC.*

Elimination of sources of contamination as appropriate by State and local health departments *with assistance from EPA and CDC. CDC and EPA should also intervene in interstate matters as appropriate and assist industry in eliminating contaminants or in altering manufacturing methods as appropriate.*

DENTAL DISEASES

PROBLEM STATEMENT

Preventable dental diseases affect 90% of the U.S. population. Complications from dental diseases include loss of teeth, nutritional difficulties, and local and systemic infections.

HEALTH PROBLEM DEFINITION

Dental caries exist in 90% of the population and periodontal diseases occur in varying degrees of severity among the entire population. They affect all age groups and result in poor dentition, defective speech patterns, high costs for dental care, and social and psychological problems due to cosmetic factors. Currently 28% of the population is edentulous versus 32% four years ago.

In 1976-77, $8.5 billion was spent on dental care, $2.5 billion of which was for caries. Such high costs for dental care indicate a need for professional focus on preventive measures.

Dental caries and periodontal diseases are caused by poor dental hygiene, improper diet, inadequate fluoridation of water supplies, and lack of access to professional dental care. Dental diseases are vulnerable to primary prevention. Fluoridation of community water supplies is the established public health measure for preventing caries. Other primary prevention measures include fluoride mouth rinse programs, training in proper dental hygiene, and diet modification (e.g., reduced between-meal intake of sugar). Prevention of periodontal diseases is more complex and involves personal hygiene, professional care, and identification of risk factors. Dental diseases are vulnerable to secondary prevention through professional dental care (i.e., prophylaxis and surgery).

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Data on the following measures should be collected, with CDC responsible for the first five measures and the National Center for Health Statistics responsible for the last:

Percent of population whose water supplies contain optimal fluoride levels;

Numbers of decayed, filled, and missing teeth in children and young adults;

Prevalence of dental caries and periodontal diseases in adults;

Number of edentulous adults;

Prevalence of local and systemic infectious complications due to dental problems; and

Number and distribution of dental health care professionals.

Complete national data are not necessary to assess the effectiveness of intervention; properly conducted sample surveys would provide sufficient information. Existing surveillance mechanisms currently furnish data sporadically at the local level and could be used to collect the needed data at the national level (e.g., surveys by the National Center for Health Statistics).

STRATEGY OF INTERVENTION

The purpose of intervention would be to reduce the incidence of dental caries and the severity of periodontal diseases; maintain normal dentition; and increase the availability of dental care to the general public.

Major steps of the recommended intervention would include:

Mandatory fluoridation of all community water supplies, school water supplies and mouth rinse programs, coordinated by State and local governments with authorizing legislation. An alternative approach would be to provide incentives for fluoridating water supplies. *CDC should provide model legislation and small grants to counties, especially rural counties, to purchase fluoridation equipment. CDC should provide information and expert testimony to assist local officials in convincing the community of the benefits of fluoridation.*

Education in the schools regarding dental hygiene, coordinated by State public health and education departments. *CDC would provide educational materials, grants and/or assigned personnel for educational activities, in cooperation with the American Dental Association.*

Education of the community regarding dental prophylaxis and hygiene, coordinated by State and local governments. *CDC would provide educational materials, grants and/or assigned personnel for educational activities, in cooperation with the American Dental Association.*

Increased availability of professional dental care and services to the general public, coordinated by State governments with authorizing legislation. *CDC should encourage the production and geographic distribution of manpower through the National Health Service Corps, etc.*

Expansion of third-party coverage for costs of dental care (e.g., payment for dental care for children up to the age of 16 and payment for prophylactic care for the entire population). *CDC should assist in the collection of information on third-party coverage (e.g., estimations of the percentage of persons not covered).*

Provision of selected prophylactic supplies and equipment (e.g., gel, fluoridation equipment, etc.) in support of local fluoridation programs, *coordinated by CDC.*

DISEASES CAUSED BY HAZARDOUS HEALTH EXPOSURES IN THE WORKPLACE

PROBLEM STATEMENT

Our knowledge of the disease and death caused by substances in the workplace, while very incomplete, is sufficient to suggest that we are on the threshold of "an epidemic" of occupationally-related disease. The problem appears greater than previously estimated due to recent studies uncovering new carcinogens, toxins, and mutagens in the workplace. Principal diseases currently known to be work-related include certain cancers, respiratory conditions, and neurologic disorders.

HEALTH PROBLEM DEFINITION

At least 100,000 deaths annually may be attributed to work-related disease. Many of these diseases are never linked to substances in the workplace because of the significant latent period between exposure to the causative agent and appearance of the induced disease. Some experts estimate that a significant percentage of all cancer mortality may be related to substances in the workplace.

This increasingly important problem directly affects both civilian and military workers exposed to hazardous substances; indirectly it affects the residents of the community in which these workers live. The problem has significant adverse effects on the national economy by causing a loss of productivity and an increase in health care costs.

Work-related diseases may be caused by exposure to certain hazards, such as chemicals, dusts, physical agents, and fumes. A major impact can be made on the problem through primary prevention: workers can be protected from exposure by implementing hazard control technologies and by educating workers to use safe working procedures. The problem is also vulnerable to secondary prevention through early detection and treatment of work-related disease to arrest progression and by informing workers previously exposed of means of reducing the risks of prior exposure (e.g., warning asbestos-exposed persons to stop smoking).

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Epidemiologic methods should be applied to occupational health hazards to define the problem more accurately. Specific data needed are:

The identification of potential health hazards;

The number of workers exposed to each hazard; and

Accurate morbidity and mortality statistics based on prior work exposure.

The data currently being collected are inadequate because an industry will report a disease only if it admits that the disease is work-related. New surveillance mechanisms are needed to include morbidity and mortality reporting related to prior occupation and to accurate identification of cause of death. Proposals for obtaining the needed data include:

Training both workers and health professionals to recognize diseases that are potentially work-related;

Conducting prospective epidemiologic studies;

Conducting retrospective epidemiologic evaluations; and

Improving morbidity and mortality reporting to include occupational and geographic data (e.g., including occupation and location on death certificate, keeping detailed occupational data in medical records to facilitate epidemiologic studies, etc.).

STRATEGY OF INTERVENTION

The purpose of intervention would be to reduce morbidity and mortality related to occupational diseases. Major steps of the recommended intervention would include:

Identification and epidemiologic evaluation of hazards present in the workplace to assess their impact on health. *This assessment should be coordinated by CDC's National Institute of Occupational Safety and Health (NIOSH) upon expansion of its capability to provide the necessary laboratory and epidemiologic skills, utilizing the capabilities of the Educational Resource Centers, where possible, with involvement by State and local health departments.*

Immediate and strict enforcement of adequate disease prevention legislation for *known* work-related hazards, *coordinated by CDC (NIOSH), with involvement by State and local health departments and by the Department of Labor as appropriate.**

Immediate increase in number of trained industrial hygienists and other occupational health professionals through training *sponsored (i.e., funded) by CDC (NIOSH) in cooperation with schools of medicine, schools of public health, and State and local health departments.*

Education of workforce regarding:

Possible hazards;

The identification of occupational diseases;

The need for occupational health programs and services; and

The need for "Right of Entry" by surveillance agency.

*The Occupational Safety and Health Administration (OSHA) is currently responsible for the enforcement of exposure standards in the workplace.

Education should be the joint responsibilities of CDC (NIOSH) and the Department of Labor (Occupational Safety and Health Administration and Mining Safety and Health Administration) with involvement by State and local health departments.

Training and continuing education of health professionals to include occupational data in medical histories and to recognize occupational diseases. The data would be collected by a national surveillance system and analyzed to determine patterns of disease. *The training and surveillance system would be coordinated by CDC (NIOSH).*

Development and expansion of occupational health programs in the States. *CDC (NIOSH) should provide grants to State and local health departments to stimulate this development.*

Increased emphasis on the service programs of NIOSH in the prevention of work-related disease. The Committee recommends that a change in NIOSH's name to, perhaps, the "Center for Occupational Health and Safety (COHS)" would visibly reinforce this concept of increased emphasis on service. (This change is not intended to denigrate nor diminish NIOSH's crucial responsibility for research in the field of occupational health and safety.)

INFANT MORTALITY

PROBLEM STATEMENT

A significant proportion of the 50,000+ infant deaths that occur annually are preventable.

HEALTH PROBLEM DEFINITION

Infant mortality is extensive: over 50,000 infant deaths occur annually and 12 of the 50 states have unacceptably high infant mortality rates of 18-to-29 per 1,000. U.S. infant mortality ratios in the District of Columbia, for example, are higher than Sri Lanka, a developing country (formerly known as Ceylon). Comparison of U.S. and Scandinavian infant death ratios and health reports indicate that 50% of U.S. infant deaths may be preventable.

The infant population at risk includes all newborns; however, much higher ratios are observed among infants born to women who are members of black, minority, or low socioeconomic groups; who are teenagers; or who are from selected geographic areas where access to medical care is limited, education is poor, and nutrition inadequate.

Prematurity and low birth weight are major causes of infant mortality and are related to age of the mother and her use of alcohol.* Other causes of infant mortality include the quality of prenatal and postnatal care, congenital abnormalities, infection, inadequate nutrition, and child abuse. The consequences of infant death are severe social and psychological trauma for the family.

Infant mortality is vulnerable to primary prevention through improved education emphasizing family planning, accessibility to family planning and abortion services as required, improved nutrition and nutrition education, and accessibility to perinatal care and genetic counseling. Infant mortality is vulnerable to secondary prevention in the form of good postnatal care.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Infant deaths should be epidemiologically evaluated by age, sex, cause of death, geographical location, parity, and quality of perinatal care.

Virtually all data required to calculate the measures listed above are currently being collected by the National Center for Health Statistics or by the Maternal and Child Health program. However, they are not evaluated in a useful way. *CDC should be responsible for the development of a nationwide surveillance system to collect and collate the data necessary to evaluate the problem and the effectiveness of the measures*

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*In review, one participant felt that maternal alcohol use has not been shown to explain variations in birth weight, while cigarette smoking is associated with measurable reductions in birth weight.

being taken. This surveillance system would include expansion of the Birth Defects Monitoring System to serve the entire country and to study patterns of the effects of drugs, parents' occupations, etc. on infant mortality. It would also include abortion surveillance.

The most important proposal for obtaining the data needed is to use the existing data in a way that most fully exposes problem areas. Studies should be conducted to determine which forms of intervention have the strongest impact on the problem of infant mortality. (For example, infant mortality rates before and after the application of programs supported by "Title V" appropriations could be compared.)

STRATEGY OF INTERVENTION

The purpose of the intervention is to reduce infant mortality and the frequency of congenital defects.

The major steps of the recommended intervention would include:

Expansion of perinatal services (improved pregnancy-outcome programs) to underserved areas, coordinated by the Health Services Administration.

Coordination and implementation of effective nutrition programs directed toward those groups of women who are least likely to be aware of the importance of proper diet during pregnancy.

More effective marketing of available family planning services for both males and females as well as guaranteed availability of abortion services at no cost to all women who require or request it. This would be coordinated by the Health Services Administration, *with an abortion surveillance system maintained by CDC.*

Extension of the availability of genetic counseling. Schools of medicine and schools of public health should expand training in genetic issues to their students and graduates through continuing education programs.

Identification of high-risk pregnancies and provision of perinatal services to all those women in this category, e.g., high school dropouts, by the Health Services Administration, State and local health departments, and other appropriate agencies.

MOTOR VEHICLE ACCIDENTS

PROBLEM STATEMENT

Preventable motor vehicle accidents occur, frequently causing serious injuries and disabling conditions that can also be prevented. The vehicles most often involved in accidents are automobiles, motorcycles, and trucks.

HEALTH PROBLEM DEFINITION

Motor vehicle accidents are one of the ten leading causes of death. They are the primary cause of death for the white population age 15-34 years and the second cause of death for the black population in the same age group. They are also the third largest cause of loss of potential years of life for the entire population.

The problem affects everyone in the population, either as a driver, a passenger, or a pedestrian. Those affected suffer such consequences as lost years of productive life, economic loss from property damage, economic loss and personal misery due to injuries or disabilities, and time and economic loss due to the accident and its legal repercussions.

The primary causes of motor vehicle accidents are:

Mechanical: Vehicles are not designed for maximum safety, are subject to mechanical failures, and lack passive restraints. Certain vehicles (i.e., motorcycles) represent extraordinarily high risks.

Road system: Road systems are not designed for maximum safety and may have narrow and soft shoulders, narrow median strips, malfunctioning or absent traffic signals, poorly placed road signs, inappropriate speed limits, or roads in need of maintenance and repair.

Human: People disregard road signs and speed limits, drive while under the influence of alcohol or drugs, drive carelessly, fail to use seat and shoulder belts, drive when in poor physical condition, and lack knowledge about good driving habits.

Medical: Emergency medical services are frequently inadequate and the public lacks sufficient knowledge about first aid.

Environmental: Adverse weather conditions can make driving more hazardous.

The problem is vulnerable to primary prevention through strict enforcement of laws for safe design and manufacture of vehicles, for safe design of road systems, and for mandatory periodic driving tests before renewing operators' licenses. Other primary prevention strategies include maintenance of road systems appropriate to the environment, a more uniform and standardized driver education program, ongoing education programs on vehicular safety, mandatory passive restraint laws, mandatory seat belt laws, and laws requiring helmets for riders of motorcycles and motorbikes. The problem is also vulnerable to secondary prevention through efficient and effective emergency medical services and inclusion of first aid procedures in driving tests.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Data should be collected on:

The total number of accidents resulting in injury;

The number and percent of accidents resulting in death;

The number and percent of accidents resulting in hospitalization;

The number and percent of accidents by:

- Type, manufacturer, and year of vehicle
- Age of driver
- Use of seat belt
- Type of mechanical failure
- Type of road condition
- Type of road
- Speed of vehicle
- Presence of passive restraint
- Level of alcohol in blood
- Type and amount of drugs in system
- Vision and auditory measurement of driver
- Sex of driver
- Number of years driver has had an operator's license
- Number of previous traffic citations received by driver involved in accident
- State, and
- Locale of accident (urban, suburban, rural);

The average length of time from accident to initiation of care, by type of care provided (e.g., first aid or emergency medical services);

The number of people who die before emergency medical services arrive; and

The number of citations for violation of traffic laws versus the number of convictions obtained.

A new surveillance mechanism should be developed by the Department of Transportation (DOT) to collect and evaluate data on citations and convictions. The remaining data are either currently being collected or could be collected by modifying an existing surveillance mechanism. *CDC should analyze the collected data from an epidemiologic perspective and inform the public of the health effects of accidents.*

Proposals for obtaining the needed data include:

Addition of the conditions listed above in "the number and percent of accidents by" to the accident report;

Addition of the initiation of first aid techniques to the accident report;

Addition of the time for emergency medical services to arrive to the accident report;

Addition of "death before emergency medical services arrived" to the accident report;

Addition of traffic court reporting to the surveillance system; and

Collection of specimens to test for drugs (other than alcohol) in the systems of persons involved in accidents for limited epidemiologic studies.

STRATEGY OF INTERVENTION

The purpose of intervention would be to reduce the number of motor vehicle accidents, the number of deaths resulting from accidents, and the number and severity of injuries resulting from accidents. Special attention would be focused on reducing the number of drunken drivers.

Major steps of the recommended intervention would include:

A mandatory passive restraint law, coordinated by State governments with authorizing legislation.

Reduction of speed limits on high risk roads, coordinated by State government with authorizing Federal legislation.

Strict enforcement of existing speed limits, coordinated by State and local governments.

Strict enforcement of "Driving Under the Influence" laws, coordinated by State and local governments.

Mandatory combination ignition systems that are inoperable if driver is drunk, coordinated by DOT with authorizing legislation.

Determination of the extent of the involvement of drugs (other than alcohol) in accidents.

Laws for safe design of road systems, including wider shoulders and median strips; size and placement of road signs; length of entrance and exit ramps. Enforcement of these laws would be coordinated by DOT with authorizing Federal legislation.

Establishment and enforcement of safe vehicle weight limits based on accident records, jointly coordinated by DOT and State governments with authorizing Federal legislation.

Construction of road lanes to separate high risk vehicles (e.g., large trucks) from other vehicles, coordinated by DOT with authorizing legislation.

Maintenance, repair, and upgrading of present road systems, coordinated by State and local governments with designated funding.

Regulation of motor vehicle manufacturers to comply with rigid standards for safe vehicular design and operation, particularly in relation to brakes, bumpers, windshields, dashboards, lights, mirrors, and restraint mechanisms. Such regulation would be coordinated by DOT with authorizing Federal legislation.

Requirement of drivers to pass a driving test at periodic intervals in order to renew their operators' licenses. The interval would be decreased as the driver got older. This effort would be coordinated by State governments with authorizing legislation.

Addition of first aid procedures to the driver's license test, coordinated by State governments and school systems, with authorizing legislation.

Improved training of license examiners to evaluate physical status of applicants, coordinated by State governments with authorizing legislation and training programs.

Restriction of driving privilege to trained and qualified individuals by eliminating high risk groups (e.g., alcoholics) from the population of drivers. Elimination would be coordinated by State governments with authorizing legislation.

NEWLY RECOGNIZED DISEASES AND UNEXPECTED EPIDEMICS OF PUBLIC HEALTH SIGNIFICANCE

PROBLEM STATEMENT

Previously unknown diseases, previously unrecognized problems with known diseases and vaccines, and serious imported diseases are regular occurrences in the U.S. CDC can adequately handle only acute emergencies of limited scope. It does not have the financial resources to cope with major problems or to support major continuing efforts to define a problem and to discover effective control measures.

HEALTH PROBLEM DEFINITION

New and unexpected problems (e.g., Legionnaire's Disease, infant botulism Salk vaccine induced paralysis, staphylococcal 80/81 hospital infections, arboviral encephalitis, etc.) occur annually. A particular problem may affect relatively small numbers of people (e.g., Salk vaccine induced paralysis), or it may involve essentially the entire population, as in the case of a new strain of influenza. Some diseases, of themselves, are of major importance to the country. However, by virtue of the fact that many problems are previously unknown or poorly understood, the economic and psychological impact of the detection of a particular problem is frequently far out of proportion to the actual consequences of the disease.

The causes of unexpected problems are highly variable, with origins ranging from microbes to toxic substances to psychological phenomena. In most cases there is a potential for primary prevention. Secondary prevention varies according to the particular problem.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

The collection of previously specified data is not applicable to the problem of unexpected epidemics. Recognition of the occurrence of an unusual event may be the result of:

CDC's continuing, routine surveillance of a variety of different diseases;

CDC's communication with State and local health departments and with the scientific community regarding the incidence of disease and the appearance of seemingly new diseases; and/or

CDC's role regarding special infectious or toxic problems.

When an unexpected problem is identified, CDC, in cooperation with other health agencies, initiates appropriate investigative procedures to obtain relevant data.

STRATEGY OF INTERVENTION

The purpose of intervention would be:

Early detection and description of a problem and its potential consequences; and

Expeditious investigation of a problem and the research necessary to control, contain, and/or prevent its spread.

Major steps of the recommended intervention would include:

Appropriations for unexpected problems within CDC's annual budget. CDC's present system of response to newly recognized diseases and unexpected epidemics is adequate, but requires significant financial support, making it mandatory that sufficient funds be available.

Continuing routine surveillance of different diseases, *coordinated by CDC.*

Constant communication of CDC with State Health Departments and with the scientific community.

Emergency contract authority accompanied by appropriate grant contract authority and funds to permit the emergency and longer-term investigations needed to evaluate unexpected problems, determine their public health significance and develop effective control measures. *These efforts would be coordinated by CDC in association with the rest of the PHS.*

Direct participation of CDC in international surveillance activities to assess the potential for importation of serious diseases from other countries (e.g., Marburg and Lassa fever). For diseases identified as potential threats, development of national facilities for the isolation and management of cases and contacts should be considered.

Applied public health research (e.g., follow up to determine the cause of Guillain-Barré syndrome and methods to prevent recurrence) *to be conducted by CDC, in cooperation with NIH and other PHS agencies.*

NOSOCOMIAL INFECTIONS

PROBLEM STATEMENT

A large number of preventable hospital-acquired infections are occurring that result in much unnecessary morbidity and mortality as well as increased medical costs.

HEALTH PROBLEM DEFINITION

Approximately 5% of the estimated 37,000,000 short-term hospital admissions to civilian facilities developed one or more nosocomial infections in 1975. The incidence has not changed significantly in recent years, but the types of infections and the populations affected have varied. About one-third of all infections result from unsatisfactory hospital practices or techniques. The misuse of antibiotics by medical personnel further exacerbates the problem. Although a large proportion of the infections could be prevented, many individual hospitals have no incentive to take preventive measures.

All hospitalized persons are at some risk of acquiring a nosocomial infection. Selected groups at particularly high risk are those who are debilitated or immunosuppressed. The consequences of such infections include premature deaths, extended hospital stays, increased medical costs, permanent disabilities, repetitive or additional operations, loss of income and productivity, and the spread of resistant organisms in the community.

The problem is vulnerable to primary prevention through proper design and maintenance of hospital equipment; proper isolation and treatment of patients; selective antibiotic usage; and education and motivation of hospital personnel including physicians regarding appropriate hospital environments, techniques, and procedures. Secondary prevention, through development of a surveillance program for early detection of cases and new and unexpected problems, is also possible.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEMS MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

There is significant need for a nationwide, comprehensive surveillance system to collect and analyze data on nosocomial infections. The data needed include the age and sex of the infected person, the date of onset of infection, the hospital's name and location, the physician's name, the site of infection, the nature of the infectious organism, any relevant surgical or procedural data (e.g., operator, place and date of operation, type of technology), and any relevant denominator data regarding populations at risk. Several hospitals are currently collecting these data, but a more widespread effort is needed. A periodic quality assessment

of the laboratory making the diagnosis of infection is also recommended. Data collection and analysis must be standardized to permit valid comparisons and evaluation. Existing surveillance mechanisms can be expanded into state-wide routine reporting systems for selected nosocomial infections. *CDC might expand the current SENIC (Study of the Efficacy of Nosocomial Infection Control) data collection and analysis procedures.*

Careful and continual study is required to identify optimum data systems for hospital, statewide, and national reporting of infections. The data collected should be concurrently analyzed by a hospital epidemiologist, evaluated as to outbreaks and trends, and reported to the appropriate authorities. The issue of confidentiality and accessibility of records must be carefully considered in light of the Freedom of Information Act to ensure complete reporting while maintaining a balance between liability and the public's right to access.

STRATEGY OF INTERVENTION

The purpose of intervention would be to reduce the incidence and severity of the mortality and morbidity due to nosocomial infections.

Major steps of the intervention would include:

Ensuring that each hospital has at least one professional staff person responsible for concurrent surveillance of infection, appropriate investigation and control. Such assurance would be coordinated by State and local health departments and the Joint Commission on Accreditation of Hospitals (JCAH), with authorizing legislation and/or regulation. *CDC should continue laboratory quality assurance.*

Training/motivation by CDC of hospital personnel and physicians regarding nosocomial infection techniques, procedures, and reporting. This training would be conducted in cooperation with hospital infection committees, accrediting agencies, medical societies, and government and university programs.

Revision and improvement of standard procedures for intrahospital surveillance and patient care, *to be coordinated by CDC in cooperation with JCAH.*

Development of statewide programs for surveillance and special investigations, including routine hospital-based reporting systems, *to be coordinated by State and local health departments and CDC*

Development of a national surveillance system to coincide with the development of statewide programs, described above, *to be coordinated by CDC.*

Development and support of research to prevent and control nosocomial infections, *to be coordinated by CDC.*

Development and support of a coordinated effort by CDC, State health departments, universities, and hospitals to prevent and control nosocomial infections.

Reduction of the number of inappropriate hospital admissions, procedures, and treatments. For example, catheterizations are performed more often than necessary, as are appendectomies, hysterectomies, and tonsillectomies. This responsibility lies with quality control groups (e.g., the Joint Commission on Accreditation of Hospitals, the American Medical Association, third party payers, specialty medical groups, hospital tissue committees and the Professional Standards Review Organization).

Development of a mechanism whereby State and local health departments can provide assistance to hospital infections control committees, or can send an epidemiologist to assist a hospital in assessing the status of infections in the hospital.

SMOKING

PROBLEM STATEMENT

Despite the irrefutable association of smoking with a variety of health problems, forty percent of American adults continue to smoke, and the number of teenagers and young adults taking up smoking is increasing. Smoking-associated health problems (e.g., malignancies, chronic obstructive pulmonary disease, arteriosclerotic heart disease, and vascular disease) are the most prevalent causes of death in adults; indirectly associated problems (e.g., accidental burns) are also occurring as a result of smoking.

HEALTH PROBLEM DEFINITION

Smoking is associated with four of the leading causes of death (heart disease, cancer, cerebrovascular disease, and arteriosclerosis) in people over the age of 50. It is also associated with pulmonary and cardiovascular disease. Although smoking most seriously affects people who smoke, it affects non-smokers as well, in the form of allergies, increased carboxyhemoglobin levels, etc.

Smoking has a significant impact on health care costs. Its influence on the national economy is contradictory: morbidity due to smoking leads to reduced productive lives for individuals, yet, tobacco growth and distribution are part of the nation's economic viability.

Smoking is promoted by peer pressure, availability of tobacco products, advertising, and parental example. It is thought to be vulnerable to primary prevention through heavy tobacco taxation, the elimination of tobacco farming, health education, modifications in advertising, reductions in tar levels, and the development of tobacco substitutes. It is vulnerable to secondary prevention through selective examination for early detection of the sequelae of smoking, the cessation of smoking, and treatment of identified diseases. Although smoking itself is not vulnerable to tertiary prevention, associated diseases may require rehabilitative programs.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Data should be collected on the following:

Smoking habits among the population (including type and amount of tobacco used and duration of smoking habit);

Prevalence of disease associated with smoking (determined according to specific population segments, smoking habits, and occupational exposures);

Accidents related to smoking (e.g., fires);

Mortality related to smoking (including deaths from both diseases and accidents associated with smoking); and

Amount of land used for growing tobacco.

Some of the data listed above are currently being collected. All the data needed could be collected with modifications of existing surveillance mechanisms.

STRATEGY OF INTERVENTION

The purpose of intervention would be to: 1. eliminate smoking as a cause of disease; and 2. identify at an early stage diseases associated with smoking so that efforts could be made to change behavior and therefore reduce morbidity and mortality related to smoking.

Major steps of the intervention would include:

Development of a data base for morbidity and mortality of diseases associated with smoking. The effect of reduced tar and nicotine cigarettes on morbidity and mortality and the interaction of cigarette smoking with substances in the workplace should receive particular attention. *CDC would conduct a continuing appraisal of the health problem, utilizing data collected through selective examination programs in conjunction with State and local health departments.*

Identification of harmful substances in tobacco products, *coordinated by CDC in cooperation with the National Heart and Lung Institute.*

Taxes on the production, importation, and sale of tobacco products (to raise the price of cigarettes), coordinated by the Treasury Department with authorizing legislation.

Reduction of nicotine and/or other harmful substances in tobacco products, coordinated by the Consumer Product Safety Commission.

Elimination of tobacco production by replacing it with other crops and by subsidizing other crops, coordinated by agricultural concerns, and development of other uses for tobacco, coordinated by the Department of Agriculture.

Health education programs in elementary grade levels, coordinated by HEW in association with State and local education and health agencies. *CDC's Bureau of Health Education would participate in this effort.*

"Stop Smoking" programs, including reverse advertising. *CDC's Bureau of Health Education should lead this effort in conjunction with State and local health departments and voluntary non-profit agencies.*

Limitation of manufacturers' advertising, coordinated by HEW with authorizing legislation.

Development of selective examination programs of specific population groups to look for diseases associated with smoking, *coordinated by CDC in conjunction with State and local health departments, schools of medicine, schools of public health, the National Heart and Lung Institute, and other voluntary agencies.*

Development of an accurate surveillance system for morbidity reporting and tabulation of diseases associated with smoking, *coordinated by CDC in conjunction with State and local health departments.*

VACCINE-PREVENTABLE DISEASES OF CHILDREN

PROBLEM STATEMENT

Outbreaks of childhood diseases that can be prevented through immunization (e.g., measles, mumps, rubella, pertussis, diphtheria, tetanus, and occasionally poliomyelitis) are still occurring. A significant number of cases of these diseases end in death. Furthermore, without maintaining at least the current levels of immunization activities, all these diseases will rapidly resurge to levels that characterized the pre-vaccine era.

HEALTH PROBLEM DEFINITION

One-fourth to one-third of all children in the United States are incompletely immunized. Due to continued presence of the disease agents and the large number of susceptible persons, this deficiency in childhood immunization has led to unacceptable levels of vaccine-preventable diseases in this country. In 1976, 41,000 cases of measles and 12,500 cases of rubella were reported. The primary segment of the population affected by vaccine-preventable diseases are children under 15 years of age; however, significant numbers of rubella and measles cases occur in the young adult population as well.

There are serious consequences of vaccine-preventable disease. Measles claims the life of one victim for every 1,000 reported cases; one-fourth to one-third of all cases of measles encephalitis require institutional care for life; in 1964, rubella caused 20,000 permanent congenital deformities in infants. These consequences of inadequate immunization impose a heavy economic burden on the medical care delivery system.

The vaccine-preventable diseases of childhood are perfect examples of diseases vulnerable to primary prevention (via immunization); education on the universal need for immunization, and programs to assure routine immunization for all infants and children, are needed. As community health problems, outbreaks of vaccine-preventable diseases are vulnerable to a sort of "secondary prevention" in the form of rapid outbreak containment through intensive epidemiologically directed immunization programs.

PROPOSED PLANS TO DEFINE THE HEALTH PROBLEM MORE ACCURATELY AND TO ASSESS THE EFFECTIVENESS OF INTERVENTION

Cases, deaths, and existing levels of immunity should be measured. Sample serologic surveys, and surveys of the efficacy and untoward effects of vaccines, and on the duration of immunity should be conducted. Benefits and risks of immunization, including economic impact, should periodically be assessed.

Some of the data needed to measure the factors mentioned above are being collected at the present time; however, existing surveillance systems are incomplete and disease occurrence is, therefore, underestimated. *CDC should either collect the data itself or award grants and assign personnel to State and local governments to collect the data.*

Proposals for obtaining the needed data include:

Aggressive search for cases not detected through routine reporting mechanisms;

Expansion of sources of reporting beyond doctor's offices to include school nurses, emergency rooms, etc.;

Continued use of annual U.S. Immunization Survey, supplemented with validating serologic surveys;

Assignment of high priority to the acquisition of data on the economic impact of vaccine preventable disease and immunization;

Continued collection of data on duration of immunity; and

Continued collection of data on vaccine effectiveness.

STRATEGY OF INTERVENTION

The purpose of intervention is to provide protection for individuals and reduce the likelihood of disease transmission in the community.

The major steps of the recommended intervention include:

Continued authorization and appropriation to enable CDC to provide funding and personnel to State and local health departments for delivery of immunization services.

Authorization of CDC to produce (or contract for the production of) vaccine, and to support vaccine research (e.g., on measles vaccine stability) in coordination with the Food and Drug Administration (FDA), Bureau of Biologics.

Settlement by legislation of issues of liability and compensation of victims. Determination of acceptable alternatives to present risk/benefit statement and informed consent form. (One alternative is to attach a cost factor to the price of vaccine and to create a national Board of Claims to hear and settle injury claims, an approach that would avoid the costly and time-consuming court process.) *CDC should advise and support the Secretary of HEW in this matter.*

Achievement of public acceptance for nationwide immunization programs through coordinated efforts of education and health agencies.

Legislation of mandatory immunization laws. *CDC should provide model legislation.*

Development and promotion of a uniform national immunization record for parents to maintain for each child, by CDC in cooperation with the American Medical Association and others.

Development by CDC of specific programs of immunization to identify and reach those segments of the population that are difficult to trace and for whom records of immunization are difficult to maintain (i.e., transients, migrant workers, etc.), to be implemented by State and local health departments.

Improvement and strengthening of surveillance and case investigation techniques used by State and local health departments.

Continued research on new and improved vaccines by CDC, National Institutes of Health (NIH), and FDA.

Development and updating of specific immunization strategies by the Secretary of HEW in consultation with public policy committees such as the Advisory Committee on Immunization Practices (or the proposed National Immunization Policy Commission if and when it is created).

The vaccine-preventable diseases of children have been largely brought under control. The Committee emphasized, however, that any decrease in present program efforts would surely result in a catastrophic resurgence of these diseases.

IV

IMPLEMENTATION OF STRATEGIES OF INTERVENTION

IMPLEMENTATION OF STRATEGIES OF INTERVENTION

The third committee meeting (May 31 - June 1, 1978) was designed primarily to achieve the following objective:

> Given descriptions of strategies of intervention to reduce unnecessary morbidity and mortality due to preventable health problems of high priority, specify CDC's role in the implementation of the strategies.

Before tackling this specific objective, the Committee members expressed two significant concerns that they wished to make explicit. They were:

> The need for their recommendations to be implemented; and
>
> The need for a Federal agency to be designated as the national focus for disease prevention.

These two concerns are discussed below.

The Need for Action

The Committee felt that implementation of its recommendations was of utmost importance. Many advisory groups have been convened to develop recommendations on issues similar to those addressed in Chapters II and III of this report. The fate of such recommendations seems predictable, for rarely have they actually produced any change. More often than not, the recommendations are destined to sit on a shelf, collecting dust. The Committee members expressed insistent concern that their recommendations not be ignored, but be converted by CDC into a plan for action. They felt that the time had come to stop talking about prevention and to start acting. They agreed that the technical knowledge to prevent much unnecessary morbidity and mortality is available. What is needed now is a national commitment to apply that knowledge in a rational (i.e., according to a systematic plan) and efficient manner.

The Need for a Designated Focus for Disease Prevention

The Committee members strongly emphasized the need for a Federal agency to be designated as the national focus for disease prevention. They felt that their recommendations would not stimulate action in the absence of a "lead agency for prevention" responsible for ensuring that such action occurs. They urged that CDC be so designated, with the authority necessary to assume these responsibilities and to serve as the national headquarters for disease prevention and public health.

The Committee cited several reasons why CDC is capable of assuming such a major role in prevention. Traditionally, CDC has been the arm of the Public Health Service that implemented disease prevention and control programs in cooperation with the States. As a result, it has a well developed, continuing, working relationship with the constituted public

health structure of the nation, i.e., the State and local health departments. Furthermore, there is at the Center a carefully nurtured expertise in disease surveillance and epidemiologic investigation supported by excellence in laboratory diagnosis. There is also a unique experience accrued from vigorous participation in international as well as domestic disease control programs. Perhaps most important of all is a long-standing orientation and commitment to the prevention of death, disability, and disease.

Because of these unique attributes, CDC stands alone among Federal health agencies in its potential for leadership of the Nation's emerging interest in disease prevention. While CDC cannot and should not be responsible for implementation of *all* the Federal efforts in disease prevention, no agency other than CDC possesses the combination of attributes necessary to play as effective a role as the national leader for prevention.

It was agreed that many persons, including the Committee members, already view CDC as the primary advocate for disease prevention among Federal health agencies, and therefore as the *defacto* focus for prevention. The Committee urged CDC to recognize and accept its role as the "champion for prevention" or the "watchdog for prevention" and to aggressively seek the formal delegation of authority to lead the nation's prevention activities and to ensure that other agencies develop appropriate prevention activities in their programs. The members sensed that the nation needs a "conscience for prevention" and felt that CDC has the responsibility to be that conscience. They wanted assurance that CDC would champion the cause of prevention "loudly, continuously, relentlessly."

The Committee wanted to emphasize this important leadership role of CDC and to bring it to the attention of the nation. It therefore recommended that CDC adopt the name, "National Center for Prevention and Public Health," to symbolize its new responsibilities.

The Plan for Action

After clarifying their perception of what CDC's primary role in disease prevention should be, the Committee members focused their attention on the specific objective of the meeting (i.e., specifying CDC's role in the implementation of the strategies of intervention to reduce unnecessary morbidity and mortality due to the preventable health problems of high priority). The members felt, however, that before they could discuss CDC's specific role in implementation, they needed to describe more precisely the actual steps that should be performed in order for a national strategy for prevention to be implemented.

Thus far, the Committee has performed the following two steps that seek to direct prevention activities toward the preventable health problems of high priority:

1. Define the nature, extent, and susceptibility to prevention of major health problems in the U.S., and determine which preventable health problems are of highest priority for resolution.

2. For each preventable health problem of high priority, describe the purposes and major steps of a strategy for reducing or resolving the problem.

The Committee concluded that the following steps, if implemented, would convert the recommendations developed in steps 1 and 2 into action (i.e., programs that reduce unnecessary morbidity and mortality due to the high priority health problems) and recommended that they be performed for the twelve high priority health problems.

3. For each preventable health problem of high priority, develop a plan for a program to reduce morbidity and mortality due to the problem. This plan would include specific objectives and the major work functions of the program and recommend an organization likely to possess the competency required to perform each major work function.

4. For each plan for a program to reduce morbidity and mortality due to a preventable health problem of high priority, test the effectiveness of the plan by implementing it on a limited geographic basis, and revise the plan as appropriate.

5. Inform the Surgeon General/Secretary, DHEW, of the nature and extent of the preventable health problem of high priority and provide him with the plan for a program to reduce morbidity and mortality due to the health problem.

6. Determine whether the recommended program is to be implemented. If so, select a coordinating agency.

7. Coordinate a program to reduce morbidity and mortality due to the preventable health problem of high priority:

   Develop specific and measurable program objectives.
   Specify in detail the work to be done.
   Determine the resources required to perform the work.
   Assign responsibility for performing each major work function.
   Ensure the availability of the required resources.

8. For each program to reduce morbidity and mortality due to the preventable health problem of high priority, monitor the performance of the work and the achievement of the program objectives.

Specific Responsibilities of CDC in the Plan for Action

The Committee applauded CDC for initiating the implementation of steps 1 and 2 by convening the CDC Programs and Policies Advisory Committee. It then urged CDC to assume the responsibility for ensuring that the remaining steps of the plan of action are implemented as well. This did not mean that CDC would necessarily be responsible for actually implementing each step. CDC would take the lead in ensuring that each step occurs, and would ask other agencies for assistance when necessary. The Committee stressed that the assumption of these new responsibilities would not be at the expense of CDC's traditional disease control programs but would be in addition to them.

The specific responsibilities to be assumed by CDC are these:

Steps 1 and 2

CDC would ensure that the nation's high priority preventable health problems would be assessed every 3-to-5 years, and that strategies of intervention for "addressing" these problems would be developed. In order to ensure that the results of this process represent a wide range of perspectives, an external committee (e.g., the CDC Programs and Policies Advisory Committee) or some other comparable mechanism would be utilized by CDC.

Step 3

CDC would ensure that a plan was developed for each preventable health problem of high priority. It would not do this alone, but would work with other appropriate agencies (e.g., State and local health departments, universities, health planning agencies, other Federal agencies) in developing certain sections of the plan when these agencies possess needed skills or expertise lacking within CDC. The Center would also involve other agencies by recommending, when appropriate, that they be responsible for implementing certain sections of the plan. In this way CDC would exercise its authority as the "watchdog for prevention," and ensure that others recognize prevention and include appropriate preventive components in their programs.

Step 4

CDC would ensure that the program proposed in the plan was tested on a limited geographic basis to determine its effectiveness in reducing unnecessary morbidity and mortality. CDC's unique relationship with State and local health departments would allow it to effectively and efficiently coordinate such a "pilot" project. CDC would evaluate the success of the pilot project and the probable success of the program if it were implemented nationally. The plan would then be revised as appropriate, based on the experience of the pilot project.

Steps 5 and 6

CDC would send the revised plan for reducing unnecessary morbidity and mortality due to a high priority health problem to the Secretary, DHEW, and urge his endorsement. The decision on whether or not the plan will be implemented and the designation of the coordinating agency and other agencies to participate in implementation is, of course, the Secretary's.

The Committee urged CDC to keep the public informed of progress in completing these first six steps. They felt that the public should be aware of the preventable health problems considered by experts to be of highest priority and of actions being proposed to address those problems.

Step 7

Although CDC would not be the appropriate coordinating agency for implementing all preventive health programs, the Committee felt that CDC would appropriately coordinate prevention programs when:

A comprehensive health problem clearly falls within CDC's present authority (e.g., nosocomial infections); and/or

No agency possesses the authority to launch a comprehensive program to address the health problem.

When an agency other than CDC is designated coordinator of a program, CDC should be available to assume responsibility for that section of the program that requires the unique capabilities, skills, and/or expertise possessed by CDC.

Step 8

The Committee emphasized this step as being the most crucial of all. The agency designated as coordinator for a program would also be responsible for monitoring the performance of the work of that program, as well as periodically assessing the progress toward achievement of the program's objectives. CDC would be responsible for completing this step *only* when it is the coordinating agency for a program.

Evaluation of CDC's Progress in Implementing the Plan for Action

The Committee felt that once this 8-step plan for preventing or reducing unnecessary morbidity and mortality was initiated, the committee that performed steps 1 and 2 should be responsible for evaluating CDC's progress in implementing its recommendations according to the remaining six steps. Such an evaluation should occur on an annual basis. Consequently, the Committee recommended that, since they performed steps 1 and 2, they should be reconvened by CDC in approximately one year to assess the status of their recommendations.

Organizational Improvements in CDC

The second objective which the Committee was asked to achieve during the third meeting was:

Given recommendations for CDC's role in the implementation of the strategies of intervention, suggest organizational improvements that would allow CDC to function more efficiently in that role.

The Committee felt that this objective should be expanded to pertain not only to CDC's specific role in the implementation of the strategies of intervention, but also to its primary role as the lead agency for prevention. If CDC were to assume such a major role in prevention, as recommended by the Committee in this report, its organization should allow it to function efficiently in that role.

The Committee agreed that CDC's present organization was probably appropriate for managing the services and programs it has provided in the past. They emphasized, however, that those services and programs are likely to change as CDC's responsibilities expand into new areas of prevention and disease control, and as it assumes the role of the focus for prevention. It is likely, therefore, that CDC's current organizational structure may no longer be appropriate for managing these new responsibilities.

The Committee provided several examples of difficulties caused by CDC's organization. For instance, the Committee mentioned many programs that cut across bureau lines when implementation requires the involvement of several bureaus or requires State and local health departments to touch base with several bureaus. A prime example of such a program is the encephalitis control program. In an encephalitis outbreak, the Bureau of Epidemiology conducts the case investigations; the Bureau of Laboratories performs the laboratory tests to confirm the diagnoses; and the Bureau of Tropical Diseases provides advice and consultation on appropriate control measures (e.g., spraying). Consequently, CDC more and more frequently has to appoint a staff member to serve as "project manager" to coordinate and manage programs. The frequency of these special appointments may be indicative of the need to seriously consider reorganization.

Due to the Committee's lack of detailed knowledge of CDC's specific programs, needs, and difficulties, it felt uneasy about providing specific suggestions for organizational change. Instead, it suggested that, because CDC probably knows its programs, needs, and difficulties better than any external group, CDC is most capable of designing a more appropriate, efficient organization.

The Committee, recognizing CDC's impressive record of success, emphasized that major changes should be considered very carefully. With this in mind, the Committee urged CDC to thoroughly examine its functional components and its structure and make the modifications that it considers appropriate in light of the priorities for prevention, CDC's role in the strategies of intervention, and any currently observed difficulties in implementing existing programs.

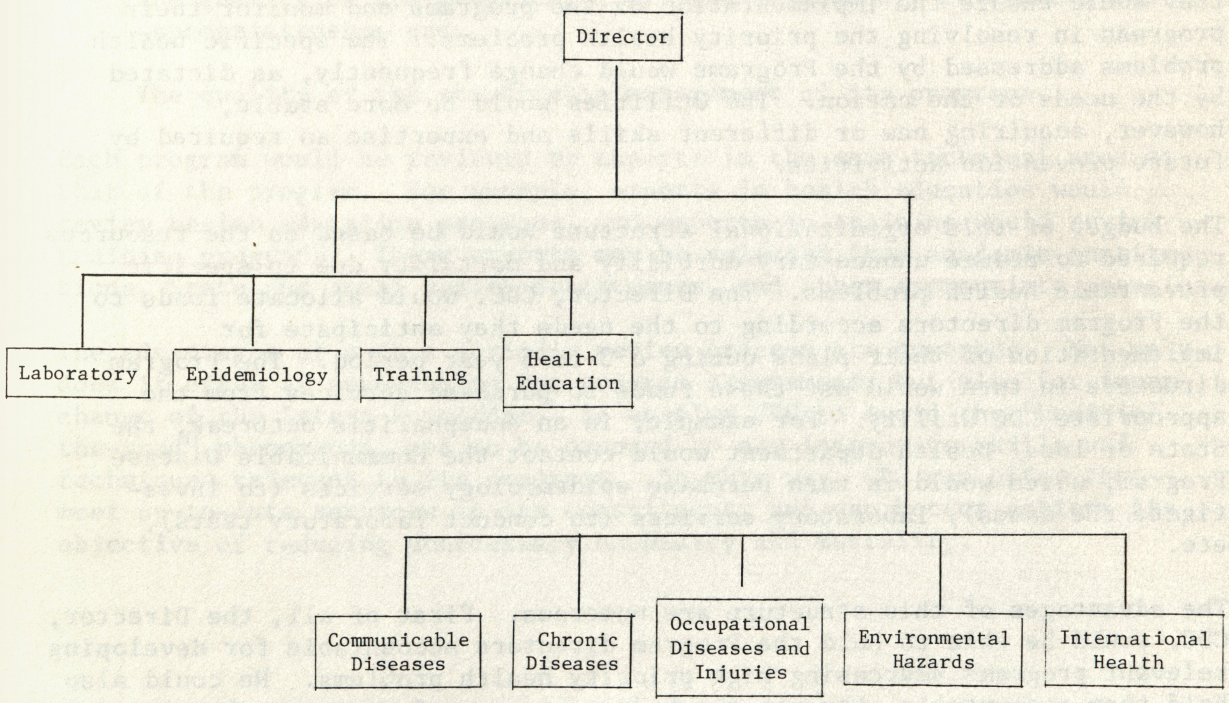
The Committee offered several additional suggestions for CDC to consider during its self-examination.

> CDC should strengthen and expand its international health activities. The Committee commended CDC for its success in implementing public health programs domestically and, to some extent, internationally. They felt that it would be unfortunate if the knowledge and expertise CDC has acquired in implementing preventive health programs were not made available throughout the world. They therefore suggested that CDC serve as a model of a disease prevention agency for other nations. In addition, they endorsed the development of a global "surveillance" system.
>
> CDC should emphasize and strengthen NIOSH's *service* role in the prevention of disease and death in the workplace, rather than

solely as a *research* institute. Such emphasis could be symbolized by changing NIOSH's title to, for example, the "Center for Occupational Health and Safety."

CDC should encourage and enable an increased role for schools of medicine and schools of public health in the evolving structure of prevention. The roles of CDC, State and local health departments, and the universities will be changing. CDC should seek grant and contract authority with the flexibility to facilitate the development of a close partnership of the three. To a considerable extent, CDC has been isolated from the universities, and the universities from CDC. Unless they "come out from behind the walls of their respective fortresses," and join in effective partnership with State and local health agencies, efforts for prevention will be "severely compromised." CDC should use its considerable strengths to see that the public health structure of the future combines the assets of the universities and the constituted health agencies in a common force for disease prevention.

One of the organizational alternatives that CDC might consider to possibly provide more flexibility in its programs and services is depicted by the chart below. The Committee urged that CDC explore a variety of alternatives, including this one, before making any final decisions regarding its organization.



This chart rearranges the present components of CDC into two categories: "Programs," which implement CDC's role in the respective intervention strategies; and "Utilities," which "sell" expertise and services to the "Programs." It groups related prevention activities into five generic prevention "Programs," selected by the Committee to reflect their perception of the major categories of priority preventable health problems:

Communicable Diseases
Chronic Diseases
Occupational Diseases and Injuries
Environmental Hazards
International Health

In addition, the chart identifies four "Utility" components that embrace much of the technical expertise for which the Center is noted:

Laboratories
Epidemiology
Training
Health Education

The Program directors would coordinate the development of preventive health programs designed to prevent unnecessary morbidity and mortality due to priority health problems within their particular program areas of responsibility. They would then determine the technical services necessary to implement the programs and would "purchase" those services from the appropriate Utility director (e.g., epidemiology, training). Finally, they would ensure the implementation of the programs and monitor their progress in resolving the priority health problems. The specific health problems addressed by the Programs would change frequently, as dictated by the needs of the nation. The Utilities would be more stable, however, acquiring new or different skills and expertise as required by future prevention activities.

The budget of this organizational structure would be based on the resources required to reduce unnecessary morbidity and mortality due to specific preventable health problems. The Director, CDC, would allocate funds to the Program directors according to the needs they anticipate for implementation of their plans during a 3-to-5 year period. The Program directors in turn would use these funds to purchase services from the appropriate CDC Utility. For example, in an encephalitis outbreak, the State or local health department would contact the Communicable Disease Program, which would in turn purchase epidemiology services (to investigate the cases), laboratory services (to conduct laboratory tests), etc.

The advantages of this structure are numerous. First of all, the Director, CDC, would be able to hold the Program directors accountable for developing relevant programs addressing high priority health problems. He could also hold them accountable, through the budget process, for accurately anticipating the type and amount of services required to implement their plans, and for actually purchasing those services from the appropriate Utility.

On the other hand, the Utility directors would be held accountable for providing the services required in an efficient and effective manner. Therefore, the Utility could not exist as an end unto itself (which the Committee perceived as a difficulty with the present organization) but as a means of essential support.

Furthermore, each Program would have a single responsible leader, or a central focal point, a change that would thereby eliminate another of the Committee's concerns. In the case of an encephalitis outbreak, the Communicable Disease Program Director would coordinate the program designed to control the outbreak and prevent additional encephalitis cases.

The Committee members stressed, however, that they could not decide whether this structure or any other conceivable alternative, would be the "best" organizational structure for CDC. The final decision regarding organization is the Center's.

Maintaining the Quality of CDC's Programs

Regardless of any organizational changes eventually chosen by CDC, the Committee strongly urged that CDC allow its programs and activities to be reviewed periodically by its peers. They recommended that an external group of technical experts review CDC's programs at least every 5 years to assess:

> The quality of its programs; i.e., their adequacy, relevance, and appropriateness; and
>
> The quality of the stewardship/management of its programs.

Each program would be reviewed by experts in the same technical area as that of the program. For example, experts in health education would review health education programs, and experts in training would review training programs. These experts may be selected from academic institutions, State and local health departments, and other appropriate agencies.

The advantages of such a periodic review process are numerous. Not only does it offer an opportunity for program assessment, but also for interchange of the latest knowledge. It enables CDC to avoid the "head-in-the-sand" phenomenon, and to be exposed to new innovative skills and techniques relevant to its programs. In this way, CDC can offer the most up-to-date services to its constituents and can better achieve its objective of reducing unnecessary morbidity and mortality.

CONCLUSION

This report advises the Director, CDC, of the Committee's recommendations on CDC's future programs and policies in light of the needs of the nation for the prevention of disease. The Committee members emphasized the importance of these recommendations and the uniqueness of the process used to develop them. They felt that they had made significant progress in dealing with issues of singular importance.

The Committee members attributed this progress to the extensive planning that occurred before, during, and after each meeting. They commended CDC for initiating this project and were optimistic that their recommendations would be implemented. They greatly anticipated meeting in approximately one year to evaluate the progress made towards that end.