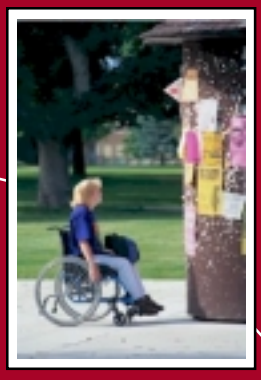
Healthiest Wisconsin 2010:

A Partnership Plan to Improve the Health of the Public



Part I of a report from the Wisconsin Turning Point Transformation Team to the Wisconsin Department of Health and Family Services

In fulfillment of the legislative requirement to develop a state public health plan at least once every ten years as required in s.250.07 Wisconsin Statutes.

Healthiest Wisconsin 2010

PART I:

A Partnership Plan to Improve the Health of the Public

Created by the Wisconsin Turning Point Transformation Team for the Wisconsin Department of Health and Family Services and Wisconsin's Public Health System Partners. This document fulfills the legislative requirement to develop a state health plan at least once every ten years as required in s.250.07, Wis. Stats.

Dedication to the People of Wisconsin

THE WISCONSIN TURNING POINT INITIATIVE presents and dedicates this transformational public health plan to the people of Wisconsin. The 21st Century is a time of great changes in prevention, health care, scientific knowledge, and technology. It is a time during which we know much about what protects health and prevents disease, injury, premature death, and disability. It is a time when we know much about social and economic influences on health, including labor market forces, and recognizes that maintaining a healthy workforce makes good business sense. It is also a time when we know much about the threats to health, the causes of injury, premature death, and disability, as well as recognizing that serious problems from the previous century still exist. To protect health calls us to focus on the public health system as a whole. This requires sustainable partnerships between the people, their government, and the public, private, nonprofit and voluntary sectors throughout Wisconsin. Achieving a transformation of the state public health system requires the development of a meaningful, integrated implementation plan, one that addresses multiple partners involved in the public health system. Finally, a transformation requires passion, commitment, and perseverance—especially when the going gets tough.

The Turning Point Transformation Team hopes that this plan and framework will provide the pathway to eliminate health disparities and transform Wisconsin's public health system to protect and promote health for all. In doing so, there is great optimism that the shared vision of healthy people in healthy Wisconsin communities will be achieved, thereby eliminating health disparities and transforming Wisconsin's public health system to protect and promote the health for all.

Robert Wood Johnson Foundation

THE WISCONSIN DEPARTMENT OF HEALTH AND FAMILY SERVICES and its Turning Point Initiative extends its gratitude to the Robert Wood Johnson Foundation. Their support and resources have been instrumental to the collaborative strategic planning processes used in preparing this report. This has resulted in a transformational plan where all Wisconsin residents are the direct beneficiaries.

The Robert Wood Johnson Foundation, based in Princeton, New Jersey, is the nation's largest philanthropy devoted exclusively to health and health care. It concentrates its grant making in three goal areas: to assure that all Americans have access to basic health care at reasonable cost; to improve care and support for people with chronic health conditions; and to reduce the personal, social, and economic harm caused by substance abuse—of tobacco, alcohol, and illicit drugs.

A Letter from Phyllis J. Dubé, Secretary

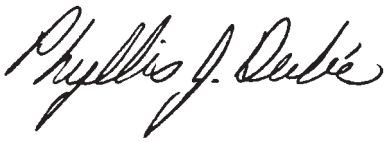
WISCONSIN DEPARTMENT OF HEALTH AND FAMILY SERVICES

The following document is the Wisconsin State 2010 Health Plan for the decade. The development of a State Health Plan is a statutory requirement of the Department of Health and Family Services. However, the creation of this document and the responsibility to see that the plan is implemented has been, is and will continue to be the job of all of Wisconsin's public health partners. These partners are in the governmental sector at the state and local level; in the not for profit sector; and in the private sector. This plan is the document of all Wisconsin citizens and the responsibility of all citizens.

I would like to thank the authors of this document, the Turning Point Transformation Team. This group of public health partners from all sectors spent over two years developing this plan. Scores worked directly on it and hundreds across Wisconsin reviewed it and made comments on the various drafts.

As Secretary of the Department, I am proud to continue the tradition of support for this effort established by my predecessor, Joe Leean. Therefore, with this letter, I am transmitting this plan to Governor McCallum and the Legislature.

Sincerely,



Phyllis J. Dubé
Secretary

A Letter from the Co-Chairs

OF THE WISCONSIN TURNING POINT INITIATIVE TRANSFORMATION TEAM

For those of us who were appointed as the Turning Point Transformation Team in October of 1998, this report is the fulfillment of a vision and the inauguration of another very important effort on behalf of the people of Wisconsin. In putting together the plan, the team was keenly aware of recent progress in this state's public health efforts, the status of health conditions among many diverse groups of people, as well as indicators of health care trends both nationally and locally. This plan is prepared and presented with awareness of the continuing atmosphere of change in scientific knowledge, social conditions, political priorities, economic realities, and public policy in relation to the public health agenda.

The substantial volume of effort that brought this plan to fruition involved a wide range of individuals and groups. They participated not only on the Transformation Team itself, but also on the Strategic Planning Team, the State Reactor Panel, the Data Expert Advisory Workgroup, and the five Community Review Teams. The work and support from the Robert Wood Johnson Foundation, a major funding source, and its National Program Office is noteworthy. However, the number of people and organizations that will be needed to effectively implement the plan is many times greater. Each and every person in Wisconsin can help make the plan a success by attending to preventive as well as curative issues related to their personal health, by facilitating collaborative and coordinated action between public health system partners, and by advocating strongly for support of the plan in determining public health policy.

The team is sincerely grateful to Joe Leean, former Secretary, Wisconsin Department of Health and Family Services, for his policy leadership, and for supporting a public health system transformation within the department. The team is also grateful to Secretary Phyllis Dubé, Wisconsin Department of Health and Family Services for her endorsement of this plan and transmitting it to Governor Scott McCallum and the Wisconsin State Legislature. We also acknowledge all those who volunteered their time and other resources, worked long hours, and traveled countless miles for meetings. Their awareness of the needs of their constituents was melded with the best thinking of the group on how to best protect the health of the population as a whole. The team would like to especially thank the highly skilled and dedicated Turning Point Strategic Planning Team for their leadership. We also thank all the agencies and organizations who contributed to the fine work leading to the completion of this plan. We also would like to take this opportunity to thank in advance all of you who will participate in the implementation of the plan during these next ten years. For in reality, it is the actions that will result from the plan, not the plan itself, which will serve to promote public health in Wisconsin.

Sincerely,

Dale B. Taylor, Ph.D
Co-Chair, Transformation Team
Chair, Dept. Allied Health Professions
University of Wisconsin-Eau Claire

Stephen H. Braunginn
Co-Chair, Transformation Team
President and Chief Executive Officer
Urban League of Greater Madison

WISCONSIN TURNING POINT INITIATIVE'S TRANSFORMATION TEAM

Mary Jo Baisch, Associate Director, Institute for Urban Health Partnerships, UW-Milwaukee, School of Nursing. A representative of nursing, health professions, access to health care, and institutions of higher education.

Bill Bazan, Vice President-Metropolitan Milwaukee, Wisconsin Health and Hospital Association. A representative of health care and the Wisconsin Health and Hospital Association.

Mary Ann Borman, Director, Health Promotion/ Disease Prevention, United Migrant Opportunity Services, Inc. A representative of Migrant/ Hispanic/Latino/Latino social services and the community behavioral health sector.

Terry Brandenburg, Health Commissioner, City of West Allis Health Department. A representative of Southeast Region Local Health Departments and the Maternal and Child Health Advisory Committee.

Stephen Braunginn, Co-Chair, Wisconsin Turning Point Transformation Team. President/CEO, Urban League of Greater Madison A representative of African American and other racial minorities, low-income children, youth and families.

John Brill, Medical Director, Community Health Programs, UW Medical School, Dept. of Family Medicine, Milwaukee Campus. A representative of the UW Medical School, primary care, the medical profession, underserved populations, and Aurora Health Care.

Gail Chamberlain, Director and Health Officer, Jefferson County Health Department. A representative of the Southeast Region Local Health Departments.

John D. Chapin, Administrator, Wisconsin's State Health Officer. A representative of the Division of Public Health, Department of Health and Family Services.

Neill DeClercq, Professor, UW Extension, School for Workers. A representative of labor.

Sarah Deidrick-Kasdorf, Legislative Assistant, Wisconsin Counties Association. A representative of Wisconsin county government.

Kurt Eggebrecht, Director and Health Officer, Appleton City Health Department. A representative of the Northeast Region Local Health Departments.

Darryl Farmer, Director of Environmental Health, Eau Claire City/County Health Department. A representative of environmental health and the Western Region Local Health Departments.

Patricia Finder-Stone, League of Women Voters of Wisconsin. A representative of non-partisan voluntary community organizations.

Ellen L. Fitzsimmons, Associate Dean, UW-Extension. A representative of the UW Cooperative Extension and institutions of higher education.

Seth Foldy, Commissioner, Milwaukee Health Department. A representative of primary care physicians and the Southeast Region Local Health Departments.

John Fox, Medical Director (former), Physicians Plus Insurance Corporation. A representative of the Wisconsin Association of HMOs.

Maria Gamez, President/Owner, Bilingual Communication and Consulting. A representative of the Hispanic/Latino/Latino community.

Patricia Guhleman, Research and Methods Chief, Bureau of Health Information, Division of Health Care Financing, Department of Health and Family Services. A representative of demography and public health research and analysis.

Michael Hammer, President/CEO, Good Samaritan Health Center. A representative of the Wisconsin Health and Hospital Association.

Melinda Hanson, Associate Lecturer and Internship Director, UW-Stout. A representative of the Western Regional Local Public Health Departments and the nutrition profession

Linda Huffer, Assistant to the Administrator, Division of Supportive Living. A representative of the Division of Supportive Living, Department of Health and Family Services, Department of Health and Family Services.

Mary R. Huser, Prevention Specialist, UW-Extension Cooperative Extension. A representative of institutions of higher education, University Outreach, and community planning.

Gareth R. Johnson, Administrator and Health Officer, Dane County Human Service Department, Division of Public Health. A representative of the Wisconsin Association of Local Health Departments and Boards and the Southern Region Local Health Departments.

James Johnston, Executive Policy and Budget Officer, WI Division of Executive Budget & Finance, Department of Administration. A representative of governmental financing.

Trudy Karlson, Senior Scientist, Center for Health Systems Research and Analysis, UW-Madison. A representative of public health research

Mary Laughlin, Supervisor, Child Family Services, Division of Health Care Financing. A representative of the Department of Health and Family Services.

Janet Lewellyn, Director and Health Officer, Shawano County Health Dept. A representative of the Northeast Region Local Health Departments.

Sarah V. Lewis, Executive Director, Wisconsin Primary Health Care Association. A representative of non-profit advocacy organizations.

Carol Lobes, Director, Prevention Services (former), University Health Services, UW-Madison. A representative of institutions of higher education and community organizations.

Sally Peck Lundeen, Dean and Professor, UW Milwaukee, School of Nursing. A representative of health professions education, nursing, and institutions of higher education.

Karen L. Martin, Legislator, Ho-Chunk Nation. A representative of the Ho-Chunk Nation.

Patricia McManus, Executive Director, Black Health Coalition of Wisconsin. A representative of the African American community and the faith community.

Nancy Miller-Korth, Nursing Consultant, Great Lakes Inter-Tribal Council. A representative of tribal health programming.

Elaine H. Mischler, Medical Director, Wausau Benefits Inc., Medical Management Services. A representative of the medical profession, private health care systems, and the insurance sectors.

Fred Moskol, Director, Wisconsin Office of Rural Health (former). A representative of rural health.

Glenn A. Mueller, Drinking Water Specialist, Division of Water, Department of Natural Resources. A representative of the Wisconsin Environmental Health Association and the Department of Natural Resources.

Greg Nycz, Director, Family Health Center of Marshfield, Inc., and Director, Health Policy, Marshfield Clinic. A representative of the health care safety net, medical group practice, and Wisconsin's Area Health Education Centers.

James O'Keefe, Legislative Liaison, City of Madison. A representative of the Wisconsin Alliance of Cities and Wisconsin city government.

Juanita S. Pawlisch, Assistant State Superintendent (former), Department of Public Instruction. A representative of primary and secondary education.

Tom Pyne, Vice President of Public Policy (former), Catholic Health Association of Wisconsin. A representative of Catholic health care providers, hospitals, and nursing homes.

Penny Robbins, Manager (former), Aurora Health Care, Positive Health Clinic & HIV Services. A representative of high risk populations.

Sr. Renee Rose DC, President and CEO (former), Horizon Health Care. A representative of the Wisconsin Catholic Conference.

Doris Schoneman, Assistant Professor, Marquette University College of Nursing. A representative of nursing, health professions education, and institutions of higher education.

Abdulcadir Sido, Administrative Dean, Health, Human and Protective Service, Madison Area Technical College. A representative of the Wisconsin Technical College System, dentistry, and the dental health professions.

Geoffrey R. Swain, Associate Medical Director, City of Milwaukee Health Department and Associate Professor of Family and Community Medicine, Medical College of Wisconsin. A representative of academic medicine/medical schools, primary care physicians, and large urban local health departments.

Dale B. Taylor, Co-Chair, Wisconsin Turning Point Transformation Team. Chair, Department of Allied Health Professions, UW- Eau Claire, Dept. of Allied Professions. A representative of the African American community and institutions of higher education.

Meg Taylor, Director, Bureau of Chronic Disease Prevention and Health Promotion, Division of Public Health. A representative of the Division of Public Health, Department of Health and Family Services.

Jane Thomas, Rural Health Specialist, Wisconsin Deptartment of Commerce.
A representative of the Wisconsin Department of Commerce and rural health.

Devorah Vineburg, Director, Family Matters Program, Volunteer Center of Brown County. A representative of the Wisconsin Jewish Conference.

Julie A.Willems Van Dijk, Director of Preventive Health Services, Marathon County Health Department. A representative of the Northern Region Local Health Departments.

Earnestine Willis, MD, Associate Professor, Medical College of Wisconsin. A representative of the medical profession and the Medical College of Wisconsin.

Ned Zuelsdorff, Director, Bureau of Agri-chemical Management, WI Department of Agriculture, Trade and Consumer Protection. A representative of the Wi.consin Department of Agriculture, Trade, and Consumer Protection.

WISCONSIN TURNING POINT INITIATIVE'S STRATEGIC PLANNING TEAM

Margaret Schmelzer, Chief, Wisconsin Turning Point Initiative, Project Director of the RWJF WI Turning Point Grant, and State Public Health Nursing Director, Division of Public Health, Department of Health and Family Services.

Julie Mallder, Operations Manager (former), Wisconsin Turning Point Initiative, Division of Public Health, Department of Health and Family Services.

Peggy Hintzman, Assistant Director, Wisconsin State Laboratory of Hygiene and Chief Facilitator of the Data Expert Advisory Workgroup for the Wisconsin Turning Point Initiative.

Sheila Sjolander, Strategic Planner (former), Office of Strategic Finance, Department of Health and Family Services.

TURNING POINT STATE REACTOR PANEL MEMBERS (INVITED)

Convened by Joe Leean, then Secretary, Wisconsin Department of Health and Family Services

John Benson, Secretary, Former Superintendent, Department of Public Instruction

Brenda Blanchard, Secretary, Department of Commerce

Ben Brancel, Former Secretary, Department of Agriculture, Trade and Consumer Protection

John D. Chapin, Administrator, Wisconsin's State Health Officer, Division of Public Health, Department of Health and Family Services.

Sarah Diedrick-Kasdorf, Legislative Liaison, Wisconsin Counties Association

Michael Dunn, President, Medical College of Wisconsin

Philip M. Farrell, Dean, UW-Madison Medical School

James Haney, President, Wisconsin Manufacturers and Commerce

Ed Huck, Executive Director, Wisconsin Alliance of Cities

James Johnston, Justice Team Leader, Executive Budget and Finance, Department of Administration

Ronald Laessig, Director, Wisconsin State Laboratory of Hygiene

George Lightborn, Secretary, Department of Administration

Jon Litscher, Secretary, Department of Corrections

Sally Lundeen, Dean, UW-Milwaukee School of Nursing

George Meyer, Former Secretary, Department of Natural Resources

The Honorable Mark Miller, Wisconsin State Assembly

The Honorable Rodney Moen, Wisconsin State Senate

Carl O'Connor, Dean and Director, UW Extension-Cooperative Extension

James O'Keefe, Wisconsin Alliance of Cities

The Honorable Luther Olsen, Wisconsin State Assembly

The Honorable Judy Robson, Wisconsin State Senate

Mark Rogacki, Executive Director, Wisconsin Counties Association

The Honorable Peggy Rosenzweig, Wisconsin State Senate

The Honorable Brian D. Rude, formerly of the Wisconsin State Senate

Linda Stewart, Former Secretary, Department of Workforce Development

Erica St. Angel, Formerly of the Office of the Governor

Robert Taylor, Former President, Wisconsin Health and Hospital Association

Charles Thompson, Former Secretary, Department of Transportation

The Honorable Gregg Underheim, Wisconsin State Assembly

The Honorable Frank Urban, Wisconsin State Assembly

Madeline Wake, Dean, Marquette University, College of Nursing

David Ward, Former Chancellor, UW-Madison

Charles Wilhelm, Director, Office of Strategic Finance, Department of Health and Family Services

DATA EXPERT ADVISORY WORK GROUP

(DEAG) Core Leadership Team:

Peggy Hintzman, Wisconsin State Laboratory of Hygiene, Chief Facilitator

Neil Hoxie, Division of Public Health, Department of Health and Family Services

Patricia Guhleman, Division of Health Care Financing, Department of Health and Family Services

Members

Nancy Chudy, Division of Public Health, Department of Health and Family Services

Jean C. Durch, Chippewa County Department of Public Health

Beth Fiore, Division of Public Health, Department of Health and Family Services

Merton D. Finkler, Lawrence University, Department of Economics

Patricia J. Gadow, Madison Department of Public Health

Elizabeth Giese, Division of Public Health, Department of Health and Family Services

Gary D. Gilmore, UW-La Crosse, Department of Health Education

Paul Gunderson, Marshfield Medical Research Foundation

Linda Hale, Division of Public Health, Department of Health and Family Services

Lawrence P. Hanrahan, Division of Public Health, Department of Health and Family Services

Jeanne Beauchamp Hewitt, UW-Milwaukee, School of Nursing

Marjorie Hurie, Division of Public Health, Department of Health and Family Services

Trudy A. Karlson, UW-Madison

Russell S. Kirby, UW Medical School, Milwaukee Clinical Campus

Katherine Kvale, Division of Public Health, Department of Health and Family Services

John R. Pfister, Wisconsin State Laboratory of Hygiene

Patrick L. Remington , UW-Madison Medical School

Susan K. Riesch, UW-Madison, School of Nursing

Roberta Riportella-Muller, UW Cooperative Ext.

Barbara A. Rudolph, Division of Health Care Financing, Department of Health and Family Services

Margaret Schmelzer, Division of Public Health Department of Health and Family Services

Mark Werner, Division of Public Health, Department of Health and Family Services

COMMUNITY REVIEW TEAMS

Western Region: Site – Eau Claire

Kathy Anderson, New Circle

Ann F. Bates, Pepin County Human Services

Rolin Carlson, West Community Action Program

Jean Durch, Chippewa County Department of Public Health

Elizabeth Giese, Division of Public Health, Department of Health and Family Services

Larry Gilbertson, Division of Public Health, Department of Health and Family Services

Sharon Gilles, Eau Claire Area Schools

Patrick Heiser, Douglas County Health Department

Carrol Hunder, Cooperative Educational Systems Agency

Sue Jensen-Knuferman, Buffalo County

Carol Larson, Burnett County Health Department

Beverly Larson, Franciscan Skemp Healthcare-Mayo

Linda Lee, La Crosse Cty. Health Department

Karen Levandoski, Dunn County Health Department

Barbara Lohse-Knous, UW- Stout

Karen Maddox, UW-Eau Claire, School of Nursing

Kathleen Mai, Rusk County Health Department

LeAnn McMahon, Automated Health Systems, Inc.

Ellen Moldenhauer, Jackson County Health Department

Douglas Mormann, La Crosse County Health Department

Barbara Nelson, St. Croix County Health & Human Services Department

Kathleen Newman, Barron County Health Department

Heidi Nighbor, Automated Health Systems, Inc.

Linda Petersen, Division of Public Health, Department of Health and Family Services

Sharon Prissel, Pepin County Health Department

Heather Repinski, Buffalo County Health Department

Tim Ringhand, Chippewa Co. Department of Public Health

Robert Rogalla, Lake States Environmental, Ltd.

Mike Rust, ABC For Health, Inc.

James Ryder, Eau Claire City/County Health Department

Gretchen Sampson, Polk County Health Department

Myron Schuster, Burnett County Board of Supervisors

B. Jill Smith, West Community Action Program

Jamie Sorenson, AIDS Resource Center of Wisconsin

Elizabeth Spencer, Family Medicine Clinic

Jean Stoll, Eau Claire City County Health Department

Brian Theiler, Gundersen Lutheran Teen Health Service

Mary Jo Tuckwell, Eau Claire Area School District

Beth Twiton, Wisconsin Coulee Region Community Action Program

Pam Van Kampen, Northern Area Agency on Aging

COMMUNITY REVIEW TEAMS

Southern Region: Site – Madison

Catherine Allen, UW-Madison

Kathy Anderson, State Medical Society

Anne Arnesen, Wisconsin Council on Children & Families

Kevin Baird, AIDS Network of Southern Wisconsin

Jane Barry, The Morgan Barry Company, Inc.

Nancy Bergey, Green County Health Department

Harold Brown, Prairie du Chien Memorial Hospital

Eileen Bruskewitz, Wisconsin Apartment Association

Sally Casper, WI Committee to Prevent Child Abuse

Maureen Cassidy, American Heart Association

Rebecca Cohen, Division of Supportive Living, Department of Health and Family Services

Ann E. Conway, Wisconsin Association for Perinatal Care

Narra S. Cox, UW-Madison, Extension, Division of Continuing Study

Claudette Cummings, Beloit Health Department

Ruby Dow, Dane County Division of Public Health

Barbara Duerst, WI Office of Rural Health

David Duran, Division of Children and Family Services, Department of Health and Family Services

Karen Ehle-Traastad, UW Cooperative Extension

Yvonne Eide, Division of Public Health, Department of Health and Family Services

Marion Fields Fass, Beloit College

Catherine Frey, UW-Wisconsin Medical School

Gail Frie, Vernon County

Al Friedl, Wisconsin Laborers Training Center

Donna Friedsam, WI Inter-Tribal Managed Care Demo

Patricia Gadow, Madison Department of Public Health

Mary Gothard, Division of Public Health, Department of Health and Family Services

JoAnne Granquist, Edgewood College

Gay Gross, Madison Department of Public Health

Chris Hendrickson, Division Supportive Living, Department of Health and Family Services

Patricia Holt, American Red Cross, Madison Chapter

Stanley Inhorn, Wisconsin State Laboratory of Hygiene

Elizabeth Johnson, Vernon County Health Department

Robert Kellerman, Age Advant Age, Inc.

Mary Kelly-Powell, Edgewood College

Isadore Knox, Jr., Division of Management and Technology, Department of Health and Family Services

David Kreling, UW-Madison, School of Pharmacy

Jody Langfeldt, Dodge County Human Services and Health Department

Patricia Lasky, UW-Madison School of Nursing

Faith Lerner, Northeast Family Medical Center

Ruth Lindegarde, Dodge-Jefferson Healthier Community Partnership

Angela Madalon, Physicians Plus Insurance Corporation

Linda McFarlin, Adams County Health Department

June Meudt, Iowa County Health Department

Paul Moore, The Salvation Army

Muriel Nagle, Madison Department of Public Health

Karen Nass, Sun Prairie Area School District

Barbara Nehls-Lowe, Division of Public Health, DHFS

Laura Olah, Citizens for Safe Water Around Badger

Louis L. Oppor, Division of Children and Family Services, Department of Health and Family Services

Robert Peterson, ABC For Health, Inc.

John Pfister, Wisconsin State Laboratory of Hygiene

Pamela Ploetz, University of Wisconsin Hospital and Clinics

Rosemary Sabino, RSM, Catholic Health Association of Wisconsin

William Scheckler, UW-Madison, School of Medicine

Jamie Scott, Division of Public Health, Department of Health and Family Services

Lynn Sherman, State Medical Society of Wisconsin

Debbie Siegenthaler, Lafayette County Health Department

Timothy Size, Rural Wisconsin Health Cooperative

Nancy Sugden, WI AHEC System – Program Office

Barbara Theis, Juneau County Health Department

Susan Tillema-Harvey, WI AHEC System

James Udelhoven, Grant County Health

John Vellardita, South Central Wisconsin Committee on Occupational Safety & Health

John Vick, Division of Supportive Living, Department of Health and Family Services

Susan Wood, Division of Health Care Financing, Department of Health anf Family Services

Mary Young, Division of Public Health, Department of Health and Family Services

COMMUNITY REVIEW TEAMS

Southeast Region: Site – Wauwatosa

Betsy K. Adrian, Medical Society of Milwaukee County

Sandra Badgerow, Kenosha County Division of Health

Mary Jo Baisch, UW-Milwaukee, School of Nursing

Mary Baroni, Children's Hospital of Wisconsin

Sarah J. Beversdorf, Medical College of Wisconsin, Department of Family and Community Medicine

Lucia Cargill, Health Decision Research

Rosie Carradine Lewis, Milwaukee Healthy Women and Infants Project

Isa Chase, Franklin School District

Barb Cuene, Children's Hospital of Wisconsin

Candice Czarnecki, St. Mary's Hospital

Darryl Davidson, City of Milwaukee Health Department

David Drury, Concentra Medical Centers

Michael Eaton, Aurora Health Care

Amy Fowler-Farrell, City of Milwaukee Health Department

Sharon Garrett, Cardinal Stritch University

Sheryl Gotts, Milwaukee Public Schools

Carol Graham, Weigra Consulting, Inc.

Yvonne Greer, City of Milwaukee Health Department
Ruth Gresley, Concordia University Wisconsin
Pat Grove, Walworth County Health Department
Robert Harris, Division of Public Health, Department of Health and Family Services
William Hein, Wisconsin Committee on Occupational Safety and Health
Madeline Henry, FIMCO, Inc.
Jeanne Hewitt, UW-Milwaukee, School of Nursing
Gary Hollander, Aurora Health Care
Mark Huber, Aurora Health Care
The Honorable Jean Jacobson, County Executive, Racine
Kelli Jones, Division of Public Health, Department of Health and Family Services
Maureen Kartheiser, Milwaukee Public Schools
Lo Neng Kiatoukaysy, Hmong/American Friendship Association
Stan Kocos, AIDS Resoruce Center of Wisconsin
Patricia Koehn, Community Advocate
Diana Lyerson-Breland, Institute for Child and Family Development
Glenda Madlom, Ozaukee County Public Health Department
James Marks, Milwaukee Foundation
Paco Martorell, Milwaukee Public Schools
Frank Matteo, Kenosha County Division of Health
Jestene McCord, Aurora Health Care
Ellyn McKenzie, 16th Street Community Health Center
Janet McMahon, American Lung Association
Julia Means, St. Mary's Hospital Community Services
Kenneth Miller, Washington County Board of Supervisors
Diane Muri, City of Racine Health Department
Michael Murphy, Milwaukee Common Council
Christine Neumann-Ortiz, Wisconsin Committee on Safety and Health
Walter Orzechowski, Horizon Health Care
Beth Peterman, Peterman Consulting, LLC
Larry Pheifer, Wisconsin Academy of Family Physicians
Milan Racic, International Brotherhood of Boilermakers
Teal Rivera, United Migrant Opportunity Services, Inc.
Peter Schuler, Waukesha County Department of Health and Human Services
Judeen Schulte, Alverno College
Penny Seidner, UAW Local 469/MasterLock
Shirley Sharp, Milwaukee Urban League
Carol Skierka, Greenfield Health Department
James Smith, City of Racine
Susan Stroupe, Racine Unified School District
Cynthia Tomasello, Shorewood Health Department
Carol Wantuch, Cudahy Health Department
JoAnn Weidmann, Waukesha County
Terry Weiland, Midwest Express Airlines
Nicholas Young, Rockwell Automation
Elizabeth Zelazek, City of Milwaukee Health Department

COMMUNITY REVIEW TEAMS

Northern Region: Site – Minocqua

Patricia Acheson, Sawyer County Human Services
Ann Bolz, Community Health Care, Wausau Health
Gina Egan, Vilas County Health Department
Rosalyn Haase, Medford Clinic
Mary Hahn, Price County Health Department
Paula Havisto, Great Lakes Inter-Tribal Council, Inc.
Thomas Heather, PACE International Union
Judy Hitchcock, Ashland County Health Department
Julie Hladky, Portage County Health Department
William Hocking, Marshfield Clinic
Karen Kolpien, Tobacco-Free Central Wisconsin Coalition
Judith Kunath, Iron County Health Department
Jeffrey Lamont, American Academy of Pediatrics
Jim Lawrence, Division of Public Health, Department of Health anf Family Services
The Honorable Mary Ann Lippert, Wisconsin State Assembly
Jeffrey Miller, Bayfield Public Schools
George Million, Marathon County Health Department
Robert Newman, Wood County Health Department
Judy Nuland, Oneida County Health Department
Lucia Patritto, UW Extension
Barbara Peickert, Hayward Area Memorial Hospital
Jennifer M. Peterson, St. Mary's/Duluth Clinic Health System
Carrie Pohjola, Division of Public Health, Department of Health and Family Services
Scott Polenz, Security Health Plan
Douglas Reding, Marshfield Clinic
Joe Salzman, Iron County Board of Health
Tim Stellar, North Central Health Care Facilities
Kathryne Sutliff, Oneida County Health Department
Terri Timmers, Division of Public Health, Department of Health and Family Services
Judith Walker, Douglas County Health Department
Nancy Young, Marshfield Medical Research Foundation

COMMUNITY REVIEW TEAMS

Northeast Region: Site – Kimberly

Diane Cappozzo, Fond du Lac County Health Department

Judy Crouch-Smolarek, Neenah Department of Public Health

Patricia Finder-Stone, League of Women Voters of Wisconsin

Judy Friederichs, Brown County Health Department

Dennis Hibray, Division of Public Health, Department of Health and Family Services

Susan Huelsbeck, Winnebago County Health Department

Bruce Johnson, Fox-Wolf Basin 2000

Bonnie Johnson, Touchpoint Health Plan

Sue Kamien, Outagamie Co. Department of Health and Human Service

Merritt Knox, UW-Oshkosh, School of Nursing

Rhonda Kolberg, Door County Health Department

Suzanne McCartney, Marquette County Health Department

Jane Muhl, UW-Green Bay, School of Nursing

Susan Nett, City of Menasha Health Department

Mary Pieschek, Unity Hospice

Patsy Romback, Network Health Plan

Cathy Sendelbach, Division of Public Health, Department of Health and Family Services

Jerry Smith, School District of Marion

Judy Smolarek, City of Neenah, Public Health Department

Paul Spiegel, City of Oshkosh Health Department

Jan Tjaden, Sheboygan County Human Services Department

Mary Toppins, AT&T

Annette Weissbach, Wisconsin Department of Natural Resources

Amy Wergin, Manitowoc County Health Departmet

FACILITATOR: WISCONSIN TURNING POINT INITIATIVE'S TRANSFORMATION TEAM

Anne Conzemius, Quantum Learning Dynamics Inc.

EDITORIAL REVIEW TEAM

Mary Jo Baisch, UW-Madison, School of Nursing

Terry Brandenburg, West Allis Health Department

Margaret Schmelzer, Division of Public Health, Department of Health and Family Services

Doris Schoneman, Marquette University, College of Nursing

~ *A Special Thanks* ~

The Wisconsin Turning Point Initiative's Transformation Team acknowledges and extends its gratitude to the many partners and Department of Health and Family Services staff who contributed, reviewed and edited this document. Finally, we extend our gratitude to Margaret Schmelzer who wrote and oversaw the development of Healthiest Wisconsin 2010 for the Transformation Team and used our transformational framework as its architecture.

Table of Contents

THE WISCONSIN TURNING POINT INITIATIVE

Section 1 A New Vision and Framework for Wisconsin's Public Health System

Section 2 Goals: Focus for the Future

Section 3 System (Infrastructure) Priorities

Section 4 Health Priorities

Section 5 The Methodology used to Determine the Health Priorities

Section 6 Special Issues

THE Wisconsin Turning Point Initiative

A POLICY PATHWAY TO TRANSFORM WISCONSIN'S PUBLIC HEALTH SYSTEM

Background

The early groundwork of Wisconsin's public health system transformation began in 1997 when the Robert Wood Johnson and W.K. Kellogg foundations created a national effort to transform the nation's public health system. The idea of a transformation was one that resonated among Wisconsin's local health departments and within Wisconsin Division of Public Health. Moreover, the concept of a transformation was already documented in the Department of Health and Family Service's Strategic Business Plan. At the same time, state-level discussions were underway to commence work to develop the 2010 state health plan, which is required by law as set forth in s. 250.07, Wis. Stats. Timing could not have been better.

In 1997, the Wisconsin Turning Point Initiative was launched as the policy pathway to transform Wisconsin's public health system for the year 2010. *Healthiest Wisconsin 2010* not only fulfills the legislative requirement to publish a 10-year state heath plan, but also incorporates in the state health plan the framework to guide a full-scale transformation of Wisconsin's public health system by the year 2010. In 1999, the Department received a two-year grant from the Robert Wood Johnson Foundation that provided strategic planning resources for a full-scale transformation of the public health system.

To transform Wisconsin's public health system requires paying close attention to the following overarching principles:

- It takes the work of many to protect the health for all.
- Broad-based sustainable partnerships are needed to prepare and respond to 21st Century challenges affecting the public's health. A partnership between government, the people, and the public, private, and voluntary sectors is necessary.
- Planning, implementation, and evaluation require solid grounding in public health and social sciences, strategic planning, and quality improvement principles and practices.

Why Transform our Public Health System

Identifying the problems and challenges within the public health system was the first step of strategic planning for a transformation. At the national level, the National Academy of Sciences' Institute of Medicine studied the nation's public health system and made recommendations for its future. This study was in response to the growing perception that our nation had lost sight of its public health goals, that the system had fallen into disarray, and was a "shattered dream." Their report, *The Future of Public Health*, made major recommendations for the future (Institute of Medicine, 1988).

Within Wisconsin, it was determined that many of our state, organizational, and community leaders did not entirely understand what a public health system meant and how communities benefited from it. Many saw it as a nebulous concept and held outmoded perceptions of what a public health system

does and can do for the public. Additionally, communities and organizational leaders were confused when the public health system attempted to provide leadership to facilitate chronic disease efforts, reduce violence and injury prevention in Wisconsin communities, or build and sustain integrated partnerships with the public and private sectors.

Much of this confusion stemmed from a prevailing view that the public health system was limited only to governmental intervention with a chief focus on communicable disease prevention and control. Why would the public health system concern itself with chronic disease, violence, and partnerships? After all, wasn't this the work of the health care system and law enforcement? Additionally, state and local governmental public health leaders were frustrated because their concerns about prevention and response to current and emerging threats to the health of the public went unheard, mainly because they had to compete with more powerful voices in an environment of tight budgets. In short, the public health system was largely misunderstood, had not identified shared interests, policy linkages, and incentives to work together as partners for the public's health. Its history, contributions, and scope were unknown.

The Wisconsin Turning Point Initiative is already showing promise in changing both the culture and context of the public health system. Much of this is driven by a contemporary public health vision and framework, an agreed-upon definition of public health, and the identification of health priorities and infrastructure priorities. There is tangible evidence of a reaffirmation by the public health system's partners of their shared commitment to promote and protect the health of the public. While a transformation will take time, and significant efforts will be required to sustain the transformation, the necessary ingredients are nonetheless in place for a transformation to occur.

Government's Responsibility for the Public's Health

The responsibility of the public health system is to fulfill society's interest in assuring conditions in which people can be healthy. Its functions include extending the benefits of current knowledge to maximize the health status of the entire Wisconsin population though organized community efforts aimed at the protection and promotion of health for all (Institute of Medicine, 1988). Wisconsin's public health system is a broad enterprise. It is a partnership between government, the people, and the partners in the public, private, nonprofit and voluntary sectors to protect the health of everyone.

Government, both now and in a transformed system, has the responsibility to establish leadership and facilitate the attainment of the public health vision, mission and framework. Throughout the history of public health, government has been viewed as the foundation of the public health system. Its leadership role is viewed as assuring the public's health, but it is never viewed as being solely responsible for the public's health. This is not to diminish the important role government plays in the lives of its people—government is called upon in this transformation to provide leadership for public health partners to join together to address issues that impact the health of our communities. Transforming Wisconsin's public health system from one that is perceived to be driven and carried out by government alone, to one that is driven by our local and statewide communities in partnership with government, represents the core of this transformation.

The transformation was guided by the 12 core principles/beliefs set forth by the Transformation Team. The following two speak directly to collaborative partnerships and governmental leadership:

Collaboration is the key to success. No single sector or agency can accomplish the goal of improved public health. Collaboration, partnerships, and resource sharing will provide the maximum benefit for our communities.

And, government has the responsibility to establish leadership and facilitate the achievement of the public health mission and vision in Wisconsin. While governmental agencies cannot and should not be made solely responsible for guaranteeing the public's health, they can and should take respon-

sibility for seeing that the appropriate people come together to address issues relating to the public's health.

Community Partnerships and Accountability

Collaborative community partnerships is one of four foundational principles of the Wisconsin Turning Point Initiative. Accountability to our communities includes continuous efforts that include traditional and nontraditional voices from government; residents; and the public, private, nonprofit, and voluntary sectors.

In 1997, a three-member interdisciplinary Strategic Planning Team was created to develop the strategic methods for the transformation of the public health system and guide the entire process. This team brought expertise from the fields of strategic planning, quality improvement, and public health from the sectors of the Office of Strategic Finance, Department of Health and Family Services; Wisconsin State Laboratory of Hygiene; and the Division of Public Health, Department of Health and Family Services.

In 1998, a diverse 51-member Transformation Team was appointed by Joe Leean, then Secretary of the Wisconsin Department of Health and Family Services, to provide strategic leadership and advise the Department on a preferred framework for Wisconsin's public health system and critical infrastructure and health priorities. These members represented traditional as well as new non-traditional public health system partners.

In 1999, five Community Review Teams were established to assure that local communities had a voice in shaping and influencing the transformation. These diverse teams were responsible to provide review and comment to the Transformation Team as it proposed its recommendations for the transformation. These five teams included approximately 250 individuals from all walks of life and met in the cities of Madison, Milwaukee, Kimberly, Eau Claire, and Minocqua.

In 2000, a State Reactor Panel was convened by then Secretary Leean to engage the secretaries of state agencies, elected officials, institutions of higher education, and statewide organizations in the transformation. The Wisconsin Department of Health and Family Services believed that to achieve system-wide change required the active engagement of both local and state-level policy and organizational leaders.

Public Health Leadership

Leadership is… "the art of mobilizing others to want to struggle for shared aspirations" (Kouzes and Posner, 1997). Then again, "...the leader is one who mobilizes others toward a goal shared by leader and followers. Leaders, followers, and goals make up the three equally necessary supports for leadership" (Wills, 1994).

Leadership transcends the entire architecture of the Turning Point Initiative. Leadership is found in organizational leaders who participated at all levels of planning for this transformation. It is to be found in the public health professionals, physicians, nutritionists, health educators, dentists, teachers, environmental health specialists, social workers, labor officials, and many more who believe a transformation is necessary if we are to impact on the health of the public. Leadership is to be found in the voices, hearts, and minds of the people of Wisconsin by encouraging and hearing their views about a preferred future for themselves, their families, and their communities.

The Work Continues

To be effective and make a difference, a transformed public health system must produce outcomes that result in improved health status and improved public health system capacity. For sustained change to occur, time, patience, and sustained leadership are needed.

In November 2000, work began to develop the implementation plan of the framework and priorities set forth in *Healthiest Wisconsin 2010*. This includes the development of an evaluation system to measure short, intermediate, and long term changes in both health status and system capacity. The implementation plan incorporates:

- multiple intervention approaches that

include education, social support, laws, policies, incentives, and behavioral change (Smedley and Syme, 2000);

- multiple levels of influence to include individuals, families, local communities, and the state population as a whole (Smedley and Syme, 2000); and
- linkages to the federal health plan *Healthy People 2010*.

By acting upon the underlying causes of injuries, diseases, or poor health as identified in the 11 health priorities, the burden of disease can be reduced, the quality of life can be improved, and the health of the public can be protected. By acting on the 5 system priorities the capacity of the public health system can be built to support efforts aimed at promoting and protecting the health for all, eliminating health disparities, and transforming Wisconsin's public health system.

Plan Overview

A New Vision for the Public Health System in Wisconsin

The state health plan defines the new vision for the public health system in Wisconsin and as specific targeted outcomes." Healthy People in Healthy Wisconsin Communities" is a dynamic vision statement for the future. The achievement of this vision requires coordinated governmental leadership in collaborative partnerships with public, private, nonprofit and voluntary sectors in all Wisconsin communities. It also requires leadership, stewardship, strategy, and high quality actions that are directed toward promoting and protecting health for all, eliminating health disparities, and transforming the public health system for the benefit of all Wisconsin people.

Framework for the Public Health System

The partners who worked on this plan believed it was imperative to create a common, shared vision and mission for the public health system in Wisconsin as the basis for a transformation. This is a departure from the past when each partner operated from its own vision and mission, resulting in a fragmented approach to improving the public's health.

This work also involved identifying a framework to achieve the shared vision and mission. This framework included reaffirming the three core public health functions (assessment, policy development, and assurance) as defined in state statute and identifying the 12 essential public health services shared by all the partners in their endeavor to attain healthy people in healthy Wisconsin communities. The framework also required identification of the many partners throughout our state who contribute to improving the health of the public. The concept of partners in this plan is both comprehensive and inclusive. It includes state, county and municipal local health departments, other government agencies, community agencies, the faith community, private businesses, labor, teachers, social workers, environmental health professionals. It also includes many others from public, private, nonprofit, voluntary agencies, and individuals who are committed to improving the health and quality of life in their community.

Focus for the Future

The people involved in developing this plan also believed that the plan should provide a clear focus. This plan therefore identifies 3 overarching goals, with 5 (infrastructure) system and 11 health priorities. The priorities focus on strengthening the capacity of the public health system to carry out its work of improving the overall quality of life and increasing the number of years of healthy life for everyone—both vital to achieving the shared vision of the public health system.

Overarching Goals

The entire plan centers around three goals:

1. Promote and protect health for all.
2. Eliminate health disparities.
3. Transform Wisconsin's Public Health System.

Priorities

To produce results, a public health system

requires sustained partnerships, a sound framework, capacity, and clear direction. The system and health priorities that follow provide the direction. The health priorities were selected because they influence health and illness and each have behavioral, environmental, and societal dimensions. The health and system (infrastructure) priorities are complementary and overlapping.

Five System (Infrastructure) Priorities

A transformed public health system will be accomplished through a collaboration of state and local governmental departments, and the public, private, nonprofit, and voluntary sectors in partnership with the people. The following 5 public health system priorities anchor the capacity of the public health system to act upon the 11 health priorities. These system priorities will allow the public health system to build its capacity, allowing it to function effectively and efficiently to improve the health of the state population as a whole:

1. Integrated, electronic data and information systems
2. Community health improvement processes and plans
3. Coordination of state and local public health system partnerships
4. Sufficient and competent workforce
5. Equitable, adequate and stable financing

Eleven Health Priorities

The 11 health priorities reflect, to a large extent, the underlying causes of hundreds of diseases and health conditions affecting the Wisconsin population. Addressing these health priorities will have significant impact in promoting health and preventing disease; effectively utilizing scarce prevention resources; and improving the quality of life for all, including the segments of the population affected by diagnosed conditions/diseases, such as diabetes, coronary heart disease, and HIV.

- Access to primary and preventive health services
- Adequate and appropriate nutrition
- Alcohol and other substance use and addiction
- Environmental and occupational health hazards
- Existing, emerging, and re-emerging communicable diseases
- High risk sexual behavior
- Intentional and unintentional injuries and violence
- Mental health and mental disorders
- Overweight, obesity, and lack of physical activity
- Social and economic factors that influence health
- Tobacco use and exposure

These 11 health priorities were identified using a data-driven methodology that was based on public health principles, science, practicality, and professional judgement. This method used morbidity, mortality, prevalence, and epidemiological analytical methods that examined magnitude, severity, and the determinants of health. Details on this methodology can be found in Section 5, “Methodology.”

REFERENCES

Institute of Medicine. (1988). *The Future of Public Health*. National Academy Press. Washington, D.C.

Kouzes, J.M. & Posner, B.Z. (1997). *The Leadership Challenge*. San Francisco: Jossey-Bass Publishers.

Smedley, B.D. & Syme, S.L. (2000). (Prepublication Copy). *Promoting Health: Intervention Strategies from Social and Behavioral Research*. Institute of Medicine. National Academy Press. Washington, D.C.

Wills, G. (April 1994). What Makes a Good Leader? *The Atlantic Monthly*. (p. 70).

SECTION ONE:

A New Vision AND Framework FOR WISCONSIN'S PUBLIC HEALTH SYSTEM

Introduction

Every day, more than five million people go about their daily lives in Wisconsin. One of them is a mother of triplets who gets advice and support from a public health nurse in Sauk City. Another is a physician who volunteers in a free clinic in Cudahy. One is an employer in Green Bay trying to attract good employees to the state. Another is a father in Barron wishing his daughter could see a psychologist before she hurts herself or someone else. Another is a health officer and health educator working to assess the needs of their community in order to develop a local community health plan. One is an environmental engineer monitoring groundwater contaminants. Another individual is a retiree who devotes her time to helping teen mothers in Milwaukee. Another is a nutritionist providing community nutrition services to mothers and children. One is a farmer producing milk for the dairy in Algoma. One is an environmental health specialist checking water quality at Lake Michigan beaches. Another is a veterinarian volunteering her services to elderly residents in a nursing home to care for their companion pets. One is a dentist volunteering to provide dental sealants to underserved children in Ashland. Another is a mental health professional in St. Croix working with middle and high school students to manage anger and develop conflict resolution skills.

And one of them is you.

Whether you realize it or not, your life is touched by the public health system every day. You brush your teeth in water that has been purified and made more healthful. You drive to work on well-designed highways sharing the road with other drivers who you hope are following safety procedures. You arrive at a workplace where the air circulates appropriately and the vending machine food is safe to eat. You send your children off to schools hoping every child there has been immunized and is receiving a good education. You make hundreds of choices every day that are influenced by health information you saw on TV, heard on the radio, read in the paper, learned about on the Internet, or heard about from family or friends.

Perhaps no other system in the state reaches into as many aspects of work, home, recreation, and community life as the public health system. Yet few people understand its history, its scope, how it works, or how important public health is to their lives and the health of our state as a whole.

Why? In part because much of what the public health system does is not visible to the general public: activities like environmental monitoring, data collection, community health planning, and public policy development. Over the past decades, public health expenditures have been a very small portion of the total health care system expenditures. Local governmental public health functions are limited by categorical funding that often prescribes which programs will receive resources. Frequently, the result is that adequate funding is not available for the highest priorities determined by the people within Wisconsin communities.

With the development of *Healthiest*

Wisconsin 2010, there has been a ever-widening recognition by the public health system partners to embrace a strategic shared vision of the public health system. A vision that transforms thinking and action among the public health system in order to benefit the health of the public. Achieving a shared vision takes time. It requires thoughtful dialogue among the partners to answer questions that include:

- Who are the traditional and non-traditional stakeholders in Wisconsin's public health system?
- How can we as people, agencies, and organizations capitalize on our unique and overlapping roles when it comes to promoting and protecting the health of the public?
- How can agencies and organizations align their organizational visions to the vision of the public health system in Wisconsin so all partners work together, rather than separately, for the common good of the people?
- How can organizational business practices be created and sustained so that the public health system partners move beyond their organizational boundaries and effectively benefit all the people and communities of Wisconsin?

The answers will come in this decade—this plan and its subsequent implementation plan will play an important role in determining just what those answers are.

Elements of the New Vision

In a distinct departure from traditional state-level public health plans, this plan weaves together:

- *Emphasis on a modern understanding of "health."*

Everyone has a concept of what "health" is. Yet capturing that concept in words is difficult. The definition of "health" embraced in this plan defines health as "a state of well being and the capacity to function in the face of changing circumstances" (Durch, Bailey, & Stoto 1997).

"Health" in the public health arena now also embodies a much broader concept. It used to be that people in the health fields concerned themselves only with the physical and social aspects of health among people and their communities. But the evolving emphasis is on viewing health as a quality of life issue for each individual, each family, and the entire population. It is an evolving emphasis that includes the environment, education, occupation, economic status, access to resources, recreation, culture, values, beliefs, spirituality, and aspirations. It is an evolving emphasis that focuses not only on problems and risks, but one that also focuses on strengths, assets, and resiliency in people and their communities. This broader lens is intended to remind community leaders, decision-makers, and individuals that improving health is central to improving the quality of life. This broad definition of health is embraced and reflected throughout this document.

- *Emphasis on building, creating, and sustaining collaborative partnerships.*

In many people's minds, "public health" is equated with "government"—they think of the public health system as the agencies and resources provided only by state and local health departments. While government has played a substantial leadership and policy role, and is indeed the foundation for Wisconsin's system, a public health system is more than what government can provide. A public health system is a partnership between government, the people, and the public, private, nonprofit and voluntary sectors to promote the health of everyone. This plan provides numerous examples of how individuals and organizations from many sectors must play an active and sustained role in promoting and protecting health for all.

- *Emphasis on the benefits of protection and prevention*

Protection and promotion of good health and prevention of disease within all communities, as distinct from curative or rehabilitation care, is a primary obligation of the public health system. It is for that reason that an emphasis throughout *Healthiest Wisconsin 2010* is on primary prevention—working to keep injury, illness, disease, disability, and

premature death from occurring. Primary prevention is, in a real sense, a key obligation of the public health system because it improves the overall quality of life, saves lives, and conserves precious resources. It also builds on strengths and improves the effectiveness of systems to create conditions in which people can be healthy. Thus the emphasis in this plan is on the earliest possible proactive building of good health on every level. To influence health requires action at multiple levels of influence and multiple levels of intervention. This concept is basic to *Healthiest Wisconsin 2010* and the Wisconsin Turning Point Initiative. It reflects a deep commitment to primary prevention as critical to the transformation that is needed.

- *Emphasis on community based approaches to addressing current and emerging public health needs and issues.*

It's a basic premise that local needs and assets in Platteville will be different from those in Milwaukee or Eagle River. On the one hand, public health improvements must respect regional and local differences. On the other, the public health system partners see the need for coordination and coherence of projects and programs across the state. This coordination and coherence will come from effective policies at the state and local level, a common framework and shared vision, a common definition of public health and a shared set of essential public health services, a focused set of priorities, and sustainable partnerships. The community and the people who comprise it continue to be the focus of the public health system.

A Shift in Culture, Context and Thinking

This plan reflects a culture shift from how the public health system has done business in the past—from reactive "fix it" approaches for solving problems toward proactive "build it" approaches for creating healthy Wisconsin communities.

Community Health, Health Care, and Public Health

A major part of this shift is the recognition that to achieve the vision of healthy people in healthy communities, we need both a strong health care system (e.g., primary health care, hospitals, medical clinics, community health centers, long-term care facilities) and a strong public health system (e.g., state and local health departments, schools, human service agencies, community health centers, and many more). Neither system exists alone. Neither system alone can adequately create healthy people and healthy communities and otherwise serve the health needs of the public. The health care system needs a strong public health system, and the public health system needs a strong health care system.

In the early part of the last century, private and public health systems were closely intertwined. Medical advances made after World War II shifted the main focus to private medical care—and the public health system received less attention. To worsen matters, environmental health issues became separated from the scope of public health. As a result, these systems have become separated into specialized "silos"—groups or organizations devoted to specialized issues or concerns. A system comprised of silos isn't really a system at all because the various silos do not share a common vision or common goals—frequently, they do not communicate with each other or share data and information at the population level. As a result, they each develop their own "corporate cultures" making it difficult to measure health improvements in our communities (Lasker, 1997).

The good news is that many voices throughout the state and the nation began seeking a change toward systems-wide thinking. They realize that a true commitment to shared action and thinking is needed to address environmental, public and private health system issues in society today. This means that issues of differing vocabulary, varying mental models, a diversity of styles and understanding must be respected, understood and taken into account if the health of the public is to improve, build public health

system capacity, and achieve a shared vision.

This plan represents a decisive shift of thinking and action to achieve a shared vision. It is a policy pathway toward sustainable change and improved health for all.

Public Health as a System

What differentiates unconnected people and organizations each working at improving quality of life from a system working to improve quality of life? The various components of a system work together toward a common vision, serve a common mission, and have common goals. Over the past decade, the many agencies and organizations that contribute to the health of the public in Wisconsin have already begun acting more like a system. Local health departments and their Boards of Health for instance, have reached out to their constituents to create community public health plans that have resulted in strong new partnerships with local providers, civic organizations, hospitals, ethnic groups, and others.

Healthiest Wisconsin 2010 takes that notion of a system one step further—providing the framework for coordination and collaboration both within communities and across the whole state. The foundation of the framework starts by defining public health and articulating a common vision and mission. The next step is elaborating on the work that must be done to create new partnerships and significantly strengthen public health system capacity.

Definition of Public Health

Public health is defined as a system, a social enterprise, whose focus is on the population as a whole. The public health system seeks to extend the benefits of current knowledge in ways that will have maximum impact on the health status of the entire population (Turnock, 2001) several key areas (Public Health Functions Steering Committee, 1994):

1. Prevent injury, illness and the spread of disease.
2. Create a healthful environment and protect against environmental hazards.
3. Promote and engage healthy behaviors and promote mental health.
4. Respond to disasters and assist communities in recovery.
5. Promote accessible, high quality health services.

The public health system is a broad collection of partners with a complex mission that focuses on the entire population. No one organization could fulfill the mission alone. While government has clear roles and responsibilities related to the health of the public that are defined in law, the system can only be viable if many organizations in partnership with communities also actively participate and contribute. The mutual work of the partners must be collectively focused on achieving the shared vision of "healthy people in healthy Wisconsin communities."

Vision: Healthy People in Healthy Wisconsin Communities

A healthy Wisconsin is a place where…

- All individuals reach their highest potential.
- Communities support the physical, emotional, mental, spiritual, and cultural needs of all people.
- People work together to create healthy, sustainable physical and social environments for their benefit and that of future generations.

Mission: to Protect and Promote the Health of the People of Wisconsin

The relationship between healthy people and healthy communities is clear. Building good health begins at the family and neighborhood levels, with each of those entities connecting to ever larger groups—local government, the county, the state, the nation and the world. Global environmental, economic and political events will affect local opportunities for success. Each level affects the others—yet the beginning is the family and local community. That is where the initial strong base must be built, the foundation on which all other health rests.

Core Principles and Values that Support the Transformation of Wisconsin's Public Health System

As the partners who developed this plan began discussing how they carried out their public health functions, it became clear that there were common underlying principles and values to guide progress for the future. These principles and core values have been widely supported throughout Wisconsin and have been endorsed by five Community Review Teams. They rest upon a shared belief in social justice, the common good, and creating a positive future for Wisconsin residents. Understanding these principles and using them as a touchstone will strengthen public health system partners' efforts to create and sustain healthy individuals, families, and communities.

1. If everyone in Wisconsin works together to guarantee access to health services, health information, and environmental protection, the public health system will be able to create and sustain healthy communities and individuals.
2. A strong public health system can help create an environment where individuals are more likely to reach their fullest potential.
3. Prevention is the most effective public health strategy.
4. "Good health" results from the positive interaction of physical, mental, emotional, spiritual, cultural and environmental forces.
5. Collaboration is key to success. No single sector or agency can accomplish the goal of improved public health. Collaboration, partnerships, and resource sharing will provide the maximum benefit for communities.
6. Government has a responsibility to establish leadership and facilitate the achievement of the public health mission and vision in Wisconsin. While governmental agencies cannot and should not be made solely responsible for guaranteeing the public's health, they can and should take responsibility for seeing that the appropriate people and groups come together to address public health issues.
7. The public health system must provide a voice for all. It is important to actively include and listen to the voices for all people and to honor the perspectives of diverse cultures.
8. All Wisconsin residents deserve a basic level of health services. Improved individual and community health will happen when basic health services are affordable for all and access does not depend on race, cultural heritage, or geographic location within the state.
9. The more decisions are based on reliable data, better public health decisions will be made. The public health system should work to provide reliable, meaningful data to those involved in making public or private health decisions (including citizens, elected officials, and advocacy groups).
10. Privacy and confidentiality must be assured. It is important to the people of Wisconsin.
11. Sound decisions are data-driven and based on principles and practices that are well-established in the biomedical, social, and environmental sciences.

Partners in the Public Health System

Rosie Carradine-Lewis is retired…sort of. In fact, for years she has volunteered much of her time teaching and guiding teen mothers in Milwaukee. She gives classes on parenting, goes into homes to educate the teens about childcare and nutrition, and speaks up on behalf of teen mothers. In her spare time, she works to reduce lead poisoning of young children. "I'm not a salaried person," she says. "But I feel that I'm a part of making things healthier and the environment better." And she's right.

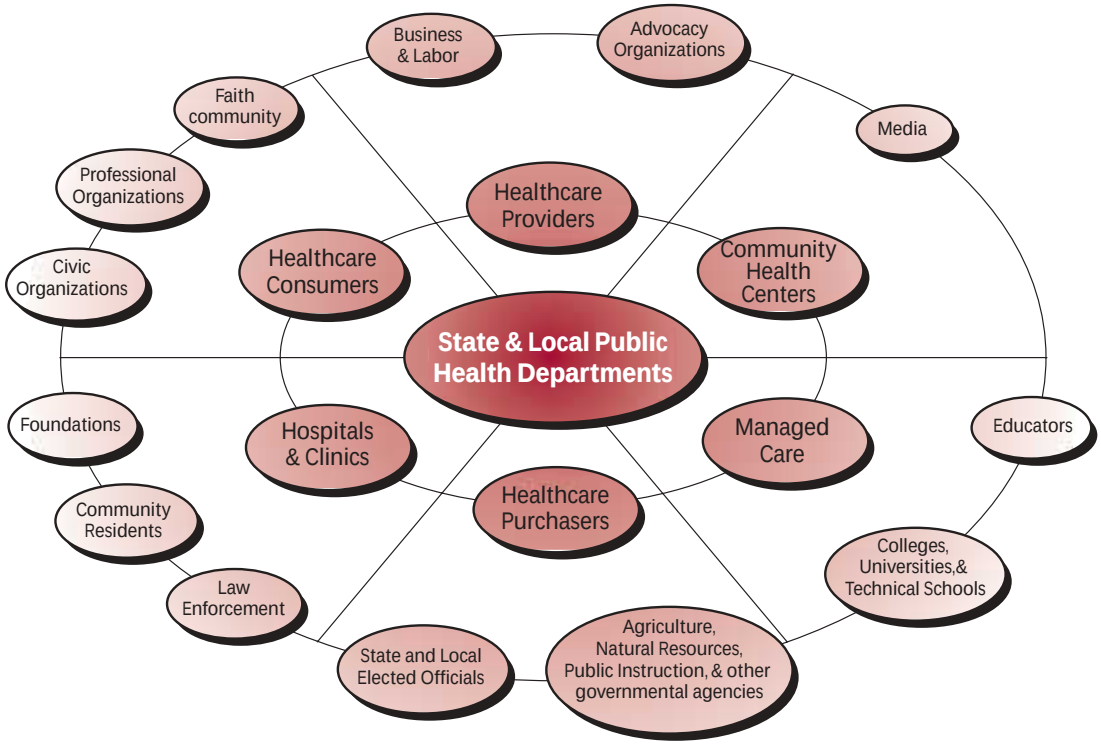
Across town, Kelli Jones is a regional public health nursing consultant with the State of Wisconsin Division of Public Health. "Prior to working in public health, I worked as a labor and delivery nurse in a hospital where I felt I was racing against time, providing competent nursing care with little time for patient-nurse interaction. I always knew there was more to nursing; and I found it in

public health. To me, public health nursing is the practice of promoting and protecting the health of individuals, families and populations. We use knowledge from nursing, social sciences, and the public health sciences. The goal is to prevent disease, disability, injury, and premature death. We help create conditions in which people can be healthy. You can find public health nurses in homes, on the frontlines of communicable disease investigations, in state legislative offices proposing changes in public policy…the list goes on. The job we do is important and enormous in scope—and we can't do it alone. If we are going to serve the community, we must work with teams of people who include community members, agencies and organizations, as well as the many public health disciplines to find out what is needed, then work together to get the job done. Working in public health has been very rewarding. I can actually leave work each night knowing that I've helped to save a little piece of the world each day!"

Both of these women are part of the public health system. One is a volunteer for an advocacy agency; one a paid employee of the state government. Together, they are just the tip of the iceberg when it comes to naming all the partners in the public health system.

The diagram that follows shows the diverse public health system partners needed to improve and sustain the health of the public. State and local health departments are at the core because they represent the anchor and foundation of the public health system. They also have a statutory responsibility to protect the health of the population as a whole. Particularly noteworthy is the diversity of groups represented—everything from hospitals and clinics to faith communities, the media, labor, business, law enforcement and education. The diagram is drawn as a network to emphasize that all the partners depend on each other to carry out the work of the system.

PARTNERSHIPS THAT WORK



The public health system for Wisconsin requires sustained, coordinated partnerships between government, the public, private, nonprofit, and voluntary sectors that serve Wisconsin's communities—both locally and statewide.

Partnerships that Work

Already in this state, there are many examples of how the public's health can be served by partnerships between local public health departments, traditional health care organizations, and a broad spectrum of other partners.

Example 1:
Building an immunization registry

Greg Nycz, Director, Health Policy at the Marshfield Clinic, experienced first hand the benefits that a private/public partnership can yield to a community. He realized that the transformation described by this document has already taken root in north central Wisconsin where collaborative efforts have taken place to develop an immunization registry infrastructure, entitled the Regional Early Childhood Immunization Network (RECIN). With help from the Wood County Health Department and other local health department leaders, they have brought competing private sector systems and providers together in the spirit of collaboration. The RECIN is collaborating with the Department of Health and Family Services and its Wisconsin Immunization Registry (WIR) to build a statewide immunization infrastructure. RECIN is currently supporting substantial gains in immunization performance to benefit all of our children. Infrastructure, leadership, and collaboration leads to progress—it can be done.

Example 2:
Serving the underserved

In 1996, as part of a Healthier Communities Initiative, local health departments in southeastern Milwaukee County surveyed their residents. They discovered that 6 percent of respondents had no health insurance at all—and therefore ended up using the hospital emergency room as their only source of "primary" health care.

Soon after the survey was completed, Carol Wantuch, City of Cudahy Health Officer, was having lunch with Lee Jeager, the new administrator of St. Luke's South Shore Hospital. St. Luke's had just purchased the former Trinity Hospital and was trying to decide how best to use the facility. "I told Lee about the 6 percent uninsured people in the area and how they did not want to go to the free clinic in Milwaukee. I mentioned that I knew that St. Luke's had a wonderful Family Practice clinic and I suggested in an offhand way that perhaps he could move the clinic over to St. Luke's South Shore Hospital."

Little did Carol realize that she had started a chain reaction. Though St. Luke's couldn't move their family practice clinic because of accreditation issues, they liked the concept of having some place where uninsured people could go and ended up presenting the idea to Lakeshore Medical Clinic.

Two years later, in September 1998, the Packard Avenue Community Clinic opened. Lakeshore started it as a free urgent care clinic, but it has now evolved into a primary health care clinic—which focuses on early treatment and prevention. Although only open on Tuesday evenings, it has served well over 1,600 people.

The key to this clinic's success is the broad support it receives throughout the community. For example, volunteer physicians and nurses staff the clinic. The Cudahy Lions and the Southeastern Zone Lions provide vouchers so people with diabetes can cross the street to a Walgreen's and get their insulin, syringes, and test strips.

Example 3:
Addressing environmental contamination

Across a municipal line from an abandoned landfill sits a community housing unit and a middle school. An environmental investigation conducted by the Department of Natural Resources (DNR) identified a significant plume of groundwater contaminated with chlorinated hydrocarbons, including vinyl chloride, a chemical associated with the development of cancer in humans. The source of the contamination was most likely the abandoned landfill, and the contamination appeared to extend beneath the homes and middle school in the adjacent community.

In this case, the ball got rolling because a DNR staff member was concerned about the potential for vinyl chloride vapors to migrate into homes and the school. The staff member contacted the local public health department,

which is now implementing a plan to assess the potential public health impacts and fix any threatening situations. This effort involved:

- *A private environmental contractor* – to complete the assessment of groundwater contamination in the neighborhood and perform air sampling within the schools and some of the homes.
- *The DNR* – to work with the environmental contractor and attempt to identify a party responsible for the contamination and, if necessary, direct the remediation.
- *School District Officials, PTA and Teachers' Union* – to coordinate air sampling activities within the school building and risk communication efforts with parents and teachers.
- *The Homeowners' Association* – to secure permission for sampling on private property and communicate risks to homeowners.
- *The Wisconsin Division of Public Health* – to assist with data review, prepare an exposure risk assessment, and assist in preparing communication strategies for members of the community.
- *A Public Health Laboratory* – to coordinate sample and analytical methods and data reporting.
- *The local media* – to ensure balanced and accurate reporting.
- *The village board of the neighboring community* – potentially responsible for the contamination, the village was approached to provide funding for the environmental investigation.

Partnerships like these illustrate both the wide-range of public health challenges to be addressed in Wisconsin and the need to build sustainable partnerships across both traditional and non-traditional public health borders.

Work of the Public Health System

The work of Wisconsin's public health system is described by core public health functions that are defined in chs. 250 and 251, Wis. Stats., and the essential public health services identified in this plan.

Core Public Health Functions

In 1993, then Governor Tommy G. Thompson signed into law a landmark revision of Wisconsin's public health statutes. The legislature had responded to a groundswell of activity initiated by public health professionals, state and local health departments, policy leaders, key agencies and organizations who all believed that better laws were needed to improve and protect the health of the public. The result was a major policy initiative.

Within the statutes there are requirements for the Department of Health and Family Services, all local health departments, their boards of health, and health officers that can be grouped into three broad population-based core public health functions.

1. Assessment: D*etermine community strengths and current/emerging threats to the community's health through regular and systematic review of the community's health indicators with the public health system partners.*

To clearly understand the strengths, gaps, and opportunities in a community's public health system, each community and the state as a whole must complete regular assessments of the health of their community. The assessment will be accurate and meaningful only if it involves the systematic collection, assembly, and analysis of data and information on the health of the community and identify strengths and current and emerging problems. This will only be effective if diverse partners are all "at the table" working together for the common good of the community. Data and information on the health of the community must be made available to the public and for the basis for community health improvement planning and collective action.

2. Policy Development: *Establish a community health improvement plan and action steps with the public health system partners to promote and protect the health of the community through formal and informal policies, programs, guidelines, environmental changes, and programs and services.*

Public health departments throughout the state have a responsibility to provide leadership that serves the public's interest, fosters local commitment and involvement, and

advocates for the equitable distribution of public health resources and complementary private activities commensurate with current and emerging public health needs and issues. This is achieved by working with their community partners to develop policies with comprehensive goals, plans, services, and guidelines that protect and promote health, prevent disease, injury, premature death, and disability in the community.

3. Assurance: *Address current/emerging community health needs and threats through governmental leadership and action with the public health system partners. Take necessary and reasonable action though direct services, regulations, and enforcement. Evaluate the improvement plan and actions and provide feedback to the community.*

"Assurance" in the public health context goes beyond providing direct services. The intent is to assure conditions in which the community can be healthy. It includes monitoring progress on health priorities and providing feedback to communities. It speaks to a basic ethic in governmental public health agencies— when a significant problem is identified, there is an affirmative duty and responsibility to respond and address that problem. Where necessary, assurance requires carrying out action through enforcement. It also implies that government leadership is necessary to explore all possibilities with the public health system partners to make sure that each community's current and emerging needs are identified and met. It means that when the community partners cannot, or will not, help meet identified community needs, that government must provide the leadership for doing so.

Twelve Essential Public Health Services

The work of the public health system—all the partners around the state—builds from the 3 core functions to encompass 12 essential public health services. The essential public health services represent an important pathway to attain the public health vision. Leadership for the 12 essential public health services is anchored in state and local health departments and local boards of health. They are responsible for assuring that the services are available and that they are coordinated and shared among the public health system partners in both local and statewide communities. These services must be in place to sustain a strong public health system. Accountability for these services is shared among all the public health system partners. Individual partners will vary in their ability to carry out these services based on organizational mission, resources and capacity. For example, it can be expected that the responsibility for Essential Service #6 "Enforcement" falls predominately to state and local governmental public health agencies, whereas responsibility for Essential Service #3 "Education" is shared among all the partners. As local and statewide public health systems transform over the next ten years, performance measurement objectives and workforce competencies will be developed as the next logical step to monitor progress and increase capacity for coordinating and delivering these services.

1. Monitor health status to identify community health problems.
   Monitor and assess a community's health status. Identify community assets and threats to health and determine current and emerging health needs.
2. Identify, investigate, control, and prevent health problems and environmental health hazards in the community.
   Use health laboratories and other resources to investigate disease outbreaks and patterns of environmental health hazards, chronic disease and injury. Identify relationships between environmental conditions and the public's health. Develop and implement prevention and intervention strategies.
3. Educate the public about current and emerging health issues.
   Promote and engage in healthy behavior and lifestyles by making health information available in a variety of formats, styles, languages, and reading levels so it can be effectively communicated to the diverse people in Wisconsin. Regularly

share and discuss current and emerging health issues with policy makers and decisions makers throughout the state (such as health care providers, elected officials, agency and department leaders).

4. Promote community partnerships to identify and solve health problems.
   Collaborate with community groups and individuals (including those not traditionally considered connected to "health care") to address local and statewide determined health and environmental issues. Provide needed infrastructure support to build and maintain inclusive viable partnerships. Develop strategies for assessing and engaging the full range of individual and community assets to improve health.

5. Create policies and plans that support individual and community health efforts.
   Provide the leadership to drive the development of community health improvement processes, plans, and policies that are consistent throughout the state but address local needs and conditions.

6. Enforce laws and regulations that protect health and ensure safety.
   Efficiently and effectively enforce state and local laws and regulations that protect and promote the public's health.

7. Link people to needed health services.
   Provide education, outreach, case-finding of people outside the system, referral, care coordination, and other services that promote health that help people better use the public health and health care services to which they have access.

8. Assure a diverse, adequate, and competent workforce to support the public health system.
   Lead and support efforts to improve the quality, quantity, and diversity of health professionals in the state. Promote the development of professional education strategies and programs that address state and local health needs.

9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
   Regularly evaluate the public health system's performance, processes and outcomes to provide information necessary to define accountability, allocate resources, reshape policies and redesign services.

10. Conduct research to seek new insights and innovative solutions to health problems.
    Develop partnerships with institutions, colleges, vocational and technical colleges, and universities to broaden the range of public health research (to include, for example, issues and communities that were historically ignored, and emerging issues that need attention). Conduct timely scientific analysis of public health issues. Engage testing of innovative solutions at the local and state levels.

11. Assure access to primary health care for all.
    Seek out and develop creative approaches to improve access to primary health care for all people, especially those who confront economic, linguistic, cultural, geographic or other barriers.

12. Foster the understanding and promotion of social and economic conditions that support good health.
    Raise awareness of social and economic conditions that affect the public's health. Promote conditions that improve the health of a community. Engage broad community partnerships between the private, nonprofit, public, and voluntary sectors to confront these issues in order to have a healthy community. Foster conditions that allow families and neighborhoods to nurture and protect children.

A Look Ahead

This section has defined the vision, core principles and values, mission, core public health functions, essential public health services, and partners for Wisconsin's public health system. The next section defines where the public health system should focus its efforts to transform in the coming decade:

- The vision, mission, and overarching goals drive the transformation.
- The system (infrastructure) priorities provide the capacity to deliver on the health priorities.
- The health priorities provide the greatest leverage for eliminating the burden of health disparities and protecting and promoting the health of all.

REFERENCES

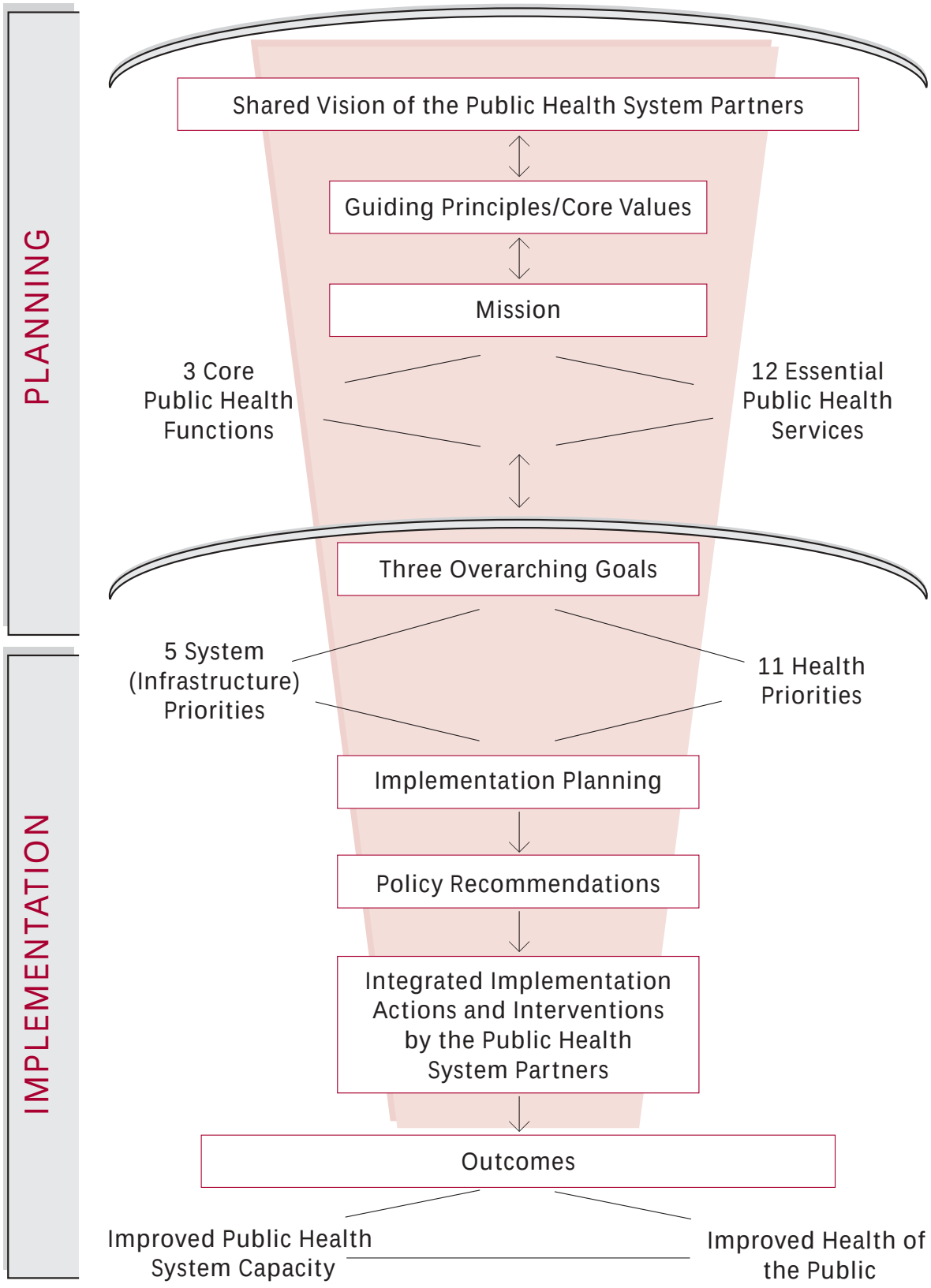
Durch, J.S., Bailey, L.A., & Stoto, M.A. (1997). *Improving Health in the Community: A Role for Performance Monitoring.* (Institute of Medicine). Washington, D.C.: National Academy Press.

Lasker, R.D. & The Committee on Medicine and Public Health. (1997). *Medicine and Public Health: The Power of Collaboration.* New York Academy of Medicine. New York, NY. Available: http://www.nyam.org/pubhlth

Public Health Functions Steering Committee. (1994). *Public Health in America*. (Adapted). Available: http://www.health.gov/phfunctions

Turnock, B.I. (2001). *Public Health: What It Is and How It Works*. Gaithersburg, MD: Aspen Publishers, Inc.

Framework for Wisconsin's Public Health System Transformation 2000–2010



FRAMI

PLANNING

IMPLEMENTATION

Framework for Wisconsin's Public Health System Transformation 2000–2010

Shared Vision of Wisconsin's Public Health System Partners

Healthy people in healthy Wisconsin communities

A healthy Wisconsin is a place where…

- All residents reach their highest potential
- Communities support the physical, emotional, mental, spiritual, and cultural needs of all people
- People work together to create healthy, sustainable physical and social environments for their own benefit and that of future generations

↓

Guiding Principles / Core Values of the Public Health System Partners

↓

Mission

To protect and promote the health of the people of Wisconsin

Core Public Health Functions

1. ***Assessment:*** Determine community strengths and current/emerging threats to the community's health through regular and systematic review of the community's health indicators with the public health system partners.
2. ***Policy Development:*** Establish a community health improvement plan and action steps with the public health system partners to promote and protect the health of the community through formal and informal policies, programs, guidelines, environmental changes, and programs and services.
3. ***Assurance:*** Address current/emerging community health needs/threats through governmental leadership and action with the public health system partners. Take necessary/reasonable action through direct services, regulations, and enforcement. Evaluate the improvement plan and actions, and provide feedback to the community.

Essential Public Health Services

1. Monitor health status to identify community health problems
2. Identify, investigate, control, and prevent health problems and environmental health hazards in the community
3. Educate the public about current and emerging health issues
4. Promote community partnerships to identify and solve health problems
5. Create policies and plans that support individual and community health efforts
6. Enforce laws and regulations that protect health and insure safety
7. Link people to needed health services
8. Assure a diverse, adequate, and competent workforce to support the public health system
9. Evaluate effectiveness, accessibility and quality of personal and population-based health services
10. Conduct research to seek new insights and innovative solutions to health problems
11. Assure access to primary health care for all
12. Foster the understanding and promotion of social and economic conditions that support good health

Overarching Goals

Eliminate Health Disparities | *Promote and Protect Health for all* | *Transform the Public Health System*

System (Infrastructure) Priorities

- Integrated electronic data and information systems
- Community health improvement processes and plans
- Coordination of state and local public health system partnerships
- Sufficient, competent workforce
- Equitable, adequate, and stable financing

Health Priorities

- Access to primary and preventive health services
- Adequate and appropriate nutrition
- Alcohol and other substance use and addiction
- Environmental and occupational health hazards
- Existing, emerging, and re-emerging communicable diseases
- High risk sexual behavior
- Intentional and unintentional injuries and violence
- Mental health and mental disorders
- Overweight, obesity, and lack of physical activity
- Social and economic factors that influence health
- Tobacco use and exposure

↘ ↙

Policy Recommendations

↓

Actions and Interventions by the Public Health System Partners

↓

Outcomes: Improved Health of the Public and Improved Public Health System Capacity

SECTION TWO:

Goals: Focus FOR THE Future

Introduction

This plan employs two key elements of the transformational framework needed to energize the public health partners so that they begin functioning as an effective system. These elements work to transform individual sectors into an effective public health system: (1) common goals "we're headed over there," and (2) common priorities "these are the most important things we have to work on to get there." Without a partnership to achieve the common goals and priorities, we cannot achieve the level of outcomes to justify larger societal investments in the public health system. A shared commitment to an agreed-upon set of statewide priorities is necessary to generate successful statewide outcomes which in turn is necessary if we are to be accountable for state level investments.

Goals

Three overarching goals flow from the vision and mission. The goals have guided the transformation process and the subsequent implementation planning. The three goals are:

1. Promote and protect the health for all.
2. Eliminate health disparities.
3. Transform Wisconsin's public health system.

Priorities (Sections 3 and 4)

From the beginning of the Wisconsin Turning Point Initiative, the Transformation Team believed that a compelling set of agreed-upon priorities were needed to shape public health policy, funding, capacity, and service delivery decisions over the next ten years. These priorities fell into two categories:

System (Infrastructure) Priorities

When addressed, these system priorities will provide the capacity (infrastructure) to address the health priorities and deliver on the core functions and essential public health services. These system priorities must be in place for the partners to act and for health to be improved.

Health Priorities

When addressed, these health priorities have significant potential for enhancing and protecting health thus decreasing and eliminating the underlying causes of diseases, injuries, and conditions affecting people in our communities throughout Wisconsin.

Goal 1: Protect and Promote the Health for All

Overview

This goal addresses the need to protect and promote health by creating conditions in which all residents of Wisconsin can be healthy. It seeks to increase the quality of life by creating conditions in which individuals, families, and communities can be healthy. Health in this context is defined as "a state of well-being and the capability to function in the face of changing circumstances" (Durch, Bailey, & Stoto, 1997). Health includes both

personal and societal dimensions. The personal dimension of health includes acquiring knowledge, acting upon that knowledge, and creating healthful opportunities for individuals and families to make decisions. The societal dimension of health includes coordinated efforts within the community in partnership with the public health system to assure conditions in which people can be healthy. This includes developing and sustaining collaborative efforts aimed at promoting and protecting health in the context of the entire community and its environments to include physical, social, and environmental health. Personal and societal dimensions are interconnected and as such exert significant potential to increase life expectancy and increase the quality of life. Quality of life reflects a general sense of happiness and satisfaction with individual lives and the community environment. Quality of life includes all aspects of life including health, schooling, occupation, recreation, culture, rights, values, beliefs, spirituality, and aspirations (U.S. Department of Health and Human Services, 2000).

Public health is grounded in the belief that prevention is the vehicle by which health status is attained and maintained. There has been considerable debate in the public health arena over the meaning of prevention and much criticism by what some term the "deficit-based" nature of prevention. This plan encompasses a comprehensive model of prevention that includes both reducing risk factors and behaviors while simultaneously enhancing protective factors and behaviors (assets, resiliency). This has been, and will continue to be, the underlying foundation of this plan and its subsequent implementation plan for the year 2010. Efforts will be directed to reducing and eliminating some factors that are harmful to health, such as tobacco use. To take only a "strengths based" approach to prevention would be short sighted and neglect of some of the most critical and powerful risk factors that jeopardize the health of the public. At the same time, focusing only on risk factors fails to build the capacity of the Wisconsin people and the resource-base available to them in their families, neighborhoods, and communities. Therefore, efforts among the partners must be directed to increasing the skills and resources available to people that are directly related to sound public health practice. Prevention in Wisconsin is not a "one-sided coin." It embraces a multifaceted approach of both reducing risks and enhancing safeguards to protect and promote the health of the public.

Protecting health for all requires an understanding of the complex and diverse processes (determinants of health) that produce health or result in disease, injury, and premature death and disability in individuals, families, and the community as a whole. Health is not solely dependent on medical care. Health is influenced by factors that include individual behavior, disease, biology, social and physical environments, genetic endowment, access to care, well-being, and prosperity (Evans & Stoddart, 1994). Moreover, social, environmental, economic, and genetic factors are seen as contributing to differences in health status, and therefore, as presenting opportunities for the public health system partners to intervene at the individual, family, and community-wide levels (Durch, Bailey & Stoto, 1997). The health of individuals and families is interdependent and interwoven with the health of the community. Healthy people and families contribute to healthy neighborhoods. Healthy neighborhoods contribute to healthy communities. Healthy communities contribute to the health of the state. Healthy states contribute to the health of the nation. Healthy nations contribute to the health of the world. The power of this interrelationship has the potential to result in profound benefits for all.

Goal 2: Eliminate Health Disparities

Overview

This goal seeks to eliminate health disparities with a particular emphasis on socially and economically disadvantaged population groups throughout Wisconsin. Elevating the health for populations most at risk elevates the health for all. Health disparities are best understood as significant gaps in health status and are the result of the interaction of many

factors, both individual and societal. Some of these factors include age and gender differences, social inequalities, culturally inappropriate health care and education, inadequate financial resources, language barriers, geographic distinctiveness, the location and supply of health care providers, and insensitivity to sexual orientation or special health care needs.

Wisconsin has a sound health care system. This includes a strong base of employer-sponsored health insurance coverage, an extensive Medicaid program, a supplemental state Medicaid administered insurance program in BadgerCare, resulting in low numbers of uninsured. However, racial and ethnic disparities in health still exist in Wisconsin. Disparities in health status between majority and non-majority populations is linked to education, environment, income and other socioeconomic factors, as well as race and ethnicity, culture, and lack of access to quality health care and preventive health services. The disease burden among racial and ethnic populations in Wisconsin is evidenced by higher rates of infant mortality, cancer, cardiovascular disease and stroke, diabetes, HIV/AIDS, asthma, and unintended injuries (Wisconsin Department of Health and Social Services, 1993).

Racial and ethnic minority groups reside throughout the state and constitute about 13 percent of Wisconsin's population (U.S. Census Bureau, 2000). African Americans represent the largest racial and ethnic group in Wisconsin, followed by Hispanic/Latinos, Asians, and American Indians. A majority of African Americans are concentrated in the metropolitan and/or urban areas of southeastern and southern Wisconsin. American Indians, on the other hand, are distributed between tribal, rural and urban communities, with an increasing number living in metropolitan areas. The Asian population is generally located in the southeastern and northeastern metropolitan areas of the state and consists primarily of Hmong, Laotian, Vietnamese, and Cambodian populations. In contrast, Hispanic/Latinos, consisting primarily of Mexican American, Puerto Rican, Cuban, and Central and South American groups, live throughout Wisconsin, with a majority living the southeastern region of the state (Wisconsin Department of Health and Family Services, 2001).

Eliminating health disparities in racial and ethnic minority populations demands a major commitment to identify and address the underlying causes of higher levels of disease and disability. Moreover, effective delivery of preventive and treatment services will require working more closely with these communities to identify implementation strategies that are culturally sensitive and linguistically appropriate (U.S. Department of Health and Human Services, 2000).

Socioeconomic disparities in health have been identified over time and place and are perpetuated by social and economic inequalities, inadequate resources, poor nutrition, inadequate educational opportunities, unsafe living and working conditions, and poor access to quality health care. In 1990, a majority of persons in poverty defined themselves as white. Nonetheless, within Wisconsin's racial and ethnic groups, the proportion of persons in poverty was much higher than in the total Wisconsin population (U.S. Census Bureau, 1990).

Gender disparities are evident in that women suffer more from depression and osteoporosis than men. Also, although women have heart attacks less frequently than men in their middle years, women have atypical warning symptoms and are more likely to die from a heart attack (U.S. Department of Health and Human Services, 2000). Overall, men have a lower life expectancy and higher death rates from leading causes than women (U.S. Department of Health and Human Services, 2000). Age disparities are common as well. For example, the elderly are afflicted more by conditions ranging from cancers to cardiac disease to suicide, and the morbidity from these diseases dramatically increases with age. Conditions that occur more frequently among young adults include schizophrenia and sexually transmitted diseases.

Wisconsin's communities are becoming increasingly more diverse. Therefore, the future of the health of Wisconsin will be influenced by our success in eliminating health disparities across different

racial/ethnic, cultural, linguistic, sexual, geographic, social and economically diverse groups.

Goal 3: Transform Wisconsin's Public Health System

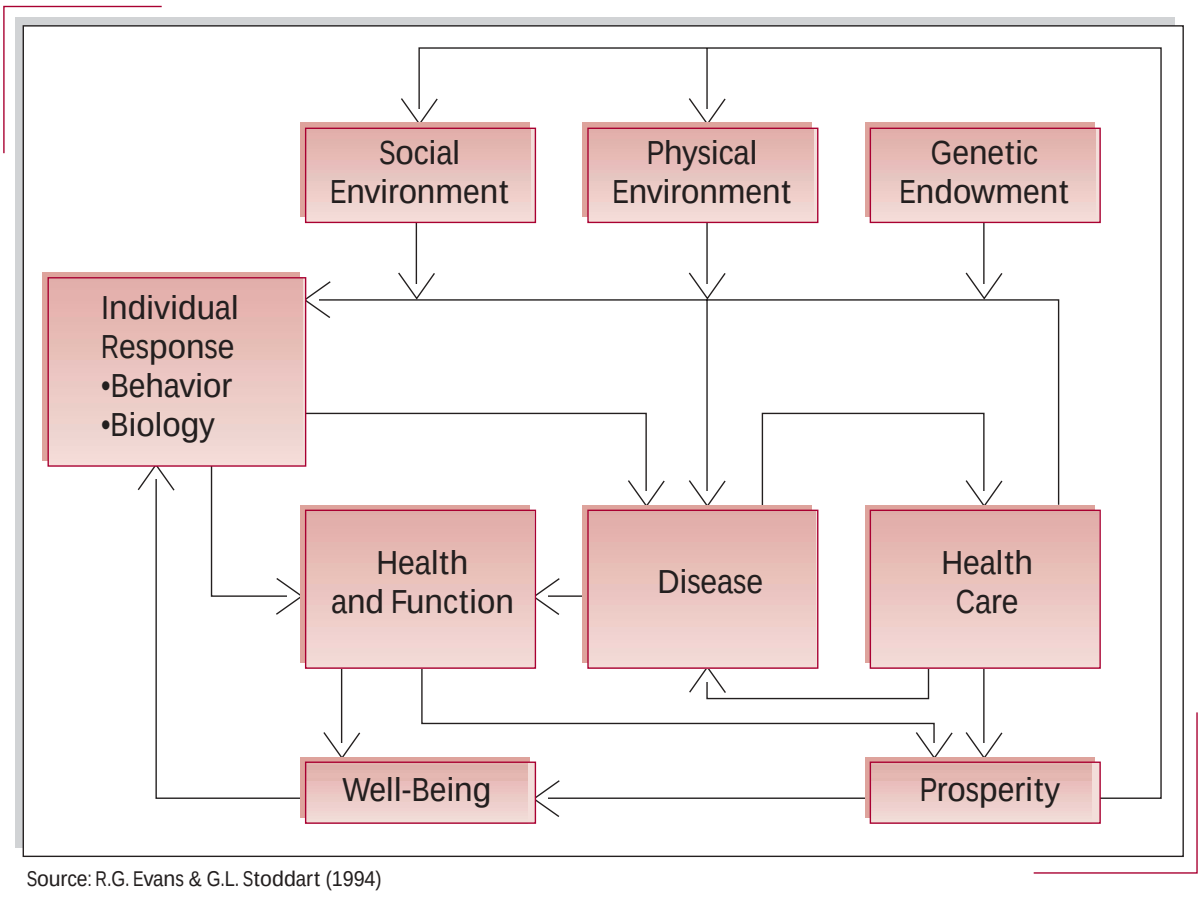
Overview

This goal seeks to transform Wisconsin's public health system into a coordinated, effective, and sustainable system. A strong public health system embodying sustainable collaborative partnerships can deliver untold benefits to the people of Wisconsin. These benefits include protecting health, improving the quality of life, extending life expectancy, and containing the costs of health care.

The public health system is best understood as a broad enterprise, anchored in government. It is a partnership for collective action between government and its partners in the public, private, nonprofit, and voluntary sectors who work toward the attainment of their shared vision of "healthy people in healthy Wisconsin communities."

The public health system focuses its efforts to the population as a whole. "The public health system seeks to extend the benefits of current knowledge in ways that will have maximum impact on the health status of the entire population. It is a collective effort to identify and address the unacceptable realities that result in preventable and avoidable health outcomes" (Turnock, 2001).

MODEL OF THE DETERMINANTS OF HEALTH



Source: R.G. Evans & G.L. Stoddart (1994)

Health and illness are influenced by the interaction of multiple factors that include individual behavior, disease, biology, social and physical environments, genetic endowment, access to care, well-being, and prosperity (Evans & Stoddart, 1994). These factors are known as the "determinants of health." Moreover, health and illness can be impacted at a variety of levels—primary, secondary, and tertiary prevention. The greatest contribution of the public health system is primary prevention. Primary prevention focuses on protecting health by providing health promotion and specific protection services before illness, injury, premature death, and disability occur. Primary prevention focuses on the population and the environment.

Addressing the complexities of the determinants of health and the levels of prevention requires a partnership of many to protect the health for all. Roles and responsibilities may vary but the commitment to the vision remains the same—"healthy people in healthy Wisconsin communities." This partnership requires a multidisciplinary and multisectoral approach that unites policy leaders, government, and the public, private, nonprofit, and voluntary sectors in an effective, sustainable partnership.

Developing and sustaining a public health system over the next ten years will be a transformation. It requires commitment and courage to move beyond the boundaries of institutions and join hands to achieve a greater vision where all Wisconsin residents are the beneficiaries of its collective work.

Developing and sustaining a public health system requires more than vision and desire to do so. It will depend on strengthening the infrastructure capacity to sustain that transformation. Systems support requires the commitment of financial, technological, and human resources to build and sustain those systems and the reordering of priorities to assure that capacity is developed. This type of commitment addresses and sustains the greater vision where all Wisconsin residents are the beneficiaries of its collective work.

Challenges

Part of the challenge associated with these three goals is logistical and practical. For example, how do we find ways to bring busy professionals, residents, and community organizations and institutions together to address common priorities and mobilize the assets in our communities?

Perhaps a bigger challenge is in changing mental models and attitudes. While many partners in the public health system have started to work collaboratively, most are still used to working independently. Developing and sustaining a transformed public health system over the next ten years requires a commitment to partner and to work together to protect and promote the health of the public and eliminate health disparities. It requires courage to move beyond the boundaries of our disciplines, institutions, and organizations and work together where all the people are the direct beneficiaries of our collective work. Collective work among the partners is requisite if we are to attain our shared vision of healthy people in healthy Wisconsin communities.

REFERENCES

Durch, J.S., Bailey, L.A., & Stoto, M.A. (1994). Predicting Health, Consuming Health Care,

Social Science Medicine, 31:1347-1363, with permission from Elsevier Science Ltd., Kidlington, United Kingdom.

Evans, R.G. & Stoddart, G.L. (1994). Predicting Health, Consuming Health Care. *Social Science Medicine,* 31:1347-1363, with permission from Elsevier Science Ltd., Kidlington, United Kingdom.

Turnock, B.J. (2001). *Public Health: What It Is and How It Works*. Gaithersburg, MD: Aspen Publishers, Inc.

U.S. Census Bureau. (2000). *Census 2000 Redistricting Data*.

U.S. Census Bureau. (1990). *Poverty Status in 1989 by Race*.

U.S. Department of Health and Human Services. (2000). *Healthy People 2010*. 2nd ed. 2 vols. Washington, D.C.: U.S. Government Printing Office.

U.S. Department of Health and Human Services. (2000). [On line]. *Eliminating Racial and Ethnic Disparities in Health.* Washington, D.C.: U.S. Department of Health and Human Services. Available: http://raceandhealth.hhs.gov/sidebars/sbinitOver.htm

Wisconsin Department of Health and Social Services, Center for Health Statistics, Wisconsin Division of Health. (1993). *Minority Health in Wisconsin. Toward a Healthy Diversity.* Madison, WI: Author.

Wisconsin Department of Health and Family Services. (2001). *Minority Populations in Wisconsin.* Madison, WI: Author. Available: http://www.*Department of Health and Family Services*.state.wi.us/Health/MinorityHealth/WIminorityPopulations.htm

SECTION THREE:

System (INFRASTRUCTURE) Priorities

Introduction

Five system (infrastructure) priorities are identified in this plan. These priorities represent a major conceptual shift from state health plans of the past. This shift moves us away from reactive "fix it" approaches and toward proactive "build it" approaches to creating healthy communities. Reactive approaches to community health created disconnected "silos of thinking" and "silos of action." Reactive approaches have created separate "corporate cultures" of medicine, public health, education, mental health, social/human services, and environmental health. These corporate cultures are too often disconnected from the larger business, labor, and commerce sectors.

The goals set forth in this plan cannot be fully achieved without a functioning and responsive public health infrastructure. To produce results that improve health, improve the quality of life, save lives, and increase precious preventive health resources requires a strong and sustained public health system infrastructure. The infrastructure supports capacity for the partners to act on the health priorities and foster conditions in which people can be healthy. These priorities are:

1. Integrated electronic data and information systems
2. Community health improvement processes and plans
3. Coordination of state and local public health system partnerships
4. Sufficient and competent workforce
5. Equitable, adequate, and stable financing

At the national level, various reports and evaluations have described the continuing deterioration of the nation's public health infrastructure. A number of health departments are closing; technology and information systems are outmoded and disconnected; emerging and drug-resistant diseases threaten to overwhelm resources; serious training inadequacies weaken the capacity of the public health system to address new threats and adapt to changes in the health care market. All public health services depend on the presence of a basic infrastructure (U.S. Department of Health and Human Services, 2000).

Infrastructure often refers to roads and bridges, utilities and buildings—the resources that make it possible for us to go about our daily lives. Wisconsin's public health system also needs a sustainable infrastructure. The 5 system priorities represent the framework necessary to achieve agreed upon outcomes of improved health of the public and improved public health system capacity. The infrastructure allows the public health system to effectively respond to the 11 health priorities identified in the next section of this document.

Why are these 5 System Priorities Important?

These 5 system priorities represent the basic capacity needed to attain the goals and vision set forth in this plan. The system priorities do not "stand alone." Rather, they are interwoven and interconnected to the health priorities. They provide essential capacity for

the public health system partners to act—to carry out the 11 health priorities. They provide support to carry out the core public health functions, mandated in Wisconsin statute, of the department, local health departments, and local boards of health. These mandates are set forth in chs. 250 and 251, Wis. Stats. Finally, they provide support to carry out these functions and essential public health services by the system partners.

Data, information, and technology are needed by governmental public health officials and their community partners. Relevant, accurate data enables the public health system to identify current and emerging threats to the health of the public. Data and information help us understand assets and resiliency. Data and information are the cornerstones for action and evaluation to promote health and prevent disease, injuries, and premature death and disability. This priority is essential to fulfill the core public health function of "assessment."

Community residents and community leaders need access to local information about local conditions for local decision making. This priority is essential to fulfill the core public health function of "policy development."

Communities throughout the state are developing partnerships between government, the public, private, nonprofit, and voluntary sectors to collectively take action that improves and protects the health of all communities. No single system can do the complex work of health—preventing disease, protecting health, and eliminating health disparities.

A sufficient and competent workforce is needed throughout the state to eliminate health disparities, reduce risk and enhance resiliency, prevent injuries, reduce exposure to occupational and environmental risks, and continue to build healthy environments for all people. A sufficient and competent workforce requires knowledge of multiple intervention approaches that include education, social support, laws, policies, incentives, and behavioral change. The workforce needs to know how to effectively influence the health of individuals, families, local communities, and the state population as a whole

To effectively address the compelling needs set forth in the 11 health priorities, Wisconsin's public health system partners need sustainable and stable financial resources. Resources support public health system capacity (data/information, planning, partnerships, workforce). Resources help to build shared ownership, to carry out the core public health functions and essential public health services, and are a critical priority if we are to improve the health of the public, achieve our goals, and attain the vision set forth in this plan.

System Priority 1: Integrated Electronic Data and Information Systems

Summary

Wisconsin must develop an integrated electronic public health information system to provide statewide and community-level population data needed for community health status assessment, policy development, assurance, service delivery, resources management and accountability.

Why this is needed

Public health improvement has required that we identify and measure the targeted changes in community conditions. Measurement of community health priorities requires focused information. Never has this been more important than it is today. We lack surveillance systems that are comprehensive. We have major gaps in the ability to access the information base available through hospitals, clinics and physician offices. We fail to quantify health burdens that are understandable and allow for meaningful comparisons, and we lack systematic methods of comparing the costs and effectiveness of various intervention strategies (Foege, 1997).

Sound decisions about public health policies, strategies, and interventions can be made only if useful, appropriate, and timely information is available to the public health system partners, decision makers, and policy leaders. Wisconsin's existing public health information system is not suited to meet

today's vision of "healthy people in healthy Wisconsin communities." Today, local public health activities are documented using either single-purpose, computerized databases or are recorded on paper forms or charts. Computerized databases constitute independent data "silos" from which data exchange is difficult and in some cases impossible. This significantly impairs community-planning efforts. Data and information are often not available to monitor progress toward established public health priorities. As a result, it is extremely difficult to assure taxpayers that their local, state, and federal tax dollars are being effectively used to improve the public's health.

In short, lack of useful, reliable data makes it difficult to assure accountable planning, performance measurement, and measure outcomes in health and system capacity. Wisconsin's communities must have information about local needs and outcomes in order to make effective decisions that support health and foster healthy communities.

In spite of the current system shortfalls, the Wisconsin's Health Alert Network and Training (HAN) program has begun to create an advanced communications infrastructure for the public health system. This is being done in the following ways:

1. T1 wiring grants have been given to 57 local health departments that lacked dedicated, high speed Internet connections. As a result, by the end of 2001, nearly all local health departments will have a high speed dedicated Internet connection.
2. A secure web site has been created for urgent public health communications. This web site allows secure communications, broadcast fax, e-mail, and paging for the public health system.
3. Wisconsin's HAN has created a distance learning capability. Distance learning resources include a real media streaming server for streaming multimedia content over the web (including live web casts), and Web Course Tools (WebCT) which is a system for creating virtual classrooms and courses on the web.

Recommendations

The State, through the Department of Health and Family Services, and other agencies, must provide leadership needed to establish and implement an effective integrated electronic data and information system by taking the following actions:

- Determine improvements in health status and health capacity improvements based on the 5 system (infrastructure) priorities and 11 health priorities identified in this plan.
- Provide leadership to link information systems to determine baseline data and measure the outcomes of this plan: improved health of the public, and improved public health system capacity.
- Coordinate and conduct a statewide assessment of the current public health information requirements so appropriate changes can be made.
- Identify the common information that must always be collected.
- Require that standard data be reported, including characteristics and health status of enrolled populations, services provided, and service outcomes.
- Provide information to assure that state and local resources are targeted toward identified and critical public health priorities and interventions that have the greatest impact.
- Increase the proportion of tribal agencies, local health departments, industry, and the public that has access to Internet, e-mail, and other technologies so they are able to apply data and information to public health practice.
- Increase the proportion of state and local public health agencies that are using geocoding and use of geographic information systems.
- Facilitate representation of information to demonstrate program outcomes and programmatic and fiscal accountability.
- Assure that meaningful data and information are made available in a timely manner to local communities for

decision-making and priority-setting.

- Work with the public health system partners to identify formats that make the data easily understood and used for further analysis by local communities.
- Develop and improve data collection systems to make it easier for the partners to consistently and accurately record and report the variables of race, ethnicity, and socioeconomic status.
- Ensure the confidentiality of person-specific information.
- Emphasize the use of reliable and culturally relevant information to better understand the factors that contribute to disparities.
- Conduct scientific behavioral risk reduction and family health surveys exclusively in and specific to African American, American Indian, Hispanic/Latino, and Southeast Asian communities that experience significant health disparities.
- Collect information that can be used to hold state contractors accountable for the elimination of racial/ethnic and other disparities in health services.

System Priority 2: Community Health Improvement Processes and Plans

Summary

Wisconsin local communities must continue to take responsibility to develop, implement, and sustain community-wide health improvement processes and plans for improving the health of the public. Experience throughout Wisconsin communities has shown that broad-based community health assessments driven by communities is planning that achieves results.

Why this is needed

To improve the health of communities—to make them places where people are healthy, safe, and cared for—requires the ability to work and plan together for the future.

Many factors influence health, quality of life, and well-being within a community. Many entities have a role to play in identifying and responding to community health needs. Great care must be taken to strengthen and preserve community-wide planning rather than categorical needs assessment.

Until recently, governmental, public, and private funding agencies have required needs assessments for specific target populations. Such requirements have moved communities away from thinking about the "whole picture" to thinking only about the "partial picture." This is not to say that assessing the current and emerging needs of special population groups should be discontinued, rather special assessments must be connected and integrated within the broader community-wide health improvement plan.

For example, the infant mortality rate is a powerful indicator to assess the health of community. The national decline in infant mortality during the 20th Century is unparalleled by any other mortality reduction. Infant mortality reduction resulted from multi-faceted systematic community health involvement including significant improvements in environmental conditions and in economic and educational levels of families. However, the persistence of racial and ethnic disparities in infant mortality dramatically illustrate how much more we have to do.

The work of improving the public's health is complex and continuous. It requires the combined and coordinated efforts of not just state and local health departments but all the community partners. This work is not just about finding problems, but also finding strengths and assets in our communities. While planning frameworks are available, there is no universal process that will work for all communities. This is because each community is unique in its needs, challenges, assets, and available resources. Nonetheless, there are important questions that can help communities develop and implement health improvement plans that will make a positive difference in the quality of life for all people. Questions such as:

- What is our vision of a healthy community?

- What are the strengths, assets, and resources in our people, families, neighborhoods, agencies, organizations, and in our community as a whole?
- What data and information are needed to help us identify and prioritize current and emerging health and system problems facing our community?
- Who are our community partners and how will we work together to help one another and our community?
- Are our community programs producing results and making a difference for individuals, families, neighborhoods, and our community as a whole?

Systematic approaches to health improvement take time. They must use performance monitoring as well as the best information on effective strategies to achieve the community's goals. Developing and implementing public health improvement plans requires coordinating the work of all the partners, linking efforts to local and state health priorities, using proven interventions to support and improve health, and knowing how progress will be measured. Careful, community-based planning—with strong collaborative leadership—will allow each community to have confidence that the public health system is their partner and is working with them to achieve the vision of healthy people in healthy Wisconsin communities.

Recommendations

- Communities must complete regular assessment and evaluation of their health needs as a cornerstone of effective community health improvement health planning.
- All community partners must ensure that community health improvement plans address health disparities and assure inclusion of the voices of diverse populations within the community.
- All partners must strive to move away from categorical needs assessment, and instead develop integrated plans and processes that focus on the health of the whole community.
- Local health departments must provide leadership in community health improvement planning efforts.
- The State, in collaboration with local health departments, must identify staff and resources that can be dedicated to working with community partnerships to ensure the success and sustainability of the partnerships and the community's health improvement plan.
- State and local health departments must make sure that the community health improvement plans are publicized, implemented, and monitored.
- The State must ensure that resources (funding, data, and personnel) are available to support local community health planning and improvement processes.

System Priority 3: Coordination of State and Local Public Health System Partnerships

Summary

The productive engagement of all the public health system partners and their networks is essential to achieving the shared vision. To be effective, the work of Wisconsin's public health system must be coordinated through collaborative partnerships at both the state and local levels.

Why this is needed

Partnerships foster shared planning, decision-making, and resource sharing. Partnerships prevent unnecessary duplication of services and gaps in service. They clarify roles, responsibilities, and accountability of the partners. The work of the public health system is so important that all the partners must ensure that resources are used most effectively and benefit the health of the public.

The rising cost of health care is a growing concern to everyone, including elected officials, employers, and taxpayers. There is growing pressure to ensure that investments pay off. This means a focus on improving integrated delivery of health care and preven-

tion services. This must include a strong focus on the environment (physical, social, and occupational) and prevention of human health hazards. The rising costs of health plans require partnerships between the public health system and the business and labor sectors to assure that effective prevention programs are incorporated in health plans. Prevention saves lives and saves precious resources. With regard to the environment, the animal health community is a vital partner in protecting human health. Veterinarians and animal health authorities are anxious to enhance their public health responsibilities by working closely with their partners in the public health system. A coordinated public health system must be structured to ensure that the core public health functions and essential public health services are carried out effectively and with results that pay off in improved health at both the local and state levels.

One of the resounding issues identified through the entire Turning Point Initiative was the need for an inclusive and responsive public health system. The concern emphasizes the need to support the collaborative leadership role that state and local health departments play in developing, mobilizing, and sustaining viable public health system partnerships. Community agencies in the public, private, nonprofit and voluntary sectors face a range of new challenges. Many of these challenges are multifaceted and require a systemic response by multiple partners. These new challenges include: environmental contamination, intentional violence, inadequate nutrition, alcohol and substance abuse, tobacco consumption, and preventing threats to human health (such as Bovine Spongiform Encephalopathy or BSE, sometimes referred to as Mad Cow Disease) by assuring a healthy animal population. In this instance, partners include veterinarians, the Wisconsin State Laboratory of Hygiene, and animal diagnostic laboratories.

For example, a number of traditional and non-traditional partners are needed to work together to prevent intentional and unintentional injuries and violence, e.g., bike helmet safety, child abuse and neglect, seat belts, or trigger locks for guns. The partners include: police, traffic safety personnel, the juvenile justice system, local health departments, community advocates, individuals and families, and even weapon manufacturers. In addition, such approaches and interventions must involve all segments of the community including schools, day care centers, shelters, elected officials, physicians, nurses, health educators, teachers, human service agencies, industrial hygienists, child protective service agencies, and emergency rooms.

Partnerships are long overdue. They are needed. They must be developed and sustained in order to prevent the devastating consequences of illness, injury, premature death and disability in our communities. Partnerships can exert multiple levels of influence. They can take action at a variety of levels—individual and family, institutional and organizational, community-wide, local, state and national. Indeed, it takes the work of many to protect the health of all.

A Partnership Story – Hearing:

When a public health nurse found that Timmy had not passed the hospital newborn hearing screening, the nurse helped his family identify an audiologist with the skills required to test and fit infants with hearing aids. By 2 months of age Timmy has bilateral hearing aids and is moving towards normal development. Now at age two, Timmy is receiving speech therapy and his parents are learning sign language through the “Birth to 3” program.

Because this rural hospital had implemented a universal newborn hearing screening program, Timmy’s hearing loss was identified early. Timmy’s parents recognized the importance of communication from early infancy and were quick to use the resources available to them. The public health system working together with Timmy’s family, birthing hospital, primary care provider, and the “Birth to 3” program have helped to assure a smooth transition from screening to diagnosis and intervention for Timmy and his family.

A Partnership Story – Foster Care:

Joan Grunwald, Sheboygan County's Foster Care Coordinator, knows first hand the importance of community partnerships working together in the best interest of foster children and their families. Within the Sheyboygan County Health and Human Services Department, the Foster Care Program and the Division of Public Health partner closely to provide nursing, medical, and health information services. Social workers, public health nurses, and the staff from both agencies collaborate to meet the health needs of foster children and their parents, as well as provide education and support to their foster parents.

The idea that "all a child needs is love" has proven to be a myth. Children enter the foster care system with many special needs as a result of many unfortunate circumstances, including abuse and neglect. According to Joan Grunwald, "…foster children desperately need services and programs from the community. Community awareness and availability of services are both critical. But, most importantly, effective partnerships promote foster children's physical and mental health. All services contribute to a child's ability to learn and grow, and cope with life events."

So what does the foster child need beyond a caring and safe foster home? Who makes up the necessary community partnerships? The list includes a potential multitude of providers including: physicians, health care providers, dentists, mental health professionals, school and public health nurses, teachers, social workers, and state and local elected officials. All have a place in protecting, educating, and nurturing the healthiest development of foster children. Community resources contribute many opportunities as well, for independent and transitional living services, employment, recreation and socialization, and continuing education.

Partnerships have the means to invest in children and strengthen our communities. We must never forget that soon these foster children will be adults within our communities. By working together and supporting each other, community partnerships offer great promise in helping these children become well-functioning and contributing adult members of our communities.

Recommendations

- State and local public health departments must provide leadership to engage and coordinate diverse public health system partners in the development and implementation of community health improvement plans.
- Local boards of health must develop policies and provide leadership to foster broad community involvement and commitment to collaborative partnerships.
- Department of Health and Family Services must provide leadership to establish, coordinate, and sustain workgroups, committees, and interagency councils (partnerships) comprised of diverse public health system partners from governmental, public, private, nonprofit, and voluntary agencies.
- Public health system partners, led by the Department of Health and Family Services, must develop statewide public health performance measures to assess and build public health system capacity to carry out the core public health functions and essential public health services
- Governmental public health agencies (Department of Health and Family Services, local health departments, and local boards of health) must ensure their accountability by identifying role, responsibility, and accountability for the core public health functions and essential public health services
- Where appropriate, resource sharing and joint service delivery should be promoted over multiple governmental jurisdictions

System Priority 4: Sufficient and Competent Workforce

Summary

Many system partners (e.g., institutions of higher education, technical colleges, Area Health Education Centers, local health departments) have key roles in the development of the public health workforce. There must be a sufficient number of competent workers in Wisconsin's communities to carry out the core public health functions and essential public health services. Competent leaders, policy developers, planners, epidemiologists, philanthropists, evaluators, laboratory staff, environmental specialists, health care providers and others must be in place to protect the health of the public. This workforce must be culturally and linguistically competent to understand the needs and deliver services to diverse populations in all Wisconsin communities.

Why this is needed

A competent and sufficient workforce is an essential component of Wisconsin's public health infrastructure. While education in the health fields throughout Wisconsin is generally being done well, and the practice by health professionals is generally of high caliber, important qualities and skills in knowledge and practice are missing. For far too long, much of the education for the health professions has been driven by a focus on treatment at the expense of prevention and early intervention. It has focused on diseases within the individual rather than focusing on risk factor reduction and the determinants of health in the broader community environment. There exist only minimal formal communication opportunities between our institutions of higher education and the public health community to address the capacity of the workforce to solve community health problems. Limited formal communication between these sectors limits opportunities to shape workforce preparation and continuing education.

This plan outlines new ways of how the public health workforce should conceptualize the public health system—a coordinated system involving government, public, private, nonprofit, and voluntary organizations working as partners in service to the residents of Wisconsin. To achieve our shared vision, we need public health system leaders who can effectively bring together diverse people to provide sustained contributions to solving complex current and emerging threats to health. If we are to address elimination of health disparities, action must be taken to engage and sustain our communities of color and special population groups in the public health system. Competent leaders, policy makers, planners, epidemiologists, philanthropists, evaluators, bacteriologists, virologists, health educators, public health nurses, physicians, dentists, nutritionists, environmental health specialists, and others are necessary for a strong public health infrastructure.

Wisconsin needs a public health system workforce that possesses specific competencies necessary for the broad practice of public health at three levels of skill—awareness, knowledge, and proficiency. Work has commenced at the national level to define the core competencies necessary to carry out the essential public health service (Public Health Foundation, 2001). Eight core competencies (skill sets) have been identified for the nations public health workforce that include:

1. Analytic and assessment skills
2. Policy development and program planning skills
3. Communication skills
4. Cultural competency skills
5. Community dimensions of practice skills
6. Basic public health sciences skills
7. Financial planning and management skills, and
8. Leadership and systems-thinking skills

Competencies help the workforce know how to use emerging technologies and communicate to the public effectively. They help to develop problem solvers within the workforce who possess transferable skills across the system. They help the workforce turn data into useable information for decision making

by communities. They foster cultural and linguistic competencies within the workforce to understand and act upon the needs and perspectives of people who have diverse ethnic, racial, and cultural backgrounds throughout Wisconsin. They foster workforce capacity to address the health needs of both emerging and high-risk population groups in the community. Competencies enable the workforce to move beyond their professional training and unify the public health system partners in service to the people of their communities.

Recommendations

The State must establish and maintain a system to monitor the statewide public health workforce and identify gaps and shortage areas. It must recommend policies and actions that improve workforce supply, distribution, utilization and retention. The following actions are needed:

Improve the educational system for public health workers:

- Institutions of higher education and technical colleges must develop curricula that include a focus on the public health system and statewide health priorities and that address the core public health competencies appropriate for the health professional's level of function.
- Institutions of higher education, technical colleges, governmental public health agencies, and public and private organizations must partner to provide continuing education opportunities/ongoing skill development education and training for public health professionals, and community workers. This must include content in the contemporary practice of public health, and data-based and system-based practice interventions at the individual, family, and community levels.

Assure that the public workforce is as diverse as the communities they serve and make certain that public health training and educational programs reflect the diversity of Wisconsin's population.

- Include an interdisciplinary focus (didactic and clinical, shared listing of distance education and interdisciplinary resources).
- Public health workforce training (preparation and continuing education) must be responsive to the increasing diversity of the state's population (student and faculty recruitment, didactic content, and clinical experiences).
- Work to increase the diversity of the public health workforce (e.g., employing public health professionals and community workers who reflect racial, ethnic, and cultural characteristics of the community to be served).
- Focus on providing culturally competent public health programs and community-based health care services and service delivery.
- Provide financial incentives for members of racial and ethnic groups to obtain education/training in public health related fields, with additional incentives to return to their communities and utilize their acquired skills and knowledge.
- Establish and sustain a leadership development program and assure that public health leaders are as diverse as the residents they serve.

The State and professional groups should work together to:

- Establish and maintain minimum standards for credentials for all disciplines in the public health workforce.
- Provide educational opportunities to help individuals and organizations achieve and maintain their credentials including—where appropriate—the use of new technologies that facilitate distance learning.

System Priority 5: Equitable, Adequate, and Stable Financing

Summary

The transformation of Wisconsin's public health system cannot happen without equitable, adequate, and stable financing. This transformation process provides an opportunity to improve the health of our residents and communities, through a more cost-effective use of our resources. The public health system is uniquely equipped and positioned to promote community health through primary prevention measures. Investing in the essential public health services allows us to leverage resources to address risk factors in order to prevent diseases, injuries, and health conditions. An investment in primary prevention is a far wiser use of our scarce funds than reacting to the manifestation of health care failures.

To accomplish this transformation we need to first assess our current programs to ensure that funds are spent effectively and efficiently. Best practices need to be established to replicate successful programs, while also adapting them to fit local needs. We also need to review current funding sources and the distribution of funds to determine if funding levels are adequate and distributions are equitable. Finally, we need to explore new funding mechanisms possibly by identifying savings to other partners resulting from the provision of primary prevention services and also by reviewing and possibly adjusting funding levels, sources and distributions.

Why this is needed

Achieving our vision and goals for a transformed public health system in Wisconsin by 2010 requires adequate funding. As part of this effort, a deliberate and studied analysis of the existing financial system, restructuring of existing resources, and the identification of possible new resources must be completed. This analysis needs to involve all health programs, including local government health departments and all governmental and community partners. A comprehensive examination of the existing financing structure will create a clearer picture of the current public health system, including its strengths and weaknesses, and form a solid basis from which to develop a concise plan for the future, whether that means shifting, reallocating, or increasing existing resources.

This analysis needs to identify new partners and funding sources for public health systems and develop new linkages to the health care delivery and insurance systems. We need to look beyond traditional funding sources to consider new financial partnerships with groups that benefit from improving the health of the public. These new relationships could include closer financial ties to commercial groups such as:

- Working with industry to combat environmental health hazards.
- Working with liquor and tobacco producers, distributors and retailers to combat alcohol and other drug abuse (AODA) problems.
- Improving collaboration with food wholesalers, retailers, and restaurateurs to control food borne hazards.

These new relationships may include new or increased user fees; possibly set aside in a segregated fund dedicated to achieving public health goals.

The assessment and recommendations for an equitable, adequate, and stable financing system must consider the following issues:

- Adjust for differences in local tax bases across the state and for differences in local conditions and risk factors to ensure equality of fiscal capacity across the state.
- Reward programs that meet well-defined performance measures.
- Encourage and maximize the leveraging of resources from all sectors to build and expand public health services.
- Support the formation of broad-based, local community health improvements to address the root causes or key determinants of health in the community.

Recommendations

- Assess the fiscal impact to local health departments of providing the core public health functions and assuring the provision of the 12 essential public health services to that community.
- Make recommendations to the state and local elected officials and other policy makers regarding funding levels and structures needed to support governmental public health departments in the context of their new roles in the transformed public health system.
- Estimate savings to the health care delivery and insurance systems that result from a reduction or elimination of risk factors in the environment and the population.
- Improve collaboration and funding of public health needs by developing closer financial ties to public health system partners including the Wisconsin Tobacco Control Board, the •Medical Assistance Program and health care providers and insurers.
- Review existing expenditures and public health activities by local government health departments across the state to quantify inequities in resources, inadequacy of effort, opportunities to reallocate resources and to establish performance measures and best practices.
- Link funding of public health departments to performance-based contracts.
- Fund local initiatives that demonstrate effective collaboration between public health system partners to expend effort and resources on addressing locally determined community health improvement priorities.
- Invest in management information decision-support technology and health information technology to enable local health departments and their communities to access accurate and timely information on health status indicators. In addition, integrate these systems with existing health care data systems.
- Invest in the development of a highly skilled and trained public health workforce including the possible use of expanded loan forgiveness for health providers who practice in underserved communities.

These recommendations will require a significant change in the traditional public health system model—a new mind set—if we are to advance the public's health in Wisconsin in the 21st century. It will require a fundamental redesign and a restructuring of the current funding system for local government health departments and other accountable entities that impact on community health status. Traditional government public health providers must open up to partnering with other non-traditional parties that truly contribute to the health status of the community. Financing is the magnet that will galvanize coalitions to form and establish partnerships to address local community health improvement priorities. Without the means, there will not be the ways.

REFERENCES

Foege, W.H. (1997). Challenges to Public Health Leadership. In R. Detels, W. W. Holland, J. McEwen, & G. S. Omen, Vol. 1. The Scope of Public Health, *Oxford Text of Public Health*, (pp. 402-417). Oxford: Oxford University Press.

Public Health Foundation. (2001). Council on Linkages Between Academia and Public Health Practice. *Core Competencies for Public Health Professionals*. Washington, DC.

U.S. Department of Health and Human Services. (2000). *Healthy People 2010.* 2nd ed. 2 vols. Washington, D.C.: U.S. Government Printing Office.

SECTION FOUR:

Health Priorities

Introduction

The Year 2000 health improvement plan for Wisconsin identified 327 goals and objectives (Wisconsin Department of Health and Human Services, 1990). Having a large number of very specific objectives was a common, but cumbersome approach, to public health. The partners found it difficult to know where to start, how to allocate resources, and what issues have the greatest leverage for improving public health.

In developing the health priorities for 2010, the Transformation Team was determined that its product would be a clear, workable list of the most important health priorities for the state. It was important that this list be sufficiently prioritized so that the implementation plans could be more focused. This would result in a compelling list of health priorities that would have the greatest influence to meet the overarching goals of protecting and promoting the health for all, eliminating health disparities, and transforming Wisconsin's public health system.

The Transformation Team decided that rather than focus on specific diseases or specific population groups, the health priorities would be based on risk factors. Risk factors are attributes, exposures or determinants of illness or health conditions (Last & Tyler, 1998). Risk factors may be personal, environmental, or societal. A better return for Wisconsin's public health resources and investments can be expected by addressing risk factors, rather than individual conditions or diseases.

A Data Expert Advisory Workgroup (DEAG) was appointed to lead this process. The specific charge to the workgroup was to develop a methodology and implement a process to identify Wisconsin's top public health priorities using public health science and epidemiological approaches.

The Workgroup used data and information to:

- Determine diseases and conditions that are common in Wisconsin (have a high magnitude) and that have a serious effect on the individual and/or their family and community.
- Identify risk factors that influence both health and disease.

For a more detailed description of the process used to determine the health priorities, see Section 5, "Methodology" that describes the processes used to identify the health priorities for the state.

The 11 Health Priorities

The 11 health priorities listed below are in alphabetical order and are not prioritized. They influence both health and illness and each have behavioral, environmental, and societal dimensions. The health and system priorities are interwoven, complementary, and overlapping.

- Access to Primary and Preventive Health Services
- Adequate and Appropriate Nutrition
- Alcohol and Other Substance Use and Addiction
- Environmental and Occupational Health Hazards
- Existing, Emerging, and Re-Emerging Communicable Diseases

- High Risk Sexual Behavior
- Intentional and Unintentional Injuries and Violence
- Mental Health and Mental Disorders
- Overweight, Obesity, and Lack of Physical Activity
- Social and Economic Factors that Influence Health
- Tobacco Use and Exposure

These health priorities significantly affect a number of key conditions. They have the greatest potential leverage for improving the health of the people of Wisconsin. The key term here is leverage: by working on one risk factor, many diseases or other health conditions can often be improved or eliminated. For example, tobacco has a major influence on the development of lung cancer, asthma, and cardiovascular disease. Similarly, risky sexual behavior influences diseases such as gonorrhea, hepatitis, HIV/AIDS, and adolescent pregnancy. By addressing tobacco use or risky sexual behavior, we can influence a great number of health conditions and diseases because there is a common underlying cause.

These 11 health priorities are important for all Wisconsin residents. Addressing them requires intensive collaborative action by many partners in Wisconsin's public health system. It requires primary prevention approaches. The outcomes are to reduce the burden of illness and injury, enhance the quality of life, and increase longevity—while also saving lives and resources.

REFERENCES

Last, J.M. & Tyler, C.W. (1998). In R.B. Wallace, B.N. Doebbeling & J.M. Last (Eds.), *Public Health and Preventive Medicine,* (p. 6). Stamford, CT: Appleton Lange.

Wisconsin Department of Health and Social Services, Division of Health. (1990). *Healthier People in Wisconsin: A Public Health Agenda for the Year 2000*. Madison, WI: Author.

Health Priority: Access to Primary and Preventive Health Services

Definition

Access means that primary and preventive health care services are available and organized in a way that makes sense to individuals and families. Access means that people have the resources, both financial and non-financial, needed to obtain and use available services. Accessible health care includes an infrastructure supporting a range of health services with the capacity to reach diverse people and adapt to the specific access issues that differ in communities.

Impact

When individuals and groups lack access to primary and preventive health care, critical opportunities are lost for the promotion of healthy lifestyle behaviors and for early diagnosis and treatment of health problems. Lack of access to care results in short and longer term adverse health consequences, including: higher mortality rates and years of productive life lost, greater rates of more advanced and difficult to treat disease (e.g., heart, cancer, and stroke), and increased rates of preventable disease (e.g., dental and osteoporosis). Inadequate access to health care services contributes to an overall poorer health status among the medically underserved (Lewin & Altman, 2000).

Economic burden

The economic burdens due to inadequate access to primary and preventive health care services include direct medical costs associated with the onset of more serious conditions. Significant indirect costs may also be incurred (for example, the wages and income lost during a period of disability) in relationship to a long-term chronic condition, or as the result of a premature death. For example:

- Nationally, breast cancer treatment in 1990 generated $6.5 billion in medical care costs, more than any other cancer. In Wisconsin, breast cancer accounts for over 30 percent of all female cancer cases. In 1997, more than 3,600 Wisconsin women were diagnosed with invasive breast cancer and 785 women died from breast cancer. Estimates suggest that effective screening could reduce breast cancer mortality between 20 and 30 percent (U.S. Department of Health and Human Services, 1999; Wisconsin Department of Health and Family Services, 1999).
- Nationally, the additional costs incurred for a low birth weight infant during the first year of life amounted to $15,000, on average. In 1998, more than 4,000 infants born in Wisconsin weighed less than 2,500 grams, which defined them as low birth weight. The number of low birth weight infants was disproportionately high among African American mothers. If all U.S. women received adequate prenatal care, estimated savings are over $14,000 per low birth weight prevented (U.S. Department of Health and Human Services, 1999; Wisconsin Department of Health and Family Services, 2000).
- Children suffering from tooth decay experience "problems in eating, speaking and attending to learning." In the United States, approximately 51 million school hours are lost each year to dental related illness." Untreated tooth decay and periodontal disease in adults has been linked with many adverse health conditions including diabetes, cardiovascular disease, stroke and adverse pregnancy outcomes (U.S. Department of Health and Human Services, 2000).

Important Disparities

Special access issues exist for particular groups—those living in isolated rural communities, migrant and seasonal workers, immigrants, low-income members of racial, ethnic, or cultural minority groups, people with special health care needs, the uninsured, the underinsured, and homeless people (Lewin & Altman, 2000). There are large disparities in oral health status between low-income adults and children and their higher-income counterparts, in terms of

untreated tooth decay, restricted activity days, and tooth loss. Similar problems are faced by other vulnerable populations, including the homeless, disabled, HIV/AIDS infected, minority, and rural (U.S. Department of Health and Human Services, 2000).

Although the United States has made major gains in access to health care, many of the resulting advances in the health status of the population as a whole have not been as fully extended to lower-income African American, Hispanic/Latino, or American Indian populations. Major contributing factors include the uneven distribution of health services within communities, shortages of culturally competent service providers, and lack of insurance (U.S. Department of Health and Human Services, 2000).

Access issues related to language and cultural differences between providers and patients exist for many members of minority and rural groups in Wisconsin. Communities with seasonal increases in migrant and immigrant workers have special issues related to provision of health care services. Migrant workers face special problems related to establishing and maintaining care continuity.

People, including an increasingly large proportion of the elderly, with long-term chronic illnesses, disabilities, and mental health conditions need access to a range of health and personal care services. The need for services (such as for as assisted-living housing and adult day care centers, for low-income elderly and disabled persons) is particularly acute in rural areas, where disproportionately large numbers of the elderly live (Alder, 1999).

Both rural and inner city areas of Wisconsin encounter access issues resulting from the uneven distribution of the health care workforce and a fragile healthcare infrastructure. For example, considerable variation exists in levels and quality of emergency medical services in rural Wisconsin (National Conference of State Legislatures, 2000). Parts of some very rural counties in Wisconsin have severe shortages of primary care, dental and/or mental health providers, with ratios of primary care physicians to population as high as 1:20,000. To put this in perspective, health maintenance organizations in urban areas try to maintain a network of physicians in the range of 1 primary care physician per 1300-1700 enrolled people (U.S. Department of Health and Human Services, 1999). Shortage can also mean a shortage of providers who will provide health care to low-income and Medicaid population.

KEY ACCESS ISSUES		
Issue	**Description**	**Example(s)**
Financial barriers	Having health insurance is a strong predictor of access to health care. Studies indicate that uninsured children are less likely to have preventive and primary care than insured children; to be less likely to have a relationship with a primary care physician; and when ill, the uninsured are less likely to receive care for their health problems (Meyer & Silow-Carroll, 2000). Others lack sufficient health insurance to cover needed services or do not have the financial capacity to cover services outside their health plan or insurance program.	Wisconsin ranks high compared to other states in the proportion of people who have health insurance. However, more than 600,000 people in the state were without health insurance for all or part of 1999. Those less likely to be insured for the entire year were adults aged 18 to 44, the poor and near poor, those in minority groups, those with less than a high school diploma, and children living with no employed adult (Wisconsin Department of Health and Family Services, 2000).
Cultural, spiritual and language barriers	Migrant workers and their families may face special problems accessing health care services, including language barriers and establishing and maintaining care continuity. Members of communities may prefer not to use human services, such as food stamps, nursing homes, and health insurance. The beliefs and methods of health delivery that predominate in western medicine are not always understood and may conflict with value systems of some groups, such as the Hmong, some Latino groups, and American Indians.	Wisconsin's population is made up of many ethnic and cultural groups, including the Amish, Hmong, migrant and seasonal farm workers, immigrants from other countries, and others. The Hmong may practice traditional healing methods, with greatest trust placed in the advice from the community's shaman or herbalist.
Race and ethnicity barriers	Gains made in access to health care resulting in advances in the health status of Americans as a whole have not been fully extended to lower-income African Americans, Hispanic/Latinos or American Indians. Major contributing factors include the uneven distribution of health services within communities, shortages of culturally competent service providers, and lack of insurance (U.S. Department of Health and Human Services, 2000).	In 1998, less than half of Laotian/Hmong women in Wisconsin who gave birth that year had a first trimester prenatal visit. African American, American Indian and Hispanic/Latino women with a first trimester visit ranged from 67 percent to 72 percent compared to 88 percent of white women (Wisconsin Department of Health and Family Services, 2000).
Lack of providers and/or health care facilities	In Wisconsin a significant number of communities are federally designated as health professional shortage areas (HPSAs). These include parts of larger cities, large numbers of rural areas throughout the state, most of the tribal populations, and low-income populations. Shortages exist for primary care, dental, and mental health providers. Nationally, the number of dentists per 100,000 population has been declining over the past ten years. Shortages of dentists are reported to be the greatest in the south and midwest (U.S. Department of Health and Human Services, 2001; 1999).	More than 920,000 people living in urban as well as rural areas in Wisconsin lack geographic access to primary care physicians and more than 1.4 million live in areas with shortages of mental health providers. According to Wisconsin's 1998 Family Health Survey, people who reported not seeing a dentist during the past year were more likely to be those without insurance, the poor, and the near poor. In both 1998 and 1999, only 23 percent of Wisconsin's Medicaid participants eligible for fee-for-service dental care received any dental services (U.S. Department of Health and Human Services, 2001; Wisconsin Department of Health and Family Services, 1999; 2000).

REFERENCES

Alder, J. (1999). Coming Home: Affordable Assisted Living for the Rural Elderly. In Isaacks, S. and Knickman, J. (Eds.), *To Improve Health and Health Care 2000*. "Robert Wood Johnson Foundation Anthology." San Francisco: Jossey-Bass Publishers.

Lewin, M. E. & Altman, S. (Eds.). (2000) *America's Health Care Safety Net: Intact but Endangered* (Institute of Medicine). [On Line]. Washington D.C: National Academy Press. Available: http://www.nap.edu/catalog/9612.html

Meyer, J. A. & Silow-Carroll, S. (2000). *Increasing Access: Building Working Solutions.* (W. K. Kellogg Foundation: Community Voices Initiative). [On Line]. Washington D.C: Economic and Social Research Institute. Available: http://www.communityvoices.org

National Conference of State Legislatures. (2000). *Rural Health Brief: Emergency Medical Services in Rural Areas – How Can States Ensure Their Effectiveness?* [On-line]. Washington, D.C: Author. Available: http://www.ncsl.org/programs/health.Forum/ruralems.htm

U.S. Department of Health and Human Services, Bureau of Primary Health Care. (2001). *BHCDANET Health Professional Shortage Areas: Basic Listing*. Bethesda, MD.

U.S. Department of Health and Human Services. (2000*). Eliminating Racial and Ethnic Disparities in Health.* Washington, D.C.: U.S. Department of Health and Human Services. Available: http://raceandhealth.hhs.gov/sidebars/sbinitOver.htm

U.S. Department of Health and Human Services. (May, 2000*). Oral Health in America: A Report of the Surgeon General – Executive Summary.* [On Line]. Rockville, Maryland: U.S. Public Health Service. Available: http://www.nidcr.nih.gov/sgr/sgr.htm

U.S. Department of Health and Human Services, Bureau of Health Professions. (Fall,1999). *Health Workforce Newslink.* [On Line}.Rockville, MD: Available:

http://www.bhpr.hrsa.gov/healthworkforce/newslink.htm

U.S. Department of Health and Human Services. (October, 1999). *An Ounce of Prevention: What Are the Returns?* (2nd ed., revised). [On Line]. Atlanta, GA: Centers for Disease Control and Prevention. Available: http://www.cdc.gov/mmwr/PDF/other/ozprev.pdf

U.S. Department of Health and Human Services. (March, 1999). *COGME Physician Workforce Policies: Recent Developments and Remaining Challenges in Meetings National Goals.* [On Line]. Rockville, MD: Council on Graduate Medical Education. Available: http://www.cogme.gov/rptmain.htm

U.S. Government Accounting Office. (2000). *Oral Health: Dental Disease Is a Chronic Problem Among Low-Income Populations.* Washington, D.C: Available: http://www.gao.gov/index.html

Wisconsin Department of Health and Family Services, Bureau of Health Information. (2000). *Wisconsin Health Insurance Coverage – 1999*. [On Line]. Madison, WI: Author. Available: http://www.*Department of Health and Family Services*.state.wi.us/stats/healthinsurance.htm

Wisconsin Department of Health and Family Services, Division of Health Care Financing. (August, 2000). *Wisconsin Medicaid Dental Facts FY 2000.* [On Line]. Madison, WI: Author. Available: http://www.legis.state.wi.us/lc/studies/DCA/facts_*Department of Health and Family Services*.pdf

Wisconsin Department of Health and Family Services, Bureau of Health Information. (2000). *Wisconsin Births and Infant Deaths, 1998.* Madison, WI: Author. Available: http://www.*Department of Health and Family Services*.state.wi.us/births/prev_yrs_reports.htm

Wisconsin Department of Health and Family Services, Bureau of Health Information. (November, 1999). *Wisconsin Family Health Survey – 1998.* [On Line]. Madison, WI: Author. Available: http://www.*Department of Health and Family Services*.state.wi.us/stats/familyhealthsurvey.htm

Wisconsin Department of Health and Family Services, Bureau of Health Information. (August, 1999). *Breast Cancer Summary.* [On Line]. Madison, WI: Author. Available: http://www.*Department of Health and Family Services*.state.wi.us/wcrs/reports/bcancer97.htm

Health Priority: Adequate and Appropriate Nutrition

Definition

Adequate and appropriate nutrition has two dimensions:

1. Adequate nutrition refers to food security. This means Wisconsin residents have access at all times to nutritious and safe foods. They can obtain these foods in socially acceptable ways—that is, through regular sources and not through emergency coping strategies such as food pantries.
2. Appropriate nutrition refers to foods that promote overall good health. Nutritious foods contribute to the healthy birth outcome for pregnant women and the growth and development of growing infants and children. Nutritious foods, in appropriate amounts, help prevent many chronic diseases related to diet and weight.

Impact

Adequate and appropriate nutrition affects individuals starting with conception and throughout life.

- An inadequate diet and weight gain during pregnancy are associated with babies being born too small or too early. An inadequate intake of folic acid before pregnancy can lead to spina bifida, a serious birth defect in infants. Good nutrition, including breastfeeding, during periods of rapid growth promotes healthy brain development and better prepares children for school (Tufts University, 1995).
- Childhood hunger, or the inadequate intake of nutrients during the early years, has an impact on the behavior of children, their school performance, and their overall cognitive development. Deficiencies in iron have an immediate effect on the ability to concentrate. Iron deficiency anemia puts children at higher risk for blood lead poisoning (Tufts University, 1995).
- The growing concern about unhealthy diets, in large part, is related to the burden of chronic disease. Unhealthy diets, such as those high in fat, low in fiber, and low in fruits and vegetables, are associated with an increased risk for the top three causes of death in the country: heart disease, cancer, and stroke. Unhealthy diets can also lead to overweight and obesity, hypertension, diabetes, and osteoporosis.

Economic Burden

- Pregnant women who are undernourished and don't gain enough weight during pregnancy are more likely to have low birth weight babies. In the United States, in 1998, the cost of a normal healthy delivery averaged $1,900 whereas hospital costs for low birth weight babies averaged $6,200 (U.S. Department of Health and Human Services, 2000). Hospital costs for very low birth weight babies can exceed $1 million.
- The estimated lifetime costs for children born with spina bifida in Wisconsin for 1998 alone are estimated to be close to $7 million. A multivitamin containing folic acid, if taken daily, could reduce the incidence of neural tube defects by up to 70 percent (March of Dimes, 1992).
- Breastfeeding is economical to families and society. It has been estimated that $2 to $4 billion in health care expenditures could be saved annually in the U.S. if all women breastfeed their infants for as little as twelve weeks (Labbock, 1994).
- The true cost of hunger in Wisconsin is difficult to estimate in dollars. Research indicates that undernutrition during any period of childhood can have damaging effects on the cognitive development of children and their later productivity as adults (Tufts University, 1995).
- Among hospitalized adults in a recent study, excess costs for patients with malnutrition were $5,575 per surgery patient and $2,477 per medical patient (Hunger Progress Report, 1999).

- Food security means an adequate supply of nutritious and safe foods. Estimated medical costs and losses in productivity resulting from seven major foodborne pathogens in1993 ranged from $5.6 billion to $9.4 billion (Partnership for Food Safety Education, 2000).
- According to the National Cancer Institute, an estimated $107 billion is the overall cost of cancer in the United States. This estimate includes health care costs, costs of lost productivity, and mortality costs (U.S. Department of Health and Human Services, 1999).
- The American Heart Association estimates that the cost of cardiovascular diseases in the United States in 1999 is $265.5 billion, including health care costs and lost productivity resulting from illness and death (U.S. Department of Health and Human Services, 1999). In Wisconsin, the estimated annual total cost of cardiovascular disease is $5.2 billion, over $1,000 for every man, woman, and child (American Heart Association, 1998).

Important Disparities

- Studies show that many nutrition related issues indicate a disparity among populations.
- For food insecurity and other measures of hunger and undernutrition, such as growth retardation and anemia, disparities are evident based on income, race and ethnicity. In the U.S. in 1999, groups that continued to have a higher prevalence of food insecurity included female-headed households with children (30 percent), households with children under six (16 percent), African American non-Hispanic/Latino households (21 percent), Hispanic/Latino households (21 percent), and households with incomes below 185 percent of the poverty level (26 percent) (Food Security Institute, 2000).
- Breastfeeding rates indicate disparity between the level of education and race. Mothers with higher levels of education breastfeed their infants more often and for longer periods of time. White women breastfeed their infants more often than black women (Ross Products Division, 1998).
- In 1996, rates of death in Wisconsin from total cardiovascular diseases and cancer were higher among African Americans than among white adults and higher in men than women (U.S. Department of Health and Human Services, 1999). Poor nutrition is a modifiable risk factor associated with these diseases.
- Anemia is one of the most prevalent nutritional disorders in the world, affecting nearly one quarter of all low-income children in the U.S. (Tufts University, 1995).

KEY NUTRITION ISSUES		
Issue	**Description**	**Example(s)**
Inappropriate food choices	Appropriate diet and nutrition plays an essential role in promoting and protecting the public's health throughout their life. Poor diets are associated with increased risk of several chronic diseases such as cardiovascular disease, cancer, diabetes, hypertension, overweight, and osteoporosis.	Cardiovascular disease is the leading cause of death among men and women of all racial and ethnic groups in Wisconsin. Each year, cardiovascular disease causes more deaths than cancer, AIDS, automobile crashes, domestic abuse and alcohol abuse combined.
	Even people who have enough food often make food choices that are harmful to their health. There is considerable evidence that Americans want to eat healthier diets, but are led astray by the amount of confusing, contradictory, and inaccurate nutrition information. Alternatively, many people know how to eat healthy but choose not to. Knowledge alone doesn't lead to behavior change. People need to perceive and value the benefits of following a healthy diet to choose to act on the knowledge.	The U.S. Department of Agriculture's Dietary Guidelines recommends limiting foods high in fat and sugar. Healthy People 2010 recommends that persons over two years of age consume no more than 30 percent of their calories from fat. Of Wisconsin's residents over the age 20, 46.4 percent consume a diet with more than 40 percent of calories from fat (U.S. Department of Agriculture, 1995).
	Our society doesn't support healthy eating. In fact, it encourages overeating and poor diets. Families seem to be busier, with schedules that don't allow eating home prepared meals together. Our society has readily available fast food restaurants, offers large portions in restaurants, provides vending machines in most schools, and markets low nutrient-dense foods at sporting events. Fruits and vegetables are not readily available and can be expensive. Many people lack the knowledge of how to obtain affordable fruits and vegetables and/or how to prepare them.	Fruits and vegetables reduce the risk of cancer, and they are naturally low in fat and calories. USDA recommends that people eat 5 or more fruits and vegetables a day. In Wisconsin, 74 percent of adults consume less than 5 servings a day (U.S. Department of Health and Human Services, 1999).
	A multivitamin containing folic acid, if taken daily before pregnancy, could reduce the incidence of neural tube defects by up to 70 percent (March of Dimes, 1992).	National data shows that in 1998, only 32 percent of non-pregnant women reported taking a folic acid supplement daily. There has been little change since 1995 when 28 percent reported taking a daily supplement. The national goal for 2010 is 80 percent (March of Dimes, 1995, 1997, 1998).
	Breastfeeding is widely acknowledged as the most complete form of nutrition for infants, with benefits for the infants' health, growth, immunity and development.	In 1998, 67.4 percent of Wisconsin mothers breastfed their babies in the hospital. The national goal for 2010 is 75 percent (Ross Products Division, 1998).
Inadequate supply of food and unsafe food	Despite an adequate supply of food in Wisconsin, some families lack access to enough food to fully meet their basic needs. This inadequate supply of safe and nutritious food, or food insecurity, can lead to hunger and malnutrition.	About 6.4 percent (386,000) of Wisconsin households are food insecure (Wisconsin Board on Hunger, 1998).
	Hungry children and adolescents cannot grow, learn and develop their potential of being productive adults. Food insecurity and hunger are believed to have a harmful impact on health, particularly for pregnant women, children, elderly persons, and other vulnerable groups.	238,652 Wisconsin youth were eligible for free or reduced price school meals in 1996. This was an increase of 3 percent over 1995 (Wisconsin Board on Hunger, 1998).
	Most meals and snacks are prepared in the home. For these meals, the consumer needs to protect against foodborne illness, including proper ways to prepare, thaw and store foods.	The incidence of food borne illness can be decreased if consumers follow these four key food safety practices (U.S. Department of Health and Human Services, 2000): • Clean: wash hands and surfaces often • Separate: don't cross contaminate • Cook: cook to proper temperatures • Chill: refrigerate promptly

REFERENCES

American Heart Association. (1998). *The Burden of Cardiovascular Disease in Wisconsin.*

Food Security Institute, Center on Hunger & Poverty. (September, 2000). *Food Security Institute Bulletin.*

Labbok M.H. (1994). Breastfeeding as a Woman's Issue: Conclusions and Consensus, complementary concerns, and next actions. *International Journal of Gynecology and Obstetrics* 47, Suppl: 541-554.

March of Dimes Birth Defects Foundation. (1992). *Economic Costs of Birth Defects U.S.*

March of Dimes Birth Defects Foundation. (1995, 1997, 1998). *Gallup Survey Results.*

Partnership for Food Safety Education. (2000). *FightBAC!™About Foodborne Illness – The Costs of Foodborne Illness*. Web site. http://www.fightbac.org/main.cfm

Ross Products Division-Abbott Laboratories. (1998). *Mothers Survey.*

The Hunger Progress Report. (1999). *Faces of Wisconsin Hunger*, (p. 13.) http://www.fighthungerwi.com/issue_report.htm

Tufts University, School of Nutrition. (1995). *Statement on the Link Between Nutrition and Cognitive Development in Children.*

U.S. Department of Agriculture. (1995). *Continuing Survey of Food Intakes by Individuals (CSFII)*. Third Report on Nutrition Monitoring in the U.S. 1989-1991. Washington, D.C.: Author.

U.S. Department of Health and Human Services. (January, 2000). *Healthy People 2010* (Conference Edition, in Two Volumes). Washington, D.C.: Author.

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (December 1999). *Chronic Diseases and Their Risk Factors: The Nation's Leading Causes of Death.* Washington, D.C.: Author.

Wisconsin Board on Hunger. (1998). *Hunger Prevention in Wisconsin*.

Health Priority: Alcohol and Other Substance Use and Addiction

Definition

What is "inappropriate use?" According to the American Psychiatric Association (1994), inappropriate use is the use of a substance in a manner that exceeds the safe or prescribed amount and frequency or poses a health or safety risk to the user or others. Examples of inappropriate use include use during pregnancy, intoxicated driving, drinking to incapacitation, underage drinking, or heavy or immoderate drinking. It also includes the infrequent or experimental use of illegal street drugs.

What is "abuse?" The American Psychiatric Association (1994) has identified several disorders associated with the abuse of alcohol and other substances, namely:

- Abuse: Use resulting in a pattern of negative consequences such as school or work absences, neglect of children, legal problems, or heated arguments with spouse.
- Dependence: Use leading to a pattern of clinically significant impairment in at least 3 areas such as tolerance, withdrawal symptoms, inability to cut down or control use, or use despite physical or psychological problems. In addition to being a social disorder, dependency is also a physical disorder resulting in the progressive impairment of the body that affects performance of vital bodily functions such as the brain, liver, peripheral nervous system, pancreas, stomach, and heart. Recent research on addiction as a genetic and brain disease suggests that many addicts are strongly predisposed to having little control over their use.
- Dementia: Memory, language, emotional, or motor impairment and other cognitive deficits resulting from chronic substance abuse.
- What substances are included? In general, included substances are those that are considered to be habit-forming and mind-altering such as:
  - Alcohol (e.g., beer, wine, hard liquor, coolers)
  - Pain killers (e.g., opiates, heroin, dilaudid, codeine, morphine, oxycodone)
  - Tranquilizers (e.g., muscle relaxants, diazepam, valium, flurazepam, meprobamate, equanil)
  - Sedatives (e.g., sleeping pills, barbiturates, methaqualone, chloral hydrate)
  - Stimulants (e.g., cocaine, crack, speed, methamphetamine, ice, amphetamines, benzedrine, phendimetrazine)
  - Hallucinogens (e.g., marijuana, LSD, PCP, psilocybin)
  - Inhalants (e.g., glue, aerosols, solvents, nitrous oxide)

Impact/Economic Burden

Inappropriate use and abuse of alcohol and other drugs is a significant health, social, public safety and economic problem. It is associated with a host of societal problems including suicide, homicide, accidental injury and death, assault, robbery, domestic violence, child abuse, delinquency, HIV, teen pregnancy, diabetes, hypertension, stroke, certain cancers, family dysfunction and break-up, lowered academic performance, and lowered productivity (U.S. Department of Health and Human Services, 1978, 1987). Each year in Wisconsin there are 1,300 deaths, 6,800 traffic injuries, 8,500 traffic crashes (Wisconsin Deptartment of Transportation, 1994-1998), 2,400 substantiated cases of child abuse (Wisconsin Department of Health and Family Services, 1994-1998), 90,000 arrests (Office of Justice Assistance, 1994-1998), and economic costs totaling $4.6 billion dollars (Collins et al., 1998), all attributed to substance abuse. Alcohol and other drug abuse is the fourth leading cause of death in Wisconsin behind heart disease, cancer and stroke, and it is the fourth leading cause for hospitalization behind mental illness, heart disease, and cancer (Wisconsin Department of Health and Social Services, 1992). There are an estimated

353,100 adults and 40,300 adolescents in need of treatment for substance use disorders (University of Wisconsin, 1997). Yet, surveys indicate that only 21 percent of those in need of treatment receive it due to several factors that include availability and accessibility to services, the individuals' lack of awareness, and/or lack of acceptance that a disorder exists (University of Wisconsin, 1999).

Trend data on substance abuse problems and health risks can be approximated using indicators available from state and national surveys. For example, the Centers for Disease Control's Behavioral Risk Factor Surveillance Survey and the Youth Risk Behavior Survey each have such indicators that are useful to watch. The CDC has identified three adult alcohol abuse risk indicators, namely:

1. Percent of adults consuming 60 or more drinks/month (considered heavy drinking; persons who consume this quantity are in the top 5 percent of drinkers)
2. Percentage of adults consuming 5 or more drinks on one occasion (called binge or episodic drinking, for a typical male, this would result in a blood alcohol content of .04 to .10; for a female .10 or higher)
3. Percentage of adults reporting driving after drinking

Wisconsin ranks 3rd, 1st, and 1st in the nation, respectively, on these three risk indicators (Centers for Disease Control, 1990). Wisconsin is compared to national averages in the next three tables.

TABLE 1 Percent of adults reporting consuming 60 or more drinks in the past month

YEAR	WI	U.S.
1994	5.0%	N.A.
1995	4.5%	2.8%
1996	6.5%	N.A.
1997	5.0%	3.0%
1998	4.7%	N.A.

Source: Department of Health and Family Services, 1994–1998.

TABLE 2 Percent of adults reporting consuming 5 or more drinks on an occasion one or more times in the past month

YEAR	WI	U.S.
1994	23.6%	14.7%
1995	23.1%	13.9%
1996	26.0%	14.9%
1997	23.3%	14.5%
1998	22.4%	N.A.

Source: Department of Health and Family Services, 1994–1998.

TABLE 3 Percent of adults reporting driving after having too much to drink

YEAR	WI	U.S.
1994	5.6%	3.2%
1995	4.6%	2.3%
1996	5.6%	2.5%
1997	5.3%	1.9%
1998	4.8%	N.A.

Source: Department of Health and Family Services, 1994–1998.

Over 1,300 deaths each year are attributable to inappropriate use and abuse of alcohol or other drugs and this number is rising. These include snowmobile, boating, recreational vehicle, traffic, disease, and overdose deaths.

TABLE 4 Alcohol and drug-related deaths from all causes, Wisconsin

YEAR	DEATHS
1994	1,183
1995	1,211
1996	1,194
1997	1,218
1998	1,323

Source: Department of Health and Family Services, 1994–1998.

Alcohol and other drug use problems among adolescents are also significant in Wisconsin. State and national CDC surveys (taken every 2 years) track the following notable indicators:

1. Percentage of adolescents reporting drinking alcohol in the past month
2. Percentage of adolescents reporting using marijuana in the past month
3. Percentage of adolescents reporting smoking cigarettes in the past month
4. Age of first use of alcohol
5. Age of first use of marijuana

TABLE 5 Past month use of cigarettes and marijuana among adolescents, Wisconsin

YEAR	CIGARETTES	MARIJUANA
1993	32%	11.2%
1995	34%	16.6%
1997	36%	20.9%
1999	38%	21%

Source: Department of Public Instruction, 1993–1999.

Illicit drug use and highway safety are other concerns associated with the inappropriate use and abuse of alcohol and other drugs and shown in Table 6.

TABLE 6 Trends in operating a motor vehicle while intoxicated (OWI) and illegal drug possession and sale (drug) arrests, Wisconsin

YEAR	OWI ARRESTS	DRUG ARRESTS
1994	35,026	16,826
1995	35,416	20,044
1996	37,662	21,412
1997	37,437	21,527
1997	37,708	23,561

Source: Office of Justice Assistance, 1994–1998.

Encounter data are available for publicly supported treatment services demonstrating the magnitude of the need for treatment for substance use disorders.

TABLE 7 Publicly supported treatment admissions for substance use disorders

YEAR	ADMISSIONS
1994	22,923
1995	21,559
1996	21,973
1997	22,310
1998	23,069

Source: Department of Health and Family Services, 1994–1998.

Important Disparities

While substance abuse affects all segments of the population, there are racial, ethnic, age, gender and geographic issues that are significant. A survey conducted by the University of Wisconsin Survey Research Laboratory (1997) found that American Indians and persons of Hispanic/Latino origin have higher rates of alcohol abuse than other population groups. Similarly, American Indians and African Americans have higher rates of drug abuse than other population groups. Urban and suburban areas tend to have higher rates of drug abuse than rural areas. Regarding gender, the survey found the ratio of males to females with substance use disorders is 3 to 1. While alcohol and other drug abuse is generally a "young" problem (age 21 to 49), all age groups are affected. Youth and older adults need approaches that are specifically designed with their needs in mind.

KEY ALCOHOL/DRUG ISSUES		
Issue	**Description**	**Example(s)**
Drinking and Driving	Intoxicated driving has been on the Congressional and Wisconsin Legislature's agenda for many years. Stiffer fines and penalties have been somewhat effective in reducing traffic crashes, but as one can see from the statistics presented earlier, these measures have had less of an impact on intoxicated driving in general. New and innovative approaches are needed.	The effective use of the media, mobilizing individual communities against drinking and driving, and using criminal justice monitoring during the treatment of offenders, have been found to be effective in reducing drinking and driving and repeat drinking and driving (Barlow, Barlow, Brandl, Rosnow, & Quirke, 1998).
Primary Prevention	Prevention programs should focus on ways to enhance citizens' personal assets or resiliency.	Children who are nurtured in a loving and supportive family, and who develop a sense of integrity, honesty, responsibility, and self esteem, will be better equipped to resist using alcohol or drugs inappropriately. Providing good role models through mentoring programs is also effective.
Early Intervention	Early detection is essential, since prolonged abuse of alcohol and other drugs can lead to chronic and debilitating disease.	Health care settings are an important venue for screening and referral yet surveys show that many physicians do not routinely screen for alcohol or drug problems. Couple this with patients' general unwillingness to acknowledge a problem, intervention can be very challenging.
Treatment and Rehabilitation	Access to treatment and rehabilitation is hindered by a number of barriers.	Some of these barriers include stigma, lack of insurance parity with other medical problems, treatments that don't seem to keeping pace with research, family involvement, and cross-system coordination. It is therefore important that any public health solution to substance abuse include initiatives that address these barriers.

REFERENCES

American Psychiatric Association. (1994). *Diagnostic Criteria from DSM IV.*

Washington, D. C.: Author.

Barlow, D.E., Barlow, M.H., Brandl, S.G., Rosnow, M. & Quirke, M. (1998). In Wisconsin Department of Health and Family Services, Division of Supportive Living, Bureau of Substance Abuse Services. *Substance Abuse and Need for Treatment Among Arrestees in Wisconsin.* Madison, WI.:Author.

Centers for Disease Control. (1990). CDC Surveillance Summaries: Behavioral Risk Factor Surveillance, 1988. *Morbidity and Mortality Weekly Report*, 39, 1-22.

Collins, D., Easton, B., Harwood, H., Lapsley, H., Maynard, A., Single, E. (1998). *The Economic Costs of Alcohol and Drug Abuse in the United States, 1992*. (DHHS Publication NIH 98-4327). Washington, D.C.: National Institute on Drug Abuse and National Institute on Alcohol Abuse and Alcoholism.

Office of Justice Assistance. (1994-1998). *Crime and Arrests in Wisconsin.* Madison, WI: Author.

University of Wisconsin, Center for Health Policy and Program Evaluation. (1999). *Combined Analysis of the State Treatment Needs Assessment Program Studies.* Madison: University of Wisconsin.

U.S. Department of Health and Human Services. (1978*). Third Special Report to the U.S. Congress on Alcohol and Health.* Washington, D.C.: Government Printing Office.

U.S. Department of Health and Human Services. (1987*). Sixth Special Report to the U.S. Congress on Alcohol and Health.* Washington, D.C.: Government Printing Office.

University of Wisconsin, Survey Research Laboratory. (1997). *Checking the Alcohol and Other Drug Health of Wisconsin Residents: The Final Report of a Statewide Household Survey*. Madison, WI..

Wisconsin Department of Health and Social Services, Office of Alcohol and Other Drug Abuse. (1992). *Alcohol and Drug Abuse Indicators, 1990.* (Publication No. PCS-437). Madison, WI: Author.

Wisconsin Department of Public Instruction. (1993-1999). *Wisconsin Youth Behavioral Risk Factor Surveillance System Survey*. Madison, WI: Author.

Wisconsin Department of Health and Family Services, Bureau of Health Information. (1994-1998). *Wisconsin Behavioral Risk Factor Surveillance System*. Madison, WI: Author.

Wisconsin Department of Transportation. (1994-1998). *Wisconsin Traffic Crash Facts.* Madison, WI: Author.

Wisconsin Department of Health and Family Services, Division of Children and Family Services. (1994-1998). *Child Abuse and Neglect Reporting System*. Madison, WI: Author.

Wisconsin Department of Health and Family Services, Division of Supportive Living. (1994-1999). *Human Services Reporting System*. Madison, WI: Author.

Health Priority: Environmental and Occupational Health Hazards

Definition

Exposure to toxic substances, noise, vibration and other hazardous agents in the environment or the workplace that can create or aggravate health conditions. (Note: hazards that result in injury are considered in a separate health priority described as "Intentional and Unintentional Injuries and Violence").

Impact

Environmental and occupational health hazards continue to contribute significantly to disease, disability and premature death in Wisconsin.

Diagnoses related to environmental health hazards remain common. These hazards are encountered from a variety of sources, each of which poses a unique set of challenges to public health. Preventing these health hazards from becoming health problems requires that these hazards be fully understood and addressed.

As Wisconsin seeks to maintain and expand its economic base, the recognition, evaluation and control of occupational health hazards will remain a critical challenge. Exposure to workplace hazards continues to contribute to illness in Wisconsin.

Water Quality

Maintaining a safe and plentiful supply of drinking water is critical to good health. Water supplies are subject to contamination from both naturally occurring substances (such as arsenic and radium) and chemical pollutants from man-made sources such as petroleum storage tanks and industrial facilities. Nitrate and pesticides may enter water supplies as a result of agricultural practices, and declining water tables in several areas in Wisconsin suggest that the availability of high-quality drinking water may be limited in the future.

Air Quality

Air pollution remains an important health concern in Wisconsin. The incidence of asthma, a respiratory condition commonly attributed to environmental and occupational exposures, has increased sharply in the past two decades. Research showing increased death rates in major population centers on days with high concentrations of ambient particulate matter suggests that continuing efforts toward pollution prevention may be of significant benefit for public health. (Samet, Dominici, Curriero, Coursac, & Zeger, 2000).

Hazardous Wastes

The presence of sites contaminated with hazardous materials in Wisconsin poses a continuing public health challenge. Waste disposal options such as landfilling, incineration and surface application each present unique ecological and human health risks. Elevated levels of chemical contaminants in sport-caught fish have led to the issuance of consumption advisories as an interim public health intervention. The development of long-term management strategies for contaminated materials will remain a key environmental health issue into the future.

Environmental Radiation

Exposure to environmental radiation may contribute to health risks as well. Naturally occurring sources such as radon in indoor air have attracted increased regulatory attention in recent years. The use of radioactive materials in industry, medicine and academic research represents valuable advances in technology. Providing assurance that these uses can occur without adversely affecting the health of patients, workers and the public remains an important public health role.

Indoor Air Quality

Chemical hazards in residential settings represent an important public health threat and an opportunity for disease prevention. In spite of the increasing availability of carbon monoxide (CO) detectors, reports of carbon monoxide poisonings remain common (Knobeloch & Jackson, 1999). Research in the past decade points to indoor air pollutants

such as tobacco smoke, dust mites and cockroach allergens as important contributors to asthma and other respiratory conditions.

Environmental Lead Exposure

The presence of lead-based paint in the home is the primary cause of childhood lead poisoning. Concern about the effects of lead exposure has recently led to changes in State of Wisconsin rules for the removal of lead paint from rental properties. Providing educational outreach programs for landlords, as well as employers and employees who work or come into contact with lead, are vital to decrease the incidence of childhood and adult lead poisoning.

Occupational Illness and Repetitive Injury

Healthcare, laboratory and other employees who are at risk for needlestick injuries and exposure to blood and body fluids have an increased risk for bacterial and viral disease exposure. Employees who are required to perform repetitive activities at work are also at risk for developing conditions such as back injuries, carpal tunnel syndrome and other repetitive motion injuries. Recent federal legislation regarding bloodborne pathogens and repetitive trauma has necessitated public educational programs for businesses. These outreach programs focuses on methods the business community can use to reduce the incidence of these conditions for their employees.

Occupational Disease

Occupational disease can have a significant impact on an employee's quantity and quality of life. Cancer, pneumoconiosis, tuberculosis and hearing loss related to exposure to chemicals, asbestos, crystalline silica and other dusts, bacterial and viral agents, and high noise levels can be avoided with training and proper personal protective equipment. To have an impact with these diseases, it is vital to educate employers and employees about the proper equipment to use for each type of exposure and the importance of using the equipment.

Workplace Exposures Affecting Reproductive Health

Exposures to chemical and other occupational hazards can affect men and women and their ability to have healthy children. It is important that adequate information is available to workers, health care providers and employers on identifying and mitigating risks of reproductive workplace hazards. This knowledge enables Wisconsin citizens to work without risk to their growing families.

Economic Burden

The burden of environmental and occupational health hazards may include a vast range of costs, including pollution prevention efforts, medical care, spill-related evacuations and lost productivity. Data from the U.S. Bureau of Economic Analysis (1995) suggests that over $100 billion is spent on pollution control and abatement in the U.S. each year. The annual cost associated with asthma was estimated in 1990 at $6.2 billion, with much of this cost associated with emergency room use and hospitalization (Weiss, Gerben, & Hodgson, 1992). Data from a 1997 CDC study showed that direct and indirect costs of occupational injuries and illnesses totaled $171 billion ($145 billion for injuries and $26 billion for diseases). These costs compare to $33 billion for AIDS, $67.3 billion for Alzheimer's Disease, $164 billion for circulatory diseases, and $170.7 billion for cancer (U.S. Department of Health and Human Services, 1999).

Important Disparities

Differences in health problems associated with environmental or occupational exposures are primarily related to where people live and work. The prevalence of asthma and lead poisoning are particularly common among inner-city children, while rural children are at higher risk for conditions resulting from contamination of private drinking water wells. Consumption of fish from Wisconsin waterways is common among American Indians and Southeast Asians, putting them at greater risk from chemical contaminants in Wisconsin sport fish.

KEY ENVIRONMENTAL/OCCUPATIONAL HAZARDS ISSUES		
Issue	**Description**	**Example(s)**
Some hazards are related to economic benefits for the state	Environmental and occupational health hazards are unique in that they are often a by-product of activities that otherwise contribute to the economic health of Wisconsin. Because of this relationship, meeting the goal of hazard reduction and elimination requires that a wide range of partners be invited to the table when dealing with those issues.	Agriculture represents an important Wisconsin industry and much of the state's economic prosperity depends on the productivity of farmers and agricultural industries. Maintaining this productivity while preventing groundwater contamination, excessive occupational exposure to pesticides, noise from farm equipment and respiratory hazards generated from animal feedlots will be a key challenge for the future.
Continuing to improve our ability to detect potential hazards	Advances in technology have greatly improved the ability to recognize, evaluate and control many environmental and occupational hazards. Because of the direct link between these hazards and health outcomes, environmental and occupational disease and injury are often—but not always—highly amenable to prevention activities.	"Chronic diseases that result from occupational exposures are particularly important to Wisconsin's labor community. With injuries, it's easy to establish cause and effect. But the effects of some hazardous exposure may not show up for years, making it hard to trace the cause. So unions are particularly interested in getting better information about occupational hazards." *– Neill DeClercq, JD/MS, UW-Extension School for Workers*
Screening and protecting vulnerable populations	As with other hazards, many environmental and occupational hazards disproportionately affect the very young, the very old, communities of color and the economically disadvantaged. The inability to access screening and diagnostic services may also hamper efforts to reduce the impact of these hazards..	Average blood lead levels in the U.S. population have decreased since 1976 due to increased awareness and new regulations for gasoline. However, federal estimates suggest that as many as two-thirds of U.S. children with elevated blood lead go undiagnosed (U.S. General Accounting Office, 1999). This low screening rate extends to children on Medicaid, who are required by law to be screened for lead poisoning.

REFERENCES

Knobeloch, L., & Jackson, R. (1999). Recognition of Chronic Carbon Monoxide Poisoning. *Wisconsin Medical Journal*, 98, 26-29.

Samet, J. M., Dominici, F., Curriero, F. C., Coursac, I., & Zeger, S. L. (2000). Fine Particulate Air Pollution and Mortality in 20 U. S. Cities, 1987-1994. *New England Journal of Medicine*, 343, 1742-1749.

U. S. Bureau of Economic Analysis. (1995). *Summary of Current Business*. Washington, D. C.: Author.

U. S. Department of Health and Human Services, National Institute for Occupational Safety and Health. (1999). *National Occupational Research Agenda Update #99*-124. Washington, D. C.: Author.

U. S. General Accounting Office. (1999). *Lead Poisoning – Federal Health Programs Are Not Effectively Reaching At-Risk Children*. Washington, D. C.: Author.

Weiss, K. B., Gergen, P. J., & Hodgson, T. A. (1992). Economic Evaluation of Asthma in the United States. *New England Journal of Medicine*, 326, 862-866.

Health Priority: Existing, Emerging, and Re-Emerging Communicable Diseases

Definition

Emerging communicable diseases may result from changes in or evolution of existing organisms; or diseases that are known to occur in one setting may spread to new geographic areas or human populations. Previously unrecognized infections may appear in persons living or working in areas undergoing ecologic changes (e.g., deforestation) that increase human exposure to insects, animals, or environmental sources that may harbor new or unusual infectious agents (Morse, 1995). Communicable diseases re-emerge by developing antimicrobial resistance (e.g., *gonorrhea, pneumococci*) or when the public health measures that originally brought them under control are reduced or eliminated (e.g., *tuberculosis,* and *pertussis*) (Institute of Medicine, 1992).

Impact

During the past 30 years at least 30 new viral, bacterial, and parasitic diseases have been classified as "emerging"—either newly identified or suddenly increasing in incidence (Institute of Medicine, 1992). For example, *E. coli O157:H7* was first identified as a cause of human illness in 1982. It is currently responsible for an estimated 73,000 cases of infection and over 60 deaths in the United States each year (Centers for Disease Control and Prevention, 2001).

Pandemic influenza and tuberculosis provide two additional examples of the impact of emerging and re-emerging infectious diseases. The 1957 and 1968 influenza pandemics killed 90,000 people in the United States (Meltzer, Cox & Fukuda, 1999). In the late 1980s and early 1990s, a re-emergence of tuberculosis in the United States following reduction in resources to prevent and control TB resulted in an estimated 39,000 cases in excess of what was predicted to occur (American Thoracic Society, 1992). The objective of intensified surveillance for new and re-emerging infectious diseases is to detect them early and to inform the public about how to reduce their risks of becoming infected.

Wisconsin's ability to perform as a leader in detection and response to emerging and re-emerging infectious diseases has largely been the result of the astute observations of laboratorians, clinicians, public health epidemiologists, and even veterinarians working within the state. Despite the perceptive skills of these individuals, Wisconsin has no comprehensive system for detecting outbreaks of infectious diseases except for food and waterborne

Examples of Wisconsin Division of Public Health's Ability to Detect and Respond to Emerging and Re-emerging Infection Diseases

1979 – *Staphylococcus* aureus and *Toxic Shock Syndrome* (TSS)

1979 – Response to first cluster of *Lyme Disease* cases in Wisconsin

1983 – Initial WI AIDS/HIV cases

1984 – Blastomycosis outbreak associated with a beaver dam

1987 – Initial Wisconsin *babesiosis* cases

1989 – Emergence and transmission of amandatine resistant *influenza* A virus

1993 – Massive waterborne outbreak of *Cryptosporidium* infections, Milwaukee

1994 – Non-invasive gastrointestinal illness caused by Listeria monocytogenes

1996 – First Wisconsin human *granulocytic ehrlichiosis* cases

diseases. Outbreaks of illnesses that are not on the current list of reportable diseases may go undetected or may be detected only after an outbreak is well under way. Emerging infectious diseases, with the exception of those reportable diseases that may re-emerge, are not usually detected through established surveillance activities. In addition to enhanced communication with traditional partners, identification of non-food- or waterborne outbreaks will require fostering communication with non-traditional partners who are in a unique position to detect unusual disease occurrences. This may include employee health nurses, pharmacists, or ambulance services. Mechanisms for rapid notification of unusual events by traditional and non-traditional disease surveillance partners to individuals who can properly respond are key to enhancement of Wisconsin's current acute and communicable disease surveillance system.

Economic Burden

- The 1957 and 1968 influenza pandemics resulted in $3.4 billion in direct medical care costs. CDC estimates that the next influenza pandemic will result in a total cost of $71.3 to $166.5 billion (Meltzer, Cox & Fukuda, 1999).
- A bioterrorism event could disrupt the economy of an entire state or even region of the country and its affect could last for years.
- As we have recently experienced, a single act of terrorism can disrupt not just a state, region, or even our national economy, but can affect the economies of the entire world. A bioterrorism attack would have the added impact of causing disruption over time as the epidemic, and the uncertainty about how devastating it will be, mounts.
- Just one cause of food-borne illness, salmonella, is estimated to cost between $0.5 billion and $2.3 billion nationally each year (Frenzen et al, 1999).

Important Disparities

Immunosuppression, which is a by-product of aging, the use of chemotherapy and other medications, diseases or other factors, often permits infection by microorganisms that typically are not pathogenic in humans. Examples of emerging diseases which may have a more severe outcome in the immunosuppressed include: *cryptococcosis*, *cryptosporidiosis*, *legionellosis*, *listeriosis*, *microsporidiosis*, *pneumocystis pneumonia*, *toxoplasmosis*, and other AIDS defining opportunistic infections.

Changes in the distribution of populations can bring people into contact with new pathogenic organisms (disease causing) or vectors (e.g., mosquitoes or ticks) that transmit those organisms. Examples of emerging infections which are facilitated by human populations venturing into wooded areas more frequently and increases in specific vectors include *babesiosis*, *ehrlichiosis*, *La Crosse viral infection*, and *Lyme disease*.

Young children are especially vulnerable to serious consequences of *E. coli O157:H7* infection and tuberculosis.

Other special populations would include HIV infection in communities of color and tuberculosis in the foreign-born.

KEY COMMUNICABLE DISEASE ISSUES		
Issue	**Description**	**Example(s)**
Antibiotic Resistance	Organisms develop resistance to commonly used antibiotics when they are used inappropriately (e.g., treating viral infections, patients failing to take the full course of treatment, indiscriminant use of "antimicrobial" products in the production of food or in the home).	• *Gonorrhea* resistant to penicillins, tetracyclines, spectinomycin • Methicillin resistant *Staphylococcus aureus* • Drug-resistant *Streptococcus pneumoniae* • Multiple drug resistant TB • Quinolone resistant enteric pathogens • Multi-drug resistant *Salmonella Typhimurium* DT-104 • Drug resistant malaria, especially *falciparum*
Bioterrorism	Disease agents may be used as weapons of threat or harm.	• Anthrax • Viral Hemorrhagic Fevers • Plague
Influenza Pandemics	Periodically, the virus which causes influenza undergoes a dramatic antigenic shift (a dramatic change in the disease-causing ability of a virus) leaving much of the world's population susceptible. This leads to a dramatic increase in illness, hospitalizations and deaths, particularly among infants, the elderly and those with underlying disease.	• 1918 influenza pandemic killed 500,000 Americans and 20 million people worldwide. • In 1957 and 1968 influenza killed 90,000 Americans even with the availability of antibiotics. • The next influenza pandemic is expected to result in between 89,000 and 207,000 deaths; between 314,000 and 734,000 hospitalizations; and cost up to $160 billion.
Adequate Surveillance	The ability of the public health system to respond to the occurrence of communicable diseases depends initially on its ability to detect them. A well-designed, fully developed and carefully implemented surveillance system is the key to the success of all communicable disease control efforts.	• A mechanism for detecting unusual clinical presentations or clusters of unusual diseases or syndromes including zoonoses (transmission of diseases between animals and humans). • Laboratories capable of identifying and characterizing infectious agents. • An information system to analyze reportable occurrences and to disseminate summary data to reporting agencies. • A response mechanism to mobilize investigation and control efforts of local and state agencies.

REFERENCES

American Thoracic Society and Centers for Disease Control and Prevention. (1992). *Control of Tuberculosis in the United States*, 145, 1623-1633.

Centers for Disease Control and Prevention Web Site. (2001). *Health Topics A-Z, Escherichia coli O157:H7*.

Frenzen P., Riggs T., Buzby J., Breuer T., Roberts T., Voetsch D., Reddy S., & The FoodNet Working Group. (1999). Salmonella Cost Estimate Update Using the FoodNet data. *Food Review*, 22 (2), 10-15.

Institute of Medicine. (1992*). Emerging Infections: Microbial Threats to Health in the United States.* Washington, DC: National Academy Press.

Meltzer, M.I., Cox, N.J., & Fukuda, K. (1999). The Economic Impact of Influenza in the United States. *Emerging Infectious Diseases*, 5, 659 –671

Morse, S.S. (1995). Factors in the emergence of infectious diseases. *Emerging Infectious Diseases*, 1, 7-14

Health Priority: High Risk Sexual Behavior

Definition

Sexual behaviors, including unprotected sex, that make someone more susceptible to infections or diseases, or that result in unintended pregnancy.

Impact

The primary risks associated with unprotected sexual behaviors are unintended pregnancies and sexually transmitted diseases, which include *syphilis, gonorrhea, chlamydia, hepatitis B, human immunodeficiency virus (HIV), and hepatitis C.* These health conditions significantly affect the health of the public as well as the social and economic well-being of individuals, families, and communities.

- With approximately 22,000 cases reported annually, sexually transmitted diseases exceed all other communicable diseases combined, reported to the Wisconsin Division of Public Health.
- Findings from the 1999 Wisconsin Youth Risk Behavior Survey indicate the percentage of students who reported having ever had sexual intercourse significantly decreased between 1993 and 1999 from 47 to 42 percent (Wisconsin Department of Public Instruction, 1999). However, among those who are sexually active, the percentage who reported sexual intercourse in the past three months increased from 69 to 74 percent for the same time period. Among sexually active students in Wisconsin, six out of ten reported using a condom the last time they had sex. Condom use decreases as grade increases.
- Over 7,000 cases of HIV infection have been reported in Wisconsin since the HIV/AIDS epidemic began in the 1980s (Wisconsin AIDS/HIV Quarterly Surveillance Summary, 2000). Current estimates indicate that approximately 8,000 Wisconsin residents are infected with HIV.
- Over half of all pregnancies occurring in the United States are unintended (Henshaw, 1998). Although unintended pregnancy affects all segments of society, it is associated with a higher probability that a child will be born to a mother who is unmarried, over age 40, or adolescent. In 1998, 111 births were to Wisconsin teens under 15 years of age and 2,366 were to mothers 15 to 17 years (Wisconsin Department of Health and Family Services, 1998).

Economic Burden

- The Institute of Medicine estimates annual direct and indirect costs of selected major Sexually transmitted diseases at approximately $10 billion nationally or, if sexually transmitted HIV infections are included, $17 billion (Institute of Medicine, 1997).
- The lifetime costs of treating someone with HIV, from infection to eventual death, is estimated at nearly $155,000 (U.S. Department of Health and Human Services, 2000).
- Nationally, the estimated annual costs of adolescent childbearing and the social problems that confront adolescent mothers, fathers, and their children is approximately $29 billion (Department of Health and Family Services, 1998).

KEY HIGH RISK SEXUAL BEHAVIOR ISSUES		
Issue	**Description**	**Example(s)**
Poverty	Poverty contributes to poor health and reduced physical, psychological, and cognitive functioning. (Effects of Poverty, 1998) These factors, either singly or collectively, may contribute to high risk sexual behaviors. Persons who are poor have higher rates of sexually transmitted diseases (Institute of Medicine, 1997), including HIV infection (Murrain and Barker, 1997), and unintended pregnancy (Institute of Medicine, 1997) They frequently have limited access to health care services which results in undiagnosed medical conditions such as sexually transmitted diseases, not completing recommended therapies, and lack of prenatal care because of limited financial resources or competing basic needs.	A young man who is poor turns to prostitution for economic gain and is exposed to multiple sexually transmitted diseases. After 10 months of unprotected sex, the young man is positive for gonorrhea, HIV, and hepatitis B. A woman who is low income, delays being tested for sexually transmitted diseases because she lacks access to medical care. The woman's untreated sexually transmitted disease eventually results in sterility and other health problems that could have been prevented by early medical care.
Discrimination	Population groups with higher risk behaviors for sexually transmitted diseases include gay men, injection drug users, sex industry workers, and members of racial and ethnic minority communities. These groups frequently face discrimination that may result in self-denial of risk; delayed access to preventive and therapeutic health care services; and discrimination in such areas as employment, health and human services, and housing.	Due to fear of discrimination, a man who has sex with men and who does not identify as being gay seeks anonymous partners in public sex environments. A person with HIV infection is denied employment because an employer becomes aware of the person's infection.
Substance use	Substance abuse is a risk behavior frequently associated with sexually transmitted diseases (Makenzie & Davis, 1993), including HIV (Institute of Medicine, 1997). Women with unintended pregnancies are at higher risk for substance use. (Institute of Medicine, 1995) Substance use undermines an individual's cognitive and social skills, placing the substance user, his/her sexual and/or drug-using partners, and an unborn fetus of a substance-using woman at risk. Reciprocally, a diagnosis of HIV infection, other sexually transmitted diseases, or unintended pregnancy may result in increased substance use and further interfere with the medical therapies.	A group of teens engaging in alcohol and drug use lose judgement and engage in high-risk sexual activities. A young woman exchanges sex for drugs with many anonymous partners. She becomes pregnant. Shortly after, she and her fetus become infected with syphilis. A crack cocaine user may increase crack cocaine use on learning his/her HIV status. This results in increased high risk behaviors, exposing an already high number of sexual partners to HIV.
Transferring knowledge into behavior	Despite best efforts, risk reduction directed at educating the population about the prevention of sexually transmitted diseases and unintended pregnancy will not be successful unless people are motivated to change high risk behaviors and correctly and consistently practice risk reduction.	A young woman in high school understands risk reduction but feels pressure from her boyfriend to have unprotected sex. She decides to continue unprotected sex because she has not become pregnant. A young gay man, not experiencing the HIV epidemic as the previous generation of gay men, incorrectly assumes the risk or consequences of unprotected sexual activity is less because new drug therapies become available.

Important Disparities

Wisconsin's racial and ethnic groups are hardest hit by the impact of high risk sexual behaviors. For example:

- Unintended Pregnancies: From 1991 to 1998, birth rates among Wisconsin adolescents declined across all racial and ethnic groups except Hispanic/Latinos, which rose 15 percent. Data from 1998 show that African American, American Indian, and Hispanic/Latino adolescents are much more likely to give birth than are white adolescents (Department of Health and Family Services, 1998).
- Sexually Transmitted Diseases: In general, sexually transmitted diseases disproportionately affect African Americans, adolescents, and young adults. For example, while only 5.5 percent of Wisconsin's population were African Americans, 90 percent of reported cases of syphilis in Wisconsin were among African Americans.
- HIV Infection/AIDS: Although only 10 percent of the Wisconsin population are minority, in 1999 more than half (52 percent) of all cases of HIV infection reported in a single year were among racial and ethnic minorities. The incidence of HIV infection was 13-fold greater for African Americans and six-fold greater for Hispanic/Latinos compared to the rate among Whites (Hoxie, 2000).

REFERENCES

Henshaw, S. K. (1998). Unintended pregnancy in the United States. *Family Planning Perspectives*, 30, 24-29.

Hoxie, N. J. (2000). The Epidemic of HIV Infection in Wisconsin: A Review of Case Surveillance Data Collected Through 1999. *Wisconsin AIDS/HIV Update*, Winter, 9-20.

Institute of Medicine. (1995*). The Best Intentions. Unintended Pregnancy and the Well-Being of Children and Families.* Washington, DC: National Academy Press.

Institute of Medicine. (1997). *The Hidden Epidemic: Confronting Sexually Transmitted Diseases.* Washington, DC: National Academy Press.

Effects of Poverty on HIV Risks. (1998). *HIV Counselor Perspectives*, 7, 1-4.

MacKenzie, W. R. & Davis, J. P. (1993). Trends in Syphilis Incidence in Wisconsin, 1985-1991. *Wisconsin Medical Journal*, 92, 67-72.

Murrain, M. & Barker, T. (1997). Investigating the Relationship Between Economic Status and HIV Risk. *Journal of Health Care for the Poor and Underserved*, 8, 416-423.

U.S. Department of Health and Human Services. (2000). In *Healthy People 2010.* (Conference Edition). Chapter 13: HIV. Washington, D.C.: Author.

Wisconsin Department of Public Instruction. (1999). *Wisconsin Youth Risk Behavior Survey*.

Madison, WI: Author.

Wisconsin Department of Health and Family Services, Division of Children and Family Services. (1998). *Births to Teens in Wisconsin, 1998.* Madison, WI: Author

Wisconsin Department of Health and Family Services, Division of Children and Family Services. (1998). *Brighter Futures: The Wisconsin Plan to Prevent Adolescent Pregnancy.* Madison, WI: Author.

Wisconsin HIV/AIDS Quarterly Surveillance Summary: Cases Reported Through June 30, 2000. (2000). *Wisconsin AIDS/HIV Update*, Summer, 1-7.

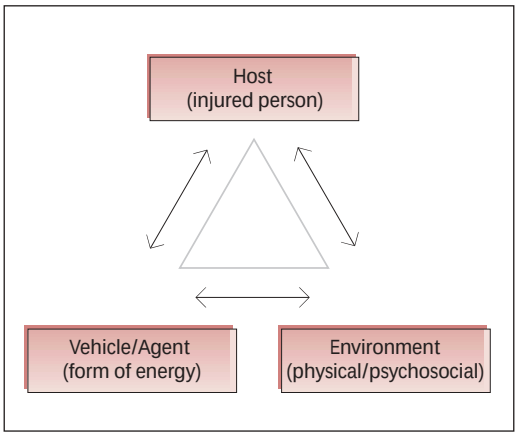
Health Priority: Intentional and Unintentional Injuries and Violence

Definition

Injury is defined as "any unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as heat or oxygen" (National Committee for Injury Prevention and Control, 1989). There are two classifications of injuries:

- Unintentional, such as falls, burns, motor vehicle crashes, poisonings, and drownings.
- Intentional, violent injury, including suicide, homicides, and assaults such as sexual assault, intimate partner violence, child and elder abuse.

Injuries do not happen by chance. They follow a distinct pattern, like diseases. Injuries are predictable and preventable. Injury occurs because of the interaction of three sources—the host (injured person), the agent (form of energy), and the environment. The national public health model of injury follows:



In Wisconsin more than 2,600 and 2,700 people died from both unintentional and intentional injuries in 1997 and 1998 respectively, which accounted for 6 percent of all deaths (Department of Health and Family Services, 2000). Injuries are the 3rd leading cause of death in the U.S and are the 4th highest category of death by underlying cause in Wisconsin, following cancer, diseases of the circulatory and respiratory systems (Department of Health and Family Services, 2000).

Impact

Injury is the most under recognized major public health problem facing our country today. Nationally, estimates show the cost of injury annually is approximately $24 billion for direct medical care, rehabilitation, lost wages, and productivity losses. (Association of State and Territorial Directors of Health Promotion and Public Health Education [ASTDHPPHE], 1998). This is a 42 percent increase from a decade ago (ASTDHPPHE, 1998).

Regardless of age, gender, race or ethnicity, injury is a threat to all of us. It is the leading cause of death in people ages 1 to 44 both in Wisconsin and across the nation. Nationally, for every injury death, there are about 18 hospitalizations, 233 emergency department visits, and 450 physician visits. In the United States, more than 30 million emergency department visits result from nonfatal injuries every year. More than 72,000 people are disabled by injuries (ASTDHPPHE, 1998).

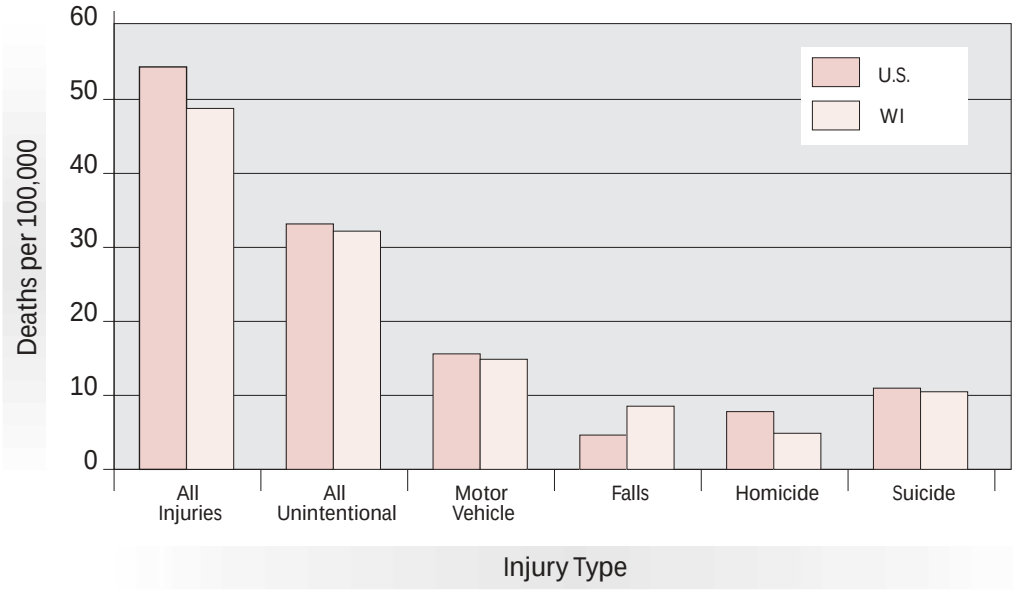
Workplace injuries, including those caused by violence, contribute significantly to the financial burden of injuries. Nationally nearly 6.1 million occupational injuries annually result in lost work time, medical treatment or job restrictions. Sixty-eight percent of 14 to16-year-olds injured at work are limited in their normal activities for at least one day, and 25 percent experience limitations for more than a week (National Institute for Occupational Safety and Health, 1995).

Supporting Data

The following graph indicates Wisconsin's age-adjusted injury death rates are generally below the national injury death rates. The exception being falls where the U.S. rate is 4.34 per 100,000 population and the Wisconsin rate is 8.03 per 100,000. The death rate for suicide in Wisconsin is 11.02 per 100,000 population, almost even with the national rate of 11.31 per 100,000. (Centers for Disease Control and Prevention, 2001).

1997 Injury Death Rates

Source: Centers for Disease Control and Prevention, 2001



Important Disparities

Many factors influence the risk of injury including gender, race and ethnicity, income and education, disability, urban or rural environments, and sexual orientation.

Gender

Nationally, men are two times more likely than women to die from unintentional injuries and four times more likely than women to die from firearm related injuries (U.S. Department of Health and Human Services, 1999). Women are victims of workplace homicide at a rate that is almost four times the rate for men. (National Institute for Occupational Safety and Health, 2000).

Race and Ethnicity

The rate of homicide is six times greater for African Americans than for Whites (Department of Health and Human Services, 2000) American Indians have disproportionately high death rates from unintentional injuries and suicides (Department of Health and Human Services, 2000).

1997 Injury Death Data (CDC, 2001)

	All Injuries	Unintentional	Motor Vehicle	Falls	Homicide	Suicide
US Total	146,400	92,353	43,591	12,553	19,491	30,535
WI Total	2,619	1,787	759	500	212	576
US Rate*	54.22	33.84	16.29	4.34	7.6	11.31
WI Rate*	48.77	32.67	14.72	8.03	4.27	11.02

* rate is per 100,000 & age adjusted

Source: Centers for Disease Control and Prevention, 2001

KEY INJURY AND VIOLENCE ISSUES		
Issue	**Description**	**Example(s)**
Motor vehicle crashes	Motor vehicle crashes are a major cause of injury and death in Wisconsin.	In 1998, 1.5 percent of all deaths in Wisconsin were attributable to motor vehicle crashes, 27 percent of injury deaths in Wisconsin (Department of Health and Family Services, 2000; Department of Transportation, 1999). In addition, more than 62,000 people were injured—more than 18,000 speed-related and more than 8,400 alcohol-related (Department of Transportation, 1999). It is estimated there is more than a $2.4 billion economic loss associated with these motor vehicle crashes (ASTDHPPHE, 1998).
Falls	Falls are second only to motor vehicle crashes as major causes of injury and death in Wisconsin.	Wisconsin has one of the highest death rates for falls in the U.S. In 1997, U.S. deaths from falls was 4.34/100,000 people, whereas, in Wisconsin the rate was 8.03/100,000 (Centers for Disease Control and Prevention, 2001).
Bicycle and Pedestrian	Not only are motor vehicle crashes responsible for injuries and deaths of thousands of people in Wisconsin, but pedestrian injuries are the leading causes of trauma deaths among children.	Between bicycles and pedestrian injuries and deaths, more than 75 people died and 3,200 were injured in Wisconsin—the majority of them being in the 5 to 14 age group (Department of Health and Family Services, 2000).
Suicide	Many suicides are preventable. There is a need to broaden the public's awareness of suicide and its risk factors and enhance access to resources including services and programs for suicide prevention.	For young people 15 to 24 years old, suicide is the third leading cause of death behind unintentional injury and homicide surpassing the combined rates of death due to cancer, heart disease, AIDS, birth defects, stroke, pneumonia, influenza and chronic lung disease (Department of Health and Human Services, 1999). Older populations are also more prone to suicide. In Wisconsin in 1997, 27 percent of the injury deaths among people over 55 years of age were attributed to suicide (Department of Health and Family Services, 2000).
Occupational injuries	After motor vehicle crashes, contact with machinery or other objects are the leading causes of occupational fatalities.	Motor vehicle crashes killed 29 people while they worked in Wisconsin in 1998. Another 19 died from contact with machinery or other objects (Department of Workforce Development, 1999). Almost 20,000 cases of back injuries are attributed annually to Wisconsin workplace activities (Department of Workforce Development, 1999). Nearly 6 of every 100 full-time equivalent youth workers obtain treatment in emergency departments each year (National Institute of Occupational Safety and Health, 1995). The total economic burden to Wisconsin has not been calculated, but in 1997, over $186 million was paid to workers who suffered non-fatal injuries in addition to the cost of medical services to treat their injuries (Department of Workforce Development, January 1999).
Violence against women	Violence against women, especially spouse and partner battering and sexual assault, is increasing. Yet less attention is drawn to this violence than violence directed at men. Three reasons might be attributable to: (1) underreporting because of fear of shame and retribution, as well as the insensitivity of authority personnel, (2) the frequency and severity of rape and sexual assault injuries aren't always captured by hospitalization and death records, and (3) the extent of injury and scope of pain is downplayed and not understood.	In 1998 in Wisconsin, an estimated 6,056 sexual assaults were reported to law enforcement agencies. Sexual assault survivors were primarily women (83 percent) and primarily white (81 percent). These percentages were based on reported cases to law enforcement agencies and it is believed that a lesser proportion of minorities report this crime. The average age of a sexual assault offender was 24, nine years older than the average victim (Office of Justice Assistance, 2000).
Homicides	Homicides are deaths resulting from injuries inflicted by another person with the intent to injure or kill. Homicide is the leading cause of death for women in the workplace (National Institute of Occupational Safety and Health, 2000).	In Wisconsin, approximately 188 people died from homicide related injuries in 1998 (Department of Health and Family Services, 2000).

Income and Education

In general, population groups that suffer the worst health status are also those that have the highest poverty rates and least education (Department of Health and Human Services, 2000).

Disability and Age

Vulnerable populations such as the elderly and disabled are at great risk of both intentional violent injuries and unintentional injuries (Department of Health and Human Services, 2000).

Urban and Rural Environments

Injury related deaths are 40 percent higher in rural populations than in urban populations (Department of Health and Human Services, 2000). People living in rural areas are less likely to wear seatbelts (Department of Health and Human Services, 2000).

Sexual Orientation

Gay male adolescents are two to three times more likely than their peers to attempt suicide (Department of Health and Human Services, 2000).

REFERENCES

Association of State & Territorial Directors of Health Promotion and Public Health Education, Society for Public Health Education, and Centers for Disease Control & Prevention. (1998). *Injury Prevention & Control: Essential Information for Health Professionals.* Washington DC: Author.

Centers for Disease Control and Prevention. (2001). *Web-Based Injury Statistics Query and Reporting System (WISQARS).* Atlanta, GA: Author

National Committee for Injury Prevention & Control. (1989*). Injury Prevention: Meeting the Challenge.*

National Institute for Occupational Safety and Health. (1995). *Preventing Deaths and Injuries of Adolescent Workers.* Author.

National Institute for Occupational Safety and Health. (2000). *Worker Health Chartbook.* Author.

Office of Justice Assistance. (2000). *Sexual Assaults In Wisconsin 1998.* Madison, WI: Author.

U.S. Department of Health and Human Services. (2000). *Healthy People 2010.* Washington, DC: Author.

U.S. Department of Health and Human Services. (1999). *The Surgeon General's Call to Action to Prevent Suicide.* Washington, DC: Author.

Wisconsin Department of Health and Family Services, Division of Health Care Financing, Bureau of Health Information. (2000). *Wisconsin Deaths 1998.* Madison, WI: Author

Wisconsin Department of Transportation. (1999). *1998 Wisconsin Traffic Crash Facts.*

Madison, WI: Author.

Wisconsin Department of Workforce Development, Workers Compensation Division. (1999). *Census of Fatal Occupational Injuries 1998.* Madison, WI: Author.

Wisconsin Department of Workforce Development, Workers Compensation Division. (1999). *Occupational Injuries and Illnesses 1997.* Madison, WI: Author.

Wisconsin Department of Workforce Development. (1999). *Report on Workers Illness and Injury Claims Closed in Calendar Year 1997.* Madison, WI: Author.

Health Priority: Mental Health and Mental Disorders

Definition

Mental health is inextricably linked with physical health and is fundamental to good health and human functioning. *Mental health* is a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with other people, and the ability to adapt to change and to cope with adversity. Mental health is indispensable to personal well being, family and interpersonal relationships, and meaningful contribution to community and society.

Mental illness is the term that refers collectively to all diagnosable mental disorders. *Mental disorders* are health conditions that are characterized by alterations in thinking, mood, or behavior or some combination thereof, which are associated with distress and impaired functioning and result in human problems that may include disability, pain, or death. (U.S. Department of Health and Human Services, 1999)

Impact

Mental disorders are real and treatable health conditions. They exact a staggering toll on millions of affected individuals, as well as on their families and communities throughout our state and nation. According to the landmark "Global Burden of Disease" study commissioned by the World Health Organization and the World Bank, mental disorders represent four of the ten leading causes of disability for persons age 5 and older. Among "developed" nations, including the United States, major depression is the leading cause of disability. Also near the top of these rankings are bipolar disorder, schizophrenia, and obsessive-compulsive disorder. Tragically, mental disorders are also contributors to suicide, which is one of the leading preventable causes of death in the United States and worldwide (Murray & Lopez, 1996).

Mental illness can affect young children, adolescents, adults, and older adults of all ethnic and racial groups, genders, and educational and socioeconomic levels.

- At least one in five children and adolescents aged 9 to 17 has a diagnosable mental disorder in a given year. (Shaffer, Fisher, & Dulcan et al., 1996).
- Approximately 40 million Americans aged 18 to 64 years (22 percent of that age group) had a diagnosis of mental disorder alone (19 percent) or of a co-occurring mental and addictive disorder (3 percent) in the past year (Regier, Narrow, & Rae, 1999; Kessler, McGonagie, & Zhao et al., 1994).
- An estimated 25 percent of older persons aged 65 and over experience specific mental disorders that are not part of normal aging such depression, anxiety, and substance abuse (Department of Health and Human Services, 1999).

Mental disorders vary in severity and in their impact on people's lives. They often strike early in life, during childhood, adolescence or early adulthood. Because mental disorders may have severe symptoms and often run a persistent or recurrent course, they are profoundly destructive, not only to life and productivity, but to the well being of families, causing immeasurable suffering to affected individuals and their loved ones.

- Schizophrenia will affect more than 2 million Americans in one year (Regier, Narrow, & Rae, 1999). The symptoms and impairments caused by this severe and persistent mental illness produce distress and major functional disability in adult role functioning including employment, self-care, social and interpersonal relationships. With state-of-the-art intensive community-based treatments, increasing numbers of persons with schizophrenia can and do view recovery as an achievable goal.
- Affective disorders, which encompass major depression and bipolar disorder, constitute a second category of severe mental illness. Depression affects nearly 10 percent of adult Americans ages 18 and over in a given year, or more than 19 million people in 1998. Unipolar or major depression is the leading cause of

disability in the United States and worldwide (Department of Health and Human Services, 1999). Bipolar disorder affects around 1 percent of adult men and women. Nearly twice as many women (12 percent) as men (7 percent) are affected by a depressive illness each year. A high rate of suicide is associated with such mood disorders (Robins, Locke, & Regier, 1991).

- Suicide, a significant public health problem, ranks as the eighth leading cause of death in the United States and Wisconsin. Suicide was the cause of death listed for 593 Wisconsin resident deaths in 1998. It is the second leading cause of death among young people in Wisconsin aged 15 to 24 years, accounting for 100 deaths (Peters, Kochanek, & Murphy, 1998; Department of Health and Family Services, 2000; Department of Public Instruction, 2000). The 1999 Youth Risk Behavior Survey, given to over 1,000 students, grades 9 through 12, in 46 Wisconsin public high schools revealed:
  - More than a quarter of high school students reported being depressed in the past year.
  - More than a quarter of high school students seriously considered committing suicide in the past year.
  - Female students are more likely than male students to have depression and to consider and attempt suicide (Department of Public Instruction, 2000).

Research has shown that 90 percent of people who kill themselves have depression or another diagnosable mental or substance abuse disorder. In 1996, the most recent year for which statistics are available, nearly 31,000 people died from suicide in the U.S. This number is more than 50 percent higher than the number of homicide deaths in the same year. In addition, it is estimated that there were approximately 500,000 people who required emergency room treatment as a result of an attempted suicide. It is said that six lives are greatly affected by each suicide, thus adding 186,000 additional people affected by suicide each year.

Economic Burden

Modern treatments for mental disorders are highly effective, with a variety of treatment options available for most disorders. There is no "one size fits all" treatment. A diverse array of treatment settings exist and a person may have the option of selecting a setting based on health care coverage, the clinical needs associated with a particular type or stage of illness, and personal preference.

Despite the effectiveness of treatment and the many paths to obtaining treatment of choice, the majority of persons with mental disorders do not receive mental health services.

- Forty percent of all Americans who have a severe mental illness do not seek treatment from either general medical or specialty mental health providers.
- Only 25 percent of persons with a mental disorder obtain help for their illness in the health care system.

In comparison, 60 to 80 percent of persons with heart disease seek and receive care. Yet, studies show that the success rate for treatment of depression is higher than the success rate of treatment for heart disease. (National Center for Health Statistics, 1992)

The direct costs of diagnosing and treating mental disorders totaled approximately $69 billion in 1996 (Department of Health and Human Services, 1999). The indirect costs of mental illnesses were estimated at $78.6 billion (Rice & Miller, 1996). These costs can include lost productivity at the workplace, school, and home due to disability or premature death. Criminal justice interaction costs, and property loss contributed another $6 billion to the total cost of mental illness. Beyond direct and indirect costs, there are additional costs of pain, suffering, and the disruption of the lives of all affected and the lives of those around them. A person suffering a mental illness is often unable to fulfill the daily responsibilities of being a spouse, partner, or parent.

Important Disparities

Mental illnesses affect persons of all ages. However, there are some marked differences in how mental illnesses manifest themselves and how they are prevented, diagnosed, and treated by gender, racial and ethnic group, and age (Department of Health and Human Services, 1999).

Gender

Differences between men and women are evident in the number of cases of particular mental disorders. For example, major depression affects approximately twice as many women as men (Weissman & Klerman, 1992). Women who are poor, have little formal schooling, and are on welfare or are unemployed are more likely to experience depression than women in the general population. Risk for engaging in suicidal behaviors also differs by gender. A history of physical or sexual abuse appears to be a serious risk factor for suicide attempts in both women and men (Van der Kolk & Perry, 1991; National Center for Health Statistics, 1992). Women attempt suicide more often than men, but the risk among men of completed suicide is on average 4.5 times higher than that for women (Centers for Disease Control and Prevention, 1999).

Race

Racial and ethnic minorities are generally considered to be underserved by the mental health services system.

Age

Specific mental disorders affect men and women at particular stages of life. Schizophrenia occurs more often in young men than in women and usually has its onset in the late teen and early adult years. Eating disorders, affecting up to 2 percent of the population, arise predominantly but not exclusively in adolescent and young adult women (90 percent of all cases). The median age is 17 years (McIntosh, Pearson, & Lebowitz, 1997). Eating disorders often persist into adulthood and have some of the highest death rates of any mental disorder.

Mental disorders, are as common later in life as they are at other ages, although rates for specific mental disorders vary depending on age and gender (Weissman, Bruce, Leaf, Florio, & Holzer, 1991). In any single year, the number of cases of major depression in persons aged 65 and older is approximately 1 percent. This is about half the rate among persons aged 45 to 64 years (Koenig, & Blazer, 1992). Depression rates are much higher, however, among older Americans who experience a physical health problem such as hospitalization for hip fractures or heart disease (National Institutes of Health, 1992). Depression rates for older persons in nursing homes range from 15 to 25 percent higher than for depression rates for older persons in general (Department of Public Instruction, 2000).

Children

Preliminary studies suggest that at any given time at least one in five children and adolescents may have a behavioral, emotional, or mental disorder. At least 1 in 20 or as many as 3 million young people may have a severe emotional disturbance that severely disrupts his or her ability to function in home, school, or community (Department of Health and Human Services, 1999).

Substance abuse

According to the U.S. Co-morbidity Survey released in 1997, an estimated 10 million Americans have both mental health and substance abuse disorders. Research data supports combined treatment, although there are substantial gaps between what research recommends and what typically is available in communities.

Homelessness

Nationwide estimates have placed the number of homeless persons at as many as 600,000 on any given night. Approximately one-third of these homeless adults has a serious mental illness. Of this one-third, as many as fifty percent also have a substance use disorder. New approaches developed over the past ten years provide ways to lower the number of persons who are homeless and have a serious mental illness. With the use of persistent outreach and engagement strategies, service providers are helping adults with

a serious mental illness connect with mainstream mental health treatment systems.

Incarcerated

Nationwide, nearly 700,000 persons with active symptoms of a serious mental illness are admitted to jails each year. They make up a significant percentage of the jail population. Persons with serious mental illness are overrepresented in jail and prison populations; many do not receive treatment. Some people with mental illness who are arrested for nonviolent crimes could be better served if diverted from the jail system to a community-based mental health treatment program.

Wisconsin's Vision to Promote Mental Health

Wisconsin has been in the forefront of providing some of the most innovative mental health services in the nation. The challenge facing us today is to approach mental health and the treatment of mental illness as we do other health conditions. The Governor's Blue Ribbon Commission on Mental Health Final Report and the Surgeon General's Report on Mental Health provide the lead for Wisconsin's Public Health Improvement Plan for 2010. The State Public Health Plan recognizes mental health and mental disorders as a public health priority. The recommendations in the Surgeon General's Report may serve as a guide for the future:

- Continue to build the science base
- Overcome stigma
- Promote recovery for persons with mental illnesses
- Improve public awareness of effective treatment
- Promote prevention and early intervention
- Ensure the supply of mental health services and providers
- Ensure the delivery of state-of-the-art treatments
- Tailor treatment to age, gender, race, and culture
- Facilitate entry into treatment
- Reduce financial barriers to treatment
- Increase consumer and family involvement
- Translate research into practice

The misunderstanding of mental illness and associated blame and stigmatization prevent people with mental illness from seeking professional help. Many are unnecessarily incapacitated for weeks or months because their illness remains untreated.

By including mental health and mental disorders in *Healthiest Wisconsin 2010*, Wisconsin will establish mental health as a cornerstone of health. This will place mental illness treatment in the mainstream of health care and ensure consumers of mental health services access to respectful, evidenced-based, and reimbursable care.

KEY MENTAL HEALTH AND MENTAL DISORDER ISSUES		
Issue	**Description**	**Example(s)**
Promote public awareness that mental health is inseparable from physical health	Surgeon General David Satcher states in the Report on Mental Health that "mental health and mental illness are not polar opposites but may be thought of as points on a continuum. Considering health and illness in this manner helps one appreciate that neither state exists in pure isolation from the other. The two are inseparable" (Department of Health and Human Services, 1999). The Surgeon General's Report on Mental Health and Suicide notes that it is critical to increase the public's awareness that mental health is an integral part of overall health care.	The misunderstanding of mental illness with associated blame and stigmatization will prevent many persons with mental illness from seeking professional help. Many people are unnecessarily incapacitated for weeks or months because their illness is unrecognized and untreated.
Eliminate stigma	Stigma creates barriers to providing and receiving competent and effective mental health treatment and can lead to inappropriate treatment, unemployment, and homelessness. Evidence that mental disorders are legitimate and highly responsive to appropriate treatment promises to be a potent antidote to stigma. The elimination of stigma associated with mental disorders will in turn encourage more individuals to seek needed mental health care.	Despite effectiveness of available treatments, only 25 percent of persons with a mental disorder obtain help for their illness in the health care system. In comparison, 60 to 80 percent of persons with heart disease seek and receive care. Mental health parity would eliminate discrimination and stigma against persons with serious and persistent mental illness and enable them to receive treatment for insurance purposes with benefits that are not capped and cut off.
Improve resiliency through prevention and early intervention	*Resiliency* is an unusual or marked capacity to recover from or successfully cope with significant stresses of both internal and external origin. It involves the interaction of risk factors including individual vulnerability and protective factors. Protective factors can reside with the individual or the family, community or institution, and are biological or psychosocial in nature. Biologically based disorders such as schizophrenia and affective disorders cannot be prevented at this time, but early intervention can be instrumental in modifying their course. Promising universal and targeted preventive interventions, implemented according to scientific recommendations, have great potential to reduce the risk for mental disorders, reduce comorbidity, and reduce the burden of suffering in vulnerable populations in all age groups. In addition, social and behavioral research is beginning to explore resilience to identify strengths that may promote health and healing.	Prevention and early intervention services are vital to our communities because they can link at-risk individuals and families to services and programs. Children who have parents with a mental illness are at greater risk of developing a mental illness than those who do not. Through prevention and early intervention programs for these children and their families, a reduction can be made in reducing incidence, delaying onset, reducing duration or lessening of the severity of a mental disorder or mental illness. Prevention scientists have documented and rigorously tested successful preventive interventions against depression, conduct disorder, post traumatic stress disorder and other adverse outcomes in high-risk groups of children.

CONTINUED... next page

KEY MENTAL HEALTH AND MENTAL DISORDER ISSUES		
Issue	**Description**	**Example(s)**
Expand and promote education on effective mental health treatment and recovery	Progress in science and an emphasis on translating new knowledge into clinical applications can strengthen opportunities for future clinical and service system innovations. Research-based treatments afford an unprecedented opportunity to achieve a major reduction in the burden of disease associated with mental illness. With enhancements of clinical services, medications, and service systems, recovery can be a measurable outcome of mental health interventions. When applied with consistency, preventive interventions can decrease risk of onset or delay onset of a particular disorder.	There exist a constellation of treatments of documented efficacy for most mental disorders. Research is being translated into practice. Appropriate treatment can alleviate, if not cure, the symptoms and associated disability of mental illness. With proper treatment along with consumer and peer support, the majority of people with mental illness can recover and return to productive lives. Studies show that the most promising way to prevent suicide is through the early recognition and treatment of mental disorders. All health care and human service professionals, not just mental health professionals, have an obligation to be informed of mental health treatment and resources in their communities. Individuals need support and encouragement to seek out help from any source in which they have confidence.
Facilitate entry into treatment	Health care in the U.S. continues to undergo fundamental structural changes that require creative and flexible responses from service providers, administrators, researchers, and policymakers. Two prominent forces of change are Federal and State efforts to improve access to health care, including mental health care, and the rapid growth and impact of managed care. Mental health parity laws have been passed in 32 states. State parity laws have had a small effect on premiums. Some cost estimates assumed a cost shift from the public to the private sector. This has not occurred. Federal employees have full mental health insurance parity in their health care coverage. Wisconsin has not passed mental health and substance abuse parity legislation Public and private agencies have an obligation to facilitate access/entry into appropriate mental health treatment through multiple "portals of entry" that exist: primary health care, schools, criminal justice, and the child welfare system. To enhance adherence to treatment, agencies must provide services responsive to the needs and preferences of service users and their families.	All health insurers need to disseminate clear information about mental health benefits Parity or mental health parity refers generally to insurance coverage for mental health services that includes the same benefits and restrictions as coverage for other health services. An alarming number of children and adults with mental illness and substance abuse end up in the criminal justice system. Untreated mental illness has a direct relationship to arrest, incarceration, increased substance abuse, out of home placements for juveniles, and homelessness. The need for early identification, appropriate crisis response, and the need to provide access for mental health treatment are vital to ensure that our jails and prisons do not become the mental health agencies of last resort. Managed care, shrinking state and local budgets, lack of resources and knowledge about mental illness and the mental health system by law enforcement, corrections, attorneys, and the judiciary system provide an explanation as to the default status of jails as the largest providers of mental health treatment in some jurisdictions.

REFERENCES

Centers for Disease Control and Prevention. Retrieved May 25, 1999. www.cdc.gov/ncipc/osp/mortdata.htm

Koening, H.G., & Blazer, D.G. (1992). Mood disorders and suicide. In J.E. Birren;

R.B. Sloane; & Cohen, G.D. (Eds*). Handbook of Mental Health and Aging,* 2ND ed. (pp.379-407). San Diego, CA: Academic Press.

Kessler, R.C., McGonagle, K.A., Zhao, S. et al. (1994). Lifetime and 12 Month Prevalence of

DSM-III-R Psychiatric Disorders in the U.S. *Archives of General Psychiatry,* 51:8-19

McIntosh, J.L., Pearson, J.L., & Lebowitz, B.D. (1997). Mental Disorders of Elderly Men. In: Kosberg, J.I. & Kay, L.W. (Eds). *Elderly Men: Special Problems and Professional Challenges.* (pp.193-215). New York, NY: Springer Publishing Company.

Murray, C.J.L. & Lopez, A.D. (1996). *The Global Burden of Disease,* Cambridge, MA: Howard University Press.

National Center for Health Statistics, Centers for Disease Control and Prevention. (1992). *Prevalence of Chronic Circulatory Conditions: Vital and Health Statistics, Series.* No.19(94). DHEW Pub. No. NRA75-1521. Hyattsville, MD: NCHS.

National Institutes of Health Consensus Development Panel. (1992). Depression in Late Life. Diagnosis and Treatment of Depression in Late Life. *Journal of the American Medical Association*, 268: 1018-1024, 1992

Peters K.D., Kochanek, K.D. & Murphy, S.L. (1998). *Deaths: Final Data for 1996.* In: CDC. National Vital Statistic Reports, 47(9). Hyattsville, MD: National Center for Health Statistics.

Regier, D.A., Narrow, W. & Rae, D.S. (1999). *Unpublished NIMH Analyses.*

Rice, D.P. & Miller, L.S. (1996). The Economic Burden of Schizophrenia: Conceptual and Methodological Issues and Cost Estimates. In M. Moscarelli, A. Rupp & N. Sartorious (Eds.), *Handbook of Mental Health Economics and Health Policy.* Vol. I: Schizophrenia (pp. 321-324). New York: John Wiley and Sons.

Robins, L.N., Locke, B.Z. & Regier, D.A. (1991). An Overview of Psychiatric Disorders in America. In: Robins, L.N. & Regier, D.A. (Eds*.) Psychiatric Disorders in America: The Epidemiologic Catchment Area Study*. New York, N.Y.: FREE Press.

Shaffer, D., Fisher, D., Dulcan, M.K. et al. (1996). The NIMH Diagnostic Interview Schedule for Children. Version, 2.3 (DSIC 2.3). Description, Acceptability, Prevalence Rates and Performance in the MECA study. Methods for the Epidemiology of Child and Adolescent Mental Disorder Study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 24:875.877.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration and National Institutes of Health. (1999). *Mental Health: A Report of the Surgeon General*. Washington, D.C.: Author.

Van der Kolk, B.A. & Perry, J.L. (1991). Childhood Origins of Self Destructive Behavior. *American Journal of Psychiatry,* 148:1665-1671.

Weissman, M.M. & Klerman, J.K. (1992). Depression: Current Understanding and Changing Trends. *Annual Review of Public Health,* 13:3190-339.

Weissman, M.M., Bruce, M.L., Leaf, P.J., Florio, L.P., & Holzer, C.E. (1991). Affective Disorders. In Robbins, L.N. & Regier, D.A. (Eds). *Psychiatric Disorders in America,* (pp. 53-80). New York, NY: Free Press.

Wisconsin Department of Health and Family Services, Division of Health Care Financing, Bureau of Health Information. (2000). *Wisconsin Deaths 1998.* Madison, WI: Author.

Wisconsin Department of Public Instruction, University of Wisconsin Survey Research Laboratory. (2000). *Wisconsin Youth Risk Behavior Survey.* Madison, WI: Author.

Health Priority: Overweight, Obesity and Lack of Physical Activity

Definition

People are considered overweight or obese based on their Body Mass Index (BMI). BMI is a mathematical formula that is a ratio of weight and height correlated with body fat (kg/m^2). BMI is a better predictor of disease risk than body weight alone. Risk of mortality from many chronic conditions increase with a BMI over 25.0(National Institutes of Health, 1998).

Definitions from the NIH National Health, Lung and Blood Institute (1998) show the following: a BMI between 18.5 and 24.9 is considered "normal weight;" overweight is having a BMI of 25.0 to 29.9. Three separate classes of obesity range from BMIs of 30.0 to 40.0.

Level of activity, like obesity, occurs along a continuum. As a guideline, the 1996 Surgeon General's Report on Physical Activity and Health (U.S. Department of Health and Human Services, 1996) recommends each person accumulate 30 minutes of moderately intensive physical activity for five or more days of the week, minimally 150 minutes a week of activity.

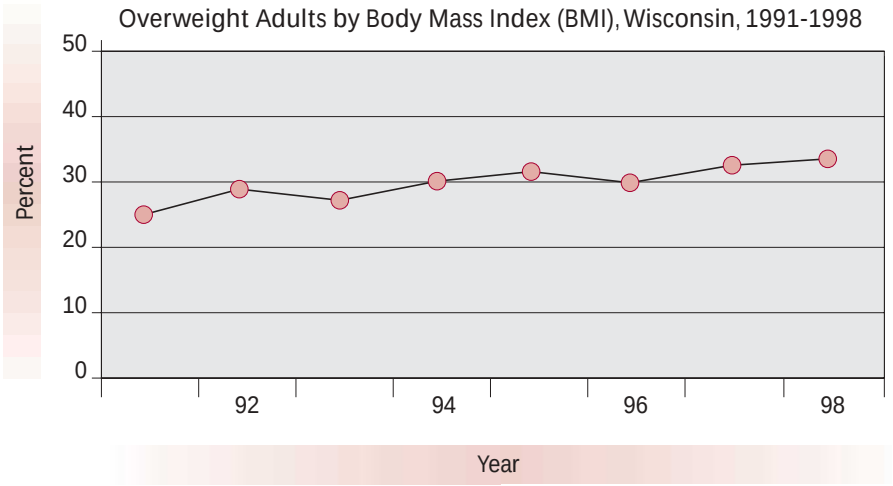
Impact

Overweight and obesity are common health conditions and their prevalence is increasing nationally and in Wisconsin. Excess weight is associated with an increased incidence of many chronic conditions, such as cardiovascular disease, type 2 diabetes mellitus, hypertension, stroke, dyslipedemia, osteoarthritis, and selected cancers (Must, Spodano, Coakley, Field, Colditz, & Dietz, 1999).

Obesity has increased in every state, in both sexes, and across all age groups, races, and educational attainments. Recent estimates suggest that one in two adults in the United States is overweight or obese, an increase in more than 25 percent in 30 years (Mokdad, Serdula, Dietz, Bowman, Marks, Koplan, 1999). In Wisconsin, based on measures from the Behavioral Risk Factor Survey, prevalence of overweight has increased steadily over the past decade from 23 percent in 1989 to 34 percent in 1998 (Wisconsin Department of Health and Family Services, Bureau of Health Information, 1998).

Important Disparities

Excess weight is a risk factor that affects all the people of Wisconsin. Overall, 36 percent of men and 30 percent of women are overweight. Prevalence estimates of overweight among specific population groups are as follows: whites 33 percent, African Americans



Source: DHFS, WI Behavioral Risk Factor Survey, 1991–1998.

45 percent, and Hispanic/Latinos 40 percent (Department of Health and Family Services, 1998). A Wisconsin American Indian study (Peterson, Remington, Kuykendall, Kanarak, Diedrich, & Anderson, 1992) found that over 50 percent of respondents were obese.

In Wisconsin, children enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) had the following rates of being overweight: American Indian (15 percent); Hispanic/Latino (11 percent); Asian (12 percent); White (7 percent); and African-American (6 percent) (Aronson, 2000).

KEY OVERWEIGHT/OBESITY/ACTIVITY ISSUES

Issue	Description	Example(s)
Understanding the social and biological factors that affect diet and exercise	At the most fundamental level, the issue of excess weight is simple: too many calories taken in compared to the number of calories expended. At that same level, the prescription for reducing weight sounds simple: eat less and be more active. But the underlying causes of the imbalance between calories and activity make that prescription too simplistic. Our current eating and activity patterns are rooted in a complex mix of social changes over the past decades.	Some of the social changes affected increased weight include the increased availability of food, especially fast and processed foods. At the same time, children and adults watch more television, neighborhoods lack sidewalks for walking, fewer jobs involve physical labor, and walking and bicycling have been replaced by automobile travel (Koplan & Dietz, 1999).
Getting people to be more active	The health benefits of regular physical activity (e.g., walking, doing yard work, and walking up the stairs) are numerous. Regular physical activity may prevent obesity, improve obesity-associated diseases, reduce mortality, and may build and maintain healthy bones, muscles, and joints. There is a growing emphasis on increasing the overall level of activity in people's lives, not just focusing on exercise. Combining a lot of simple changes, like parking further away or taking stairs instead of elevators, can make a big difference.	In 1998, the Behavioral Risk Factor Survey (BHI) indicated that adults engaged in the following physical activity patterns: vigorous (13 percent), regular (32 percent), irregular (31 percent), and inactive (23 percent). The Centers for Disease Control and Prevention (1999) estimate that 35 percent of the coronary heart disease among people who lead a sedentary lifestyle could have been prevented by increasing physical activity.

REFERENCES

Aronson, R. (2000). A work in progress. *Wisconsin Medical Journal*. 99(2):18-24.

Centers for Disease Control and Prevention. (1999). *An Ounce of Prevention…What are the returns?* (2nd ed.). Atlanta, GA: Author.

Koplan, J. & Dietz, W. (1999). Caloric Imbalance and Public Health Policy. *Journal of the American Medical Association*. 282(16): 1579-1581.

Mokdad, A., Serdula, M., Dietz, W., Bowman, B., Marks, J. & Koplan, J. (1999). The Spread of the Obesity Epidemic in the United States, 1991-1998. *Journal of the American Medical Association*. 282(16): 1519-1522.

Must, A., Spodano, J., Coakley, E., Field, A., Colditz, G. & Dietz, W. (1999). The Disease Burden Associated with Overweight and Obesity. *Journal of the American Medical Association.*

282(16): 1523-1529.

National Institute of Health. (1998). National Heart, Lung and Blood Institute- Obesity Task Force Clinical Guidelines on Weight and Obesity in Adults- The Evidence Report. *Obesity Research.* 6 (supplement): 515-2095.

Peterson, D., Remington P., Kuykendall, M., Kanarek, M., Diedrich J. & Anderson H. (1992). Behavioral Risk Factors of Chippewa American Indians Living on Wisconsin Reservations. *Public Health Reports*. 109(6): 820-823.

U.S. Department of Health and Human Services. (1996). *Physical Activity and Health: A Report of the Surgeon General.* (DHHS Publication No. S/N 017-023-00196-5). Atlanta, GA : Author.

Wisconsin Department of Health and Family Services, Division of Health Care Financing, Bureau of Health Information. (1989-1999). *Wisconsin Behavioral Risk Factor Survey*. Madison, WI: Author.

Health Priority: Social and Economic Factors that Influence Health

Definition

The direct relationship between the socioeconomic position of a population and its health is well established. Research studies have clearly documented that people who are socioeconomically better off do better on most measures of health status. These differences in morbidity and mortality between socioeconomic groups have been observed in many studies and constitute one of the most consistent epidemiological research findings (Antonovsky, 1967; Kitagawa & Hauser, 1973; Backlund, Sorlie & Johnson, 1996).

Impact

Financial struggles, acute and chronic stress, overburdened or disrupted social supports, and toxic environmental exposures—all affect low income people more intensely. These conditions are directly associated with higher rates of illness and premature death throughout a person's life span (Lantz, et al., 1998; Geronimus, 2000).

On the other hand, strong, inclusive, and interactive communities are a powerful force in counteracting these factors and in promoting physical, mental, emotional, and spiritual health. Healthy communities engage and challenge people to discover and contribute their unique strengths. Communities that support healthy behaviors and meaningful human relationships are more likely to be healthy across socioeconomic lines. Such communities can equip individuals and families with tools that enable them to build and develop resiliency—the capacity to bounce back in spite of stressful circumstances and the power to recover, heal, grow, and succeed in the midst of change and adversity.

Research has consistently shown that a key determinant of good health is the extent to which a person feels affirmed, nurtured, connected to other people, and supported by them. Social connectedness—the extent to which people engage in caring human relationships, social support networks, and a sense of community—provides benefits that are reflected in stronger resistance to disease (Cohen, Doyle, & Skoner, 1997) and greater protection from the intense stresses of poverty and other cultural inequities (Runyan et al., 1998).

Social and economic factors affecting health are interwoven with and influenced by an array of other basic elements that are essential to good health. These include family structure, the educational system, gender, race, ethnicity, and culture. In the broader context, each factor plays a pivotal role that either helps to connect or to isolate people from each other and the larger community.

As with poverty, a low level of educational attainment is strongly linked to a wide range of social and behavioral risk factors and adverse health outcomes. Education and health interact with each other almost inseparably. Lower educational levels can be linked to poorer health; poor health makes it less likely that someone can achieve maximum educational success. Health has a great impact on the ability of children to succeed in school and on adults to succeed in the workplace.

Educational level also affects people's ability to make informed decisions about their own health. Those with a better education can often understand better how the complex health care system works. Those with a better education may know how to use the system to best benefit both themselves and their families (Institute of Medicine, 1999).

This social and economic priority has major implications for Wisconsin's public health system. It underlines the importance of organizing the public health system in ways that will change the larger environmental context, rather than solely relying on one-to-one interventions (Lynch & Kaplan, 2000).

For Wisconsin to successfully address these social and economic factors, people must be given, regardless of socioeconomic status, a voice in the systems and forces that affect their health. This calls for a view of health that includes mental, emotional, social, spiritual, and community well being as well as physical health and safety. This view of health lies not only in the prevention and reduction of risk factors, but also in fostering the

capacity for all people to reach their potential as individuals, as members of families, and as members of their community.

We are engaged in a transformation in the practice of public health, leading to structures that implement inclusive processes within the context of a broadened view of health. We need to engage new non-traditional stakeholders in this quest. We need to make special efforts to welcome and include individuals, families and community leaders in designing, implementing, and evaluating public health and health care systems and practices, especially if we are going to have a permanent impact on the social and economic factors that affect health.

KEY SOCIAL AND ECONOMIC ISSUES

Issue	Description	Example(s)
Persistence of health status differences between social classes	Families at the lowest end of the income spectrum, with incomes at or below the federal poverty level ($17,050 for a family of four), have significantly greater burdens of illness and negative disease outcomes (Institute of Medicine, 1999). While illness can lead to poverty, the reverse is more often true: that is, illness is more often associated with a wide range of social and behavioral risk factors for disease and poor health outcomes (Institute of Medicine, 1999).	The pathways between poverty and ill health are not clearly understood. Nonetheless, poor nutritional status, poor housing, low educational attainment, reduced access to health care, and residence in a community with high rates of violence and crime must be factored in (Institute of Medicine, 1999). Poverty and ill health are likely to include poor nutritional status, substandard housing, lower levels of educational attainment, residence in neighborhoods with higher rates of crime and violence, and reduced access to and use of health services (Institute of Medicine, 1999).
Infant Mortality	Infant mortality is a powerful indicator for assessing the health of a community, and the extent to which society invests in its children. Disparities in infant mortality among racial and ethnic groups in the United States have been longstanding and persisted over time. They require a clearer and deeper understanding of the root factors contributing to them and a willingness to try new approaches that address these factors.	In Wisconsin, infant mortality has declined steadily since 1980. The 1998 overall Wisconsin infant mortality rate was 7.2 deaths per 1,000 live births compared to 10.3 in 1980. However, despite successes in reducing infant mortality overall, African American infant mortality rates remained between about 13 and 20 infant deaths per 1,000 live births between 1980 and 1998. In comparison, during that same period, the infant mortality for white children dropped steadily, from 9.3 deaths to 5.6 deaths per 1000 live births in 1998 (Kvale et al., 2000; Aronson, 2000; Guyer, Freedman, Strobino & Sondik, 2000).
Resiliency	One important public health strategy for decreasing the effects of poverty taps into the capacity of people to be resilient. Resiliency refers to the capacity of individuals, families, neighborhoods, and communities to "bounce back" in spite of stressful circumstances. Resiliency builds on strengths within the individual, family, community, and society (Aronson, 2000).	Historically, public health services have had a focus on deficits, risks, pathology, and disease. When public health engages communities in a dialogue framed within the concept of resiliency, citizens openly discuss the pain caused by systemic and long standing biases resulting from discrimination, class, and gender inequality, layered on top of the burdens of living in financial poverty. In addition, socially impoverished and violent environments often cut across socioeconomic lines and affect all people. The challenge for the public health system is to honor and respect the dignity and skill with which most individuals and families survive and thrive, in spite of often unrelenting stress.

Important Disparities

Social and economic factors contribute to long-standing disparities in the health status of the population. They are also closely linked to the disparities in the health status of people of diverse racial, ethnic, and cultural backgrounds. The extent to which social and economic status is associated with race, ethnicity, and culture plays a key role in determining the health of various populations and the significant disparities between them. Thus, understanding the roots of disparities and their association with socioeconomic conditions requires special attention and is central to the design of strategies to reduce and eliminate such disparities.

In Wisconsin, high rates of poverty exist within African American, Hispanic/Latino, American Indian, and Asian populations. Socioeconomic factors have an impact on racial and ethnic groups by limiting their access to social, medical, and public health resources. Despite an overall decrease in mortality rates for all races, an examination of education and income-level shows that health disparities are rising (Kvale, Cronk, Glysch, & Aronson, 2000; Aronson, 2000).

REFERENCES

Antonovsky, A. (1967). Social Class, Life Expectancy, and Overall Mortality. *Milbank Memorial Fund Quarterly*. 45, 31-73.

Aronson, R. A. (2000). Transforming MCH to Enhance the Health and Safety of Children, Families, and Communities in Wisconsin: A work in progress. *Wisconsin Medical Journal*. 99, 18-24.

Backlund, E., Sorlie, P.D., & Johnson, N.J. (1996). The Shape of the Relationship Between Income and Mortality in the United States: Evidence from the National Longitudinal Study. *Annals of Epidemiology.* 6, 12-20.

Cohen, S., Doyle, W. J., & Skoner, D. P. (1997). Social Ties and Susceptibility to the Common Cold. *Journal of the American Medical Association.* 277, 1940-44.

Geronimus, A.T. (2000). To Mitigate, Resist, or Undo: Addressing Structural Influences on the Health of Urban Populations. *American Journal of Public Health.* 90, 867-872.

Guyer, B., Freedman, M.A., Strobino, D. M., & Sondik E. J. (2000). Annual Summary of Vital Statistics: Trends in the Health of Americans During the 20th Century. *Pediatrics.* 106, 1307-1313.

Institute of Medicine. (1999). *Leading Health Indicators for Healthy People 2010: Final Report.* Washington, DC: National Academy Press.

Kitagawa, E.M., & Hauser, P.M. (1973*). Differential Mortality in the United States: A Study in Socioeconomic Epidemiology.* Cambridge, Mass.: Harvard University Press.

Kvale, K., Cronk, C., Glysch, R., & Aronson, R. (2000). Racial Disparities in African American and White Infant Mortality United States and Wisconsin, 1980 to 1998. *Wisconsin Medical Journal.* 99, 52-54.

Lantz, P. M., House J.S., Lepowski J.M., Williams D.R., Mero R.P., & Chen J. (1998). Socioeconomic Factors, Health Behaviors, and Mortality: Results from a Nationally Representative Prospective Study of US Adults. *Journal of the American Medical Association*, 279, 1703-1708.

Lynch, J., & Kaplan, G. (2000). Socioeconomic Position. In L. Berkman, & I. Kawachi. (Eds.). *Social Epidemiology*, (pp.13-35). Oxford: Oxford University Press.

Runyan, D.K., Hunter, W.M., Socolar, R.S., Amaya-Jackson, L., English, D., & Landsverk, J. (1998). Children Who Prosper in Unfavorable Environments: The Relationship to Social Capital. *Pediatrics*, 101,12-18.

Health Priority: Tobacco Use and Exposure

Definition

Tobacco use and exposure is the active or passive introduction into the human body of toxins found in tobacco products. Tobacco use and exposure is a complex web of social influences, physiological addiction, and marketing and promotion of tobacco products. Effective tobacco prevention and control efforts reduce youth initiation, promote cessation, eliminate environmental tobacco smoke, and address the disparate impact of tobacco on various populations. Comprehensive efforts include counter-marketing, community interventions, legislation and policy change, and evaluation and monitoring.

Impact

Tobacco use is the single most preventable cause of disease and death in Wisconsin and the U.S. More deaths can be attributable to tobacco use, than to alcohol, cocaine, heroin, homicide, suicide, motor vehicle crashes, and HIV/AIDS combined. In 1997, approximately 8,000 Wisconsin deaths were related to tobacco use. Leading tobacco-related injuries and illnesses are cardiovascular disease, lung cancer, other selected cancers, respiratory diseases, perinatal conditions, and fire-related burns (American Cancer Society, 1998).

- Of all deaths, 17 percent were due to smoking (American Cancer Society, 1998).
- Direct health care costs of treating smoking-related illnesses are estimated to total $1 billion a year in Wisconsin (American Cancer Society, 1998).
- Wisconsin youth tobacco use is an important priority because most adult smokers initiate smoking before they are 18 years old (U.S. Department of Health and Human Services, 1994).

Evidence continues to document the health hazards of environmental tobacco smoke to non-smokers. Efforts to protect people in public spaces and occupational settings from environmental tobacco smoke exposure is of national significance.

Economic Burden

The use of tobacco creates a significant drag on the Wisconsin economy. In 1993, the cost of medical treatment for smoking-related illnesses in Wisconsin exceeded $1 billion (Berkeley Economic Research Associates, 1997). Wisconsin employers bear the burden in higher health insurance premiums. Wisconsin taxpayers pay the price in increased public health spending. Tobacco use cost Wisconsin's Medicaid system almost $200 million in 1993 (Berkeley Economic Research Associates, 1997). Wisconsin's relatively high rate of tobacco use hurts the state economy in other ways. Beyond health insurance, tobacco use drives up employers' disability costs and property insurance premiums due to increased fire risk. Tobacco use "saps" workforce productivity through time lost to cigarette breaks and sick days (American Cancer Society, 1993). Smokers are absent from work 50 percent more often than non-smokers (U.S. Department of the Treasury, 1998). These factors put the state at a competitive disadvantage for attracting new employers and retaining existing ones.

Important Disparities

Women who smoke during pregnancy often have babies with increased rates of low birth weight. About 18 percent of Wisconsin women compared to 14 percent of U.S. women who gave birth in 1994-1996 smoked cigarettes. Smoking rates are higher for women who are young, have low educational attainment and are African-American or American Indian (Kvale, Glysch, Gothard, Aakko & Remington, 2000).

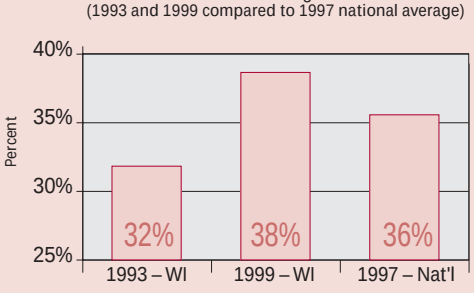
Newborn babies and children are especially vulnerable to environmental tobacco smoke exposure. They often are at risk for respiratory and middle ear infections. Tobacco smoke is an asthma trigger, often evoking onset of asthma symptoms.

Selected adult populations have higher than average smoking rates. They bear a greater burden of tobacco-related morbidity and mortality. These populations include:

- Persons with lower educational attainment
- Blue-collar workers

- American Indians
- Hispanic/Latinos
- African-Americans
- Southeast Asians
- Reproductive age women.

KEY TOBACCO USE ISSUES

Issue	Description	Example(s)
Prevention	A growing body of research shows that tobacco prevention and control activities are having a significant impact.	A large and aggressive tobacco control program is associated with declines in both lung cancer and heart disease mortality in California (Fichtenberg & Glantz, 1999; Department of Health and Human Services, 2000).
Disparities	Selected adult populations have higher than average smoking rates. These populations include: persons with lower educational attainment; blue-collar workers; American Indians; Hispanic/Latinos; African-Americans; Southeast Asians; and reproductive age women.	The Behavioral Risk Factor Surveys indicates that there has been little change in adult smoking rates from 1990 -1999. The current smoking prevalence is 24 percent. (Department of Health and Family Services, 1999). Wisconsin's per capita sales of cigarettes has declined from 94.0 in 1990 to 84.4 in 1999. Adults who have lower household income and those with lower education attainment have the higher smoking rates (Wisconsin Tobacco Facts, 2000).
Environmental Tobacco Smoke	Evidence continues to document the health hazards of environmental tobacco smoke to nonsmokers. There are increased efforts to protect people in public spaces and occupational settings from environmental tobacco smoke exposure.	Eight Wisconsin communities have established smoke-free restaurant ordinances as of 2001. Twenty-eight percent of persons who reported that they or someone else smoked in their home in the past 30 days (Wisconsin Tobacco Facts, 2000). Children live in approximately one third (32 percent) of households that allowed smoking inside the home (Wisconsin Tobacco Facts, 2000).
Youth	Twelve percent of middle school and 33 percent of high school students are current cigarette smokers (smoked at least one day out of the previous thirty days). Overall, 46 percent of middle school and 69 percent of high school students have tried some form of tobacco. The current rate of smoking increases more rapidly among middle school students (3 percent in grade 6 to 20 percent in grade 8) than high school students (26 percent in grade 9 to 39 percent in grade 12) (Department of Health and Family Services, 2000)	Cigarette smoking among Wisconsin high school students have fallen from 38 percent (Wisconsin Youth Risk Behavior Survey, 1999) to 33 percent in 2000 (Department of Health and Family Services, 2000). Tobacco use in high school (1993 and 1999 compared to 1997 national average) 

REFERENCES

American Cancer Society. (1993). *Economic Impact of Smoking in the Workplace.*

American Cancer Society, Wisconsin Division. (1998). *The Burden of Tobacco in Wisconsin–1997.*

Berkeley Economic Research Associates. (1997). *Smoking Attributable to Medical Care Costs: Models and Results.* Berkeley, CA.

Fichtenberg C., & Glantz S. (1999). Association of the California Tobacco Control Program with Declines in Cigarette Consumption and Mortality From Heart Disease. *New England Journal of Medicine.* 343(24):1772-1777.

Kvale K., Glysch R.L., Gothard ,M., Aakko E., Remington P.L. (2000). Trends in Smoking During Pregnancy, Wisconsin, 1990-1996. *Wisconsin Medical Journal.* 99(2): 63-67.

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. 1994. "Preventing tobacco use among young people: A report of the Surgeon General." Washington, D.C.

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. December 2000. Declines in Lung Cancer Rates – California, 1988-1997. *Morbidity and Mortality Weekly Reports* (MMWR) 49(47). 1066-1069.

U. S. Department of the Treasury. (1998). *The Economic Costs of Smoking in the United States and the Benefits of Comprehensive Tobacco Legislation.* Washington, D.C.: Author.

Wisconsin Department of Health and Family Services. (1995-99). *Wisconsin Behavior Risk Factor Survey.* Madison, WI: Author.

Wisconsin Department of Public Instruction. (1997-1999*). Wisconsin Youth Risk Behavior Survey*. Madison, WI: Author.

Wisconsin Department of Health and Family Services. (2000). *Wisconsin Youth Tobacco Survey*. Madison, WI: Author.

Wisconsin Tobacco Facts. (2000).

SECTION FIVE:

THE Methodology USED TO Determine THE Health Priorities

Introduction

The mission of the public health system is to protect and promote the health of the people of Wisconsin. Accomplishing this mission requires that the public health system work to reduce the occurrence and minimize the impact of disease and injury that affect the people of this state. This is a complex and difficult task. Each year thousands of different adverse health conditions occur in Wisconsin affecting millions of persons. Indeed, it is likely that in a typical year, disease or injury will, to some degree, affect nearly all of the five million Wisconsin citizens. The impact of these conditions on individuals varies greatly. Some conditions are mild and have little or no impact on the day-to-day functioning of affected individuals; some conditions are life altering and life threatening. The number of persons affected by different conditions also varies widely. Some are very rare, and some affect tens of thousands of persons in Wisconsin each year.

Given the large number of different diseases and injuries that can occur each year in Wisconsin, the Wisconsin Turning Point Initiative recognized the need to identify health priorities for Wisconsin's public health system. To address this need, the Data Expert Advisory WorkGroup (DEAG) was created, with its members appointed by the Administrator of the Wisconsin Division of Public Health. This interdisciplinary and intersector workgroup included public health scientists, epidemiologists and other experts, representation from the Division of Public Health, local health departments, institutions of higher education, health care providers, health systems, and others.

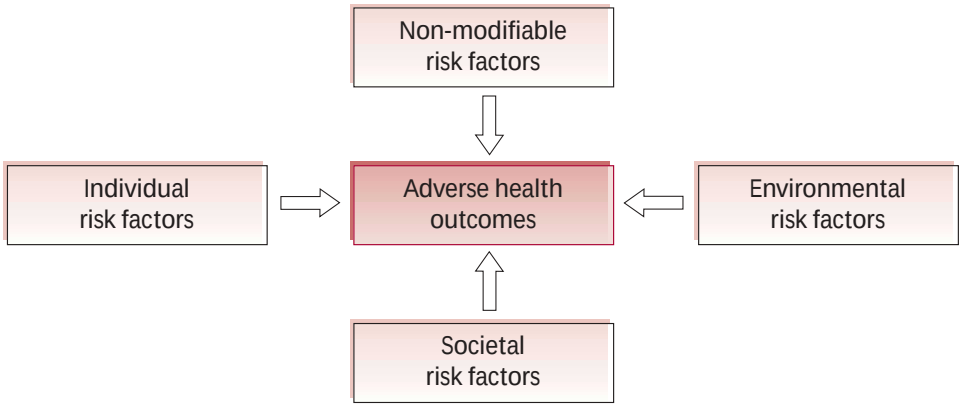
The DEAG was charged with the responsibility of developing a process for identifying the health priorities for the public health system. As part of this charge, the DEAG priority-setting process was to employ a scientific basis and be data driven. The DEAG would be advisory to the soon to be appointed Turning Point Transformation Team.

In the past, many health plans were "disease based," that is, many goals and objectives were related to specific disease processes. For example, goals might include reduction of heart disease, HIV infection or low birth weight. To be comprehensive, this approach inherently resulted in the need for many goals and objectives. Because DEAG was charged with developing a process that would result in a limited number of health priorities a new approach was needed. Therefore, early on it was decided to develop a risk factor-based approach to priority setting.

Risk factors are conditions that increase the likelihood that exposed individuals will experience adverse health outcomes. These include primary risk factors that are associated with the development of disease or injury and also secondary risk factors that contribute to poor health outcomes for persons with existing disease or injuries.

In the DEAG process, risk factors were conceptualized within four domains. These domains are non-modifiable risk factors, environmental risk factors, societal risk factors, and individual risk factors (Figure 1). Non-modifiable risks include such factors as age, sex, heredity, family history and others that cannot be readily altered. Environmental

FIGURE 1 Relationship of risk factors and adverse health outcomes



risks are a direct result of the influence of the physical environment on individual's health. Environmental risks include exposure to harmful substances in the air, water and from other sources. Societal risks include factors such as poverty, discrimination and lack of educational attainment that occur at the societal level and are associated with poor health outcomes. Individual risks are often behaviors and include factors such as smoking, exercise, diet and others. While this framework provides a useful way of viewing the relationship between risk factors and adverse health outcomes DEAG recognized that this is a simplified conceptualization and that the four domains interact and influence each other in complex ways.

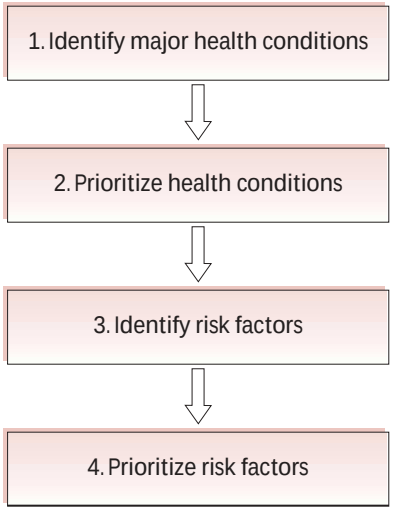
The assumption of underlying risk factor-based priority setting is that because there is an association between risk factors and adverse health outcomes, a reduction in the occurrence of risk factors in a population will have a positive effect on the health of individuals within that population. Furthermore, although some risk factors are associated with a single disease, often specific risk factors contribute to multiple conditions, disease, and adverse health outcomes. For example, smoking may place individuals at risk for heart disease, stroke, lung and other cancers, emphysema, asthma, and other conditions. This leverages the benefit that may result from a reduction in the occurrence of a relatively small number of carefully chosen risk factors.

The specific DEAG assignment was, therefore, two-fold. First, DEAG was to devise a process that could identify the important risk factors for major adverse health outcomes in Wisconsin. Second, using this process, DEAG was to deliver to the Transformation Team a prioritized list of the important risk factors that have a major affect on the health of the people of Wisconsin. It is important to note, however, that the prioritized risk factors are not health priorities, but rather were intended to inform the process of identification of health priorities by the Transformation Team.

Overview of the Prioritization Process

The DEAG developed a four-step process to identify the risk factors that had the greatest affect on the health of the people of Wisconsin. Figure 2 shows the steps in this process. The purpose of Steps 1 and 2 was to identify and prioritize the major health conditions that affect the Wisconsin population. After the priority health conditions were identified, the purpose of Step 3 was to compile a comprehensive list of the risk factors that contributed to these conditions. Finally, the risk factors were identified and prioritized. Each step in this process is described on the following page.

FIGURE 2 Stepwise process for identifying priority risk factors



Step 1: Identify major health conditions

The DEAG realized that cataloging the risk factors for each of the thousands of different diseases and injuries that affect Wisconsin citizens each year was not possible given available time and resources. Therefore, it was decided to limit risk factor analysis to the certain high priority health conditions. Identification of the priority health conditions was a two-step process. The first step was to identify the major health conditions that impact Wisconsin residents; the second step was to select the highest priority health conditions for risk factor analysis.

For the purpose of this process, a health condition was defined as a disease or injury that is listed in the International Classification of Disease, 9th Edition (ICD-9). This document lists over 15,000 diagnostic codes for different diseases and injuries. To identify the major health conditions, DEAG reviewed past health plans from the federal government, Wisconsin, and other states. Input was also obtained from Chief Medical Officers in the Wisconsin Division of Public Health, local public health agencies, physicians, social scientists, health care provides and clinicians, individual DEAG members, and other experts. This process resulted in the identification of 160 major health conditions.

Step 2: Prioritize health conditions

Because of time and resource limitations DEAG considered that a thorough risk factor analysis was practical for only about 50 conditions To select the health conditions for risk factor analysis DEAG needed a process to prioritize the list of 160 major health conditions. The DEAG health condition prioritization process had three components:

1. estimating the magnitude of each condition,
2. estimating the severity of each condition, and
3. identifying a method for selection of priority health conditions.

Magnitude estimates

The magnitude of a health condition was defined as the number of persons in Wisconsin affected by the condition during a typical year. This includes persons with onset of a condition during a year and persons who had onset in the past but continue to be affected by the condition. Magnitude estimates included, but were not restricted to, fatal cases.

To obtain magnitude data for each of the 160 major conditions, persons with expertise in each condition were identified. These experts included Chief Medical Officers and program epidemiologists from the Wisconsin Division of Public Health, local public health officials, physicians, social scientists, clinicians, and others. Experts were asked to provide their best estimate of magnitude for conditions for which they had expertise. For some conditions state-specific data sources were available to guide estimates. In some instances estimates were extrapolated from national data. Magnitude estimates obtained from experts were used to assign a magnitude score for each condition using the ranges shown in Table 1.

TABLE 1 Categorical magnitude scoring ranges

SCORE	NUMBER AFFECTED BY CONDITION	MINIMUM PERCENT OF WISCONSIN POPULATION
1	Less than 500	0.0%
2	500–999	0.01%
3	1,000–4,999	0.02%
4	5,000–9,999	0.1%
5	10,000–24,999	0.2%
6	25,000–49,999	0.5%
7	50,000–99,999	1%
8	100,000–249,999	2%
9	250,000–499,999	5%
10	500,000 or more	10%

Characterization of Severity

The severity of conditions was estimated using an expert rating process. Over 100 expert raters were identified and were divided into 11 teams. Each team had between 8 and 11 members and was assigned between 12 and 18 conditions to rate. To estimate inter-team reliability, 2 conditions, *ischemic heart disease* and HIV infection, were assigned to all 11 teams.

Raters were asked to estimate the impact that each condition had on affected individuals and score the severity on a scale of one to ten, with ten being the most severe. Raters were provided guidelines to consider while making their determinations (Table 2). After the initial rating, the severity scores for each condition were averaged and reported back to the expert raters who were then allowed to reconsider their scores. After the reconsideration process, final average severity scores were calculated for each condition.

TABLE 2 Issues considered during the severity rating process

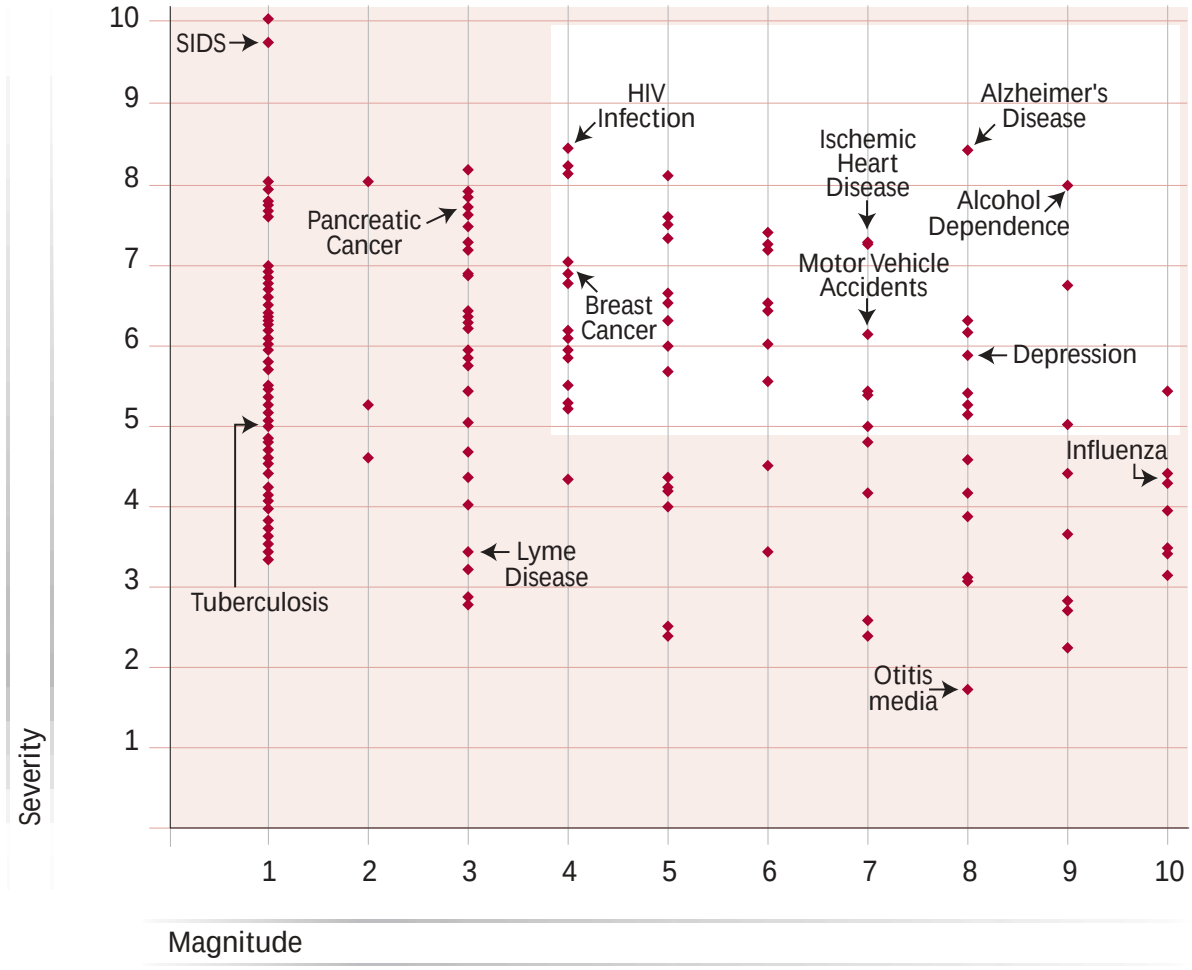
Potential for death
Impact on family, community and society
Impact on effected individuals usual activities
Potential for utilization of medical care
Economic burden for each case

Prioritization of Health Conditions

The rationale behind the health condition prioritization process was that a higher priority should be accorded to health conditions with high magnitude and severity than for those with lower magnitude and severity. Figure 3 graphically depicts each of the 160 major health conditions as a function of their magnitude and severity scores. Certain conditions are labeled to provide benchmarks. The highest priority conditions are in the upper right quadrant (high magnitude and high severity). For example, *Alzheimer's Disease* and alcohol dependence were judged by the expert raters to have both high magnitude and severity. In contrast, *otitis media* was judged to have a high magnitude but low severity compared to other conditions, while *Sudden Infant Death Syndrome (SIDS)* had a very high severity rating, but a low magnitude.

The selection of priority health conditions from this array was the responsibility of the Transformation Team. This was accomplished through a multistep process. First, the Transformation Team determined that health conditions with a magnitude of equal to or greater than four (representing at least 5,000 affected persons) and a severity of equal to or greater than five would be considered high priority. This region is depicted by the rectangle in Figure 3.

FIGURE 3 Adverse health conditions characterized by mangitude and severity



Second, the health conditions that fell just outside of this region were considered and added as appropriate. For example, of the several sexually transmitted diseases (*genital herpes simplex infection, chlamydia, human papillomavirus infection, and gonorrhea*), each one was of very high magnitude, but had a severity score just below the cutoff. The Transformation Team decided to collapse these conditions into a single entity (sexually transmitted disease) and include it as a priority condition.

Next, the Transformation Team reviewed age, race/ethnic and gender-specific mortality data to assure that leading causes death for certain sub-populations were given appropriate consideration. For example, SIDS was outside of the high priority region, but was made a priority because it is a leading cause of death for infants in Wisconsin.

Finally, the Transformation Team reviewed all conditions and added priority conditions as was deemed necessary. Several priority health conditions, including adverse conditions resulting from health care, airborne infectious disease, and vector-borne infectious disease, were added to the priority list at this time. The final list of priority health conditions is shown in Table 3.

TABLE 3 Fifty-four priority health conditions

- Adverse conditions resulting from health care
- Airborne infectious disease
- Alcohol abuse
- Alzheimer's disease
- Asthma
- Autism
- Breast cancer
- Cerebrovascular disease
- Chronic obstructive pulmonary disease
- Colorectal cancer
- Congenital anomalies
- Congestive heart failure and other heart disease
- Degenerative disc disease
- Dental disease
- Depression
- Diabetes
- Domestic abuse and neglect
- Drug abuse
- Eating disorders
- Epilepsy
- Farm injuries
- Food and waterborne disease
- Food insecurity
- Gestational diabetes
- Hearing impairment
- Hepatitis B
- Hepatitis C
- HIV infection and AIDS
- Homicide and injuries purposely inflicted by others
- Hypertension
- Ischemic heart disease
- Lead poisoning
- Low birth weight
- Lung cancer
- Melanoma/Skin cancer
- Motor vehicle accidents
- Multiple sclerosis
- Neonatal sepsis
- Osteoporosis
- Parkinson's disease
- Pneumonia/Influenza
- Pre-eclampsia/toxemia
- Primary arthritis
- Prostate cancer
- Reactive arthritis
- Schizophrenia and other psychoses
- Sexual assault
- Sexually transmitted disease
- Sudden infant death syndrome
- Suicide and other self-inflicted injuries
- Teen pregnancy
- Urinary incontinence
- Vector-borne infectious disease
- Workplace injuries

Step 3: Identify risk factors

Once the priority health conditions had been identified, the next step was to compile a risk factor profile for each condition. A preliminary list of risk factors for each condition was identified by individuals with expertise in that condition. These risk factors were then categorized into each of the four risk factor domains (non-modifiable risk factors, environmental risk factors, societal risk factors and individual risk factors) and used to populate a DEAG risk factor worksheet.

The DEAG identified 140 individuals for the risk factor expert rating process. Each rater was provided with 5 to 10 DEAG risk factor worksheets for conditions in their area of expertise. Raters were asked to first estimate the percentage of risk for that condition that could be attributed to each of the 4 risk factor domains. Next raters were asked to specify risk factors and quantify the percent of risk attributable to each risk factors within each domain. The risk factors provided on the DEAG risk factor worksheet guided this process. However, raters were free to use or ignore these risk factors or to enter additional risk factors as they considered appropriate.

For example, for a hypothetical health condition a rater might assign 50 percent of the total risk to individual factors, 10 percent to environmental factors, 25 percent to non-modifiable factors and 15 percent to societal factors. The sum of these four domain scores was always 100 percent. Next, within the individual risk factor domain the rater might specify that smoking represented 60 percent of the risk, diet 10 percent, lack of exercise 15 percent and alcohol use 15 percent. The sum of the scores for risk factors within a domain was also always 100 percent.

DEAG scored the risk factor worksheets received from the expert raters. The score for

TABLE 4 Fifteen top ranked risk factors

Rank	Risk factor	Summary Score
1	Genetic predisposition and family history	655.10
2	Predisposing medical conditions	415.97
3	Inadequate access to health care	340.45
4	Age	299.09
5	Tobacco use	212.78
6	Low socioeconomic status	211.07
7	Diet/nutritional factors	182.67
8	Overweight/obesity	142.54
9	Factors resulting in health disparity	135.36
10	High risk sexual behavior	127.44
11	Environmental and/or occupational hazards	116.07
12	Alcohol use/abuse	110.01
13	Gender	106.73
14	Drug use/abuse	105.99
15	Lack of social supports	92.79

each risk factor was calculated as the product of the overall domain score and the specific risk factor score within that domain times 100. For example, if a rater assigned 50 percent of total risk to the individual risk factor domain and, within that domain, 60 percent of the risk to tobacco smoking, the score for tobacco smoking for that condition would be 30 (i.e., 0.5 x 0.6 x 100 = 30). Within each condition, the scores for each risk factor were averaged across all raters.

Step 4: Prioritize risk factors

To prioritize the risk factors, the average scores for each unique risk factor were summed across all conditions. The 273 risk factors reported by the expert raters were then ranked by this summary score. The Transformation Team reviewed the ranked risk factor list and selected the top 15 risk factors as seen in Table 4. for consideration during the health priority setting discussion.

Identification of health priorities

The identification of specific health priorities was the responsibility of the Transformation Team. The list of prioritized risk factors identified by the DEAG process was intended to inform the process of identification of health priorities. The Transformation Team discussed the prioritized risk factors and proposed eleven health priorities (Table 5). The Transformation Team did not rank the health priorities.

TABLE 5 Turning Point health priorities

- Access to primary and preventive health services
- Adequate and appropriate nutrition
- Alcohol and other substance use and addition
- Environmental and occupational health hazards
- Exisiting, emerging, and re-merging communicable diseases
- High risk sexual behavior
- Intentional and unintentional injuries and violence
- Mental health and mental disorders
- Obesity, overweight, and lack of physical activity
- Social and economic factors that influence health
- Tobacco use and exposure

The DEAG process had a strong influence on the development of the Turning Point health priorities. Five health priorities (tobacco use and exposure, adequate and appropriate nutrition, high risk sexual behavior, environmental and occupational health hazards, and access to health services) were derived directly from a restatement of DEAG-prioritized risk factors. The health priorities "obesity/overweight/lack of physical activity" and "alcohol and other substance use and addiction" were developed by combining several risk factors from the DEAG list. The health priority "social and economic factors that influence health" was in large part derived from several risk factors (low socioeconomic status, factors resulting in health disparity and lack of social supports). Three health priorities ("intentional and unintentional injuries and violence," "existing, emerging and re-emerging communicable diseases," and "mental health and mental disorders" were added as health priorities by the Transformation Team. While these were not directly derived from the priority risk factors, they were influenced by the DEAG priority health conditions.

Access to primary and preventive health services

Inadequate access to health care was the third-ranked risk factor identified by the DEAG process. The Transformation Team recognized that primary prevention activities delivered through the health care system play a role in preventing the occurrence of disease and injury. In addition, the early identification and treatment of diseases most often occurs within the health care system. Early identification and treatment is important to minimize the adverse effects of a large number of serious health problems.

Adequate and appropriate nutrition

The DEAG process identified diet and nutritional factors as risk factors for many major adverse health conditions effecting people in Wisconsin. This health priority encompasses malnutrition and hunger, diets deficient in vitamins and other nutrients, as well as diets that are risk factors for cancer, cardiovascular disease and other diseases.

Alcohol and other substance use and addiction

The DEAG process identified drug and alcohol abuse as major health conditions effecting the Wisconsin population. In addition, drug and alcohol use and abuse are themselves risk factors for a wide variety of adverse health outcomes, including sexually transmitted disease and low birth weight, motor vehicle and workplace accidents, suicide and homicide, and many others.

Environmental and occupational health hazards

Exposure to harmful substances in the physical environment is linked to many major adverse health outcomes. Next to tobacco smoke, environmental exposure to radon gas is the leading cause of lung cancer. Asthma and other respiratory diseases are associated with poor air quality. Exposure to solar ultraviolet radiation is a risk factor for skin cancer. Water and food contaminated with pathogenic microorganisms or toxic substances are significant causes of disease.

Existing, emerging and re-emerging communicable diseases

The Transformation Team recognized that although many communicable diseases common in the past are now rare, it is necessary to maintain current efforts to prevent their re-emergence. In addition, in the recent past, rare or previously unrecognized diseases, including HIV infection, *cryptosporidiosis*, and others, emerged as significant health problems within Wisconsin. Other communicable diseases are likely to emerge in the future.

High risk sexual behavior

High risk sexual behavior is a risk factor for teen pregnancy and for sexually transmitted diseases, including HIV infection and AIDS. Sexually transmitted diseases are extremely common among adolescents and young adults and HIV infection is a leading cause of death for persons 25-44 years of age. Sexually transmitted diseases contribute to infertility and human *papillomavirus* infection is a leading cause of cervical cancer.

Intentional and unintentional injuries and violence

Intentional injuries include injuries inflicted by others (homicide, sexual and other assaults, and others), and self-inflicted injuries (suicide and non-fatal self-inflicted injuries). Unintentional or accidental injuries are a major cause of death and disability in Wisconsin. These injuries result from many causes including motor vehicle accidents, farm and other workplace accidents, accidents in the home, and others.

Mental health and mental disorders

Mental disorders including *Alzheimer's Disease, depression, eating disorders, schizophrenia and other psychoses* were identified as priority health conditions by the DEAG process. The Transformation Team recognized that mental disorders affect large numbers of persons each year in Wisconsin. Mental disorders also place individuals at risk for many other adverse health outcomes, including alcohol and drug abuse, accidents, suicide and others.

Obesity, overweight, and lack of physical activity

The Transformation Team combined these inter-related factors into a single health priority. These factors play an important contributory role in *heart disease, hypertension, diabetes* and other diseases that are major causes of death and disability in Wisconsin.

Social and economic factors that influence health

The Transformation Team recognized that there is an association between social and economic factors and adverse health outcome. Low socioeconomic status including poverty, lack of educational attainment, and other factors was the sixth leading risk factors identified through the DEAG process. In addition, the DEAG process also highlighted the association between poor health outcomes and social factors, such as discrimination, which often result in health disparities.

Tobacco use and exposure

The relationship of tobacco use and many diseases is well established. The DEAG process identified tobacco use as a risk factor for a significant number of major health conditions, including *lung and other cancers, heart disease, cerebrovascular disease, respiratory diseases,* and others. The Transformation Team recognized the effects of tobacco and second-hand smoke on both smokers and on non-smokers

SECTION SIX:

Special Issues

A Population Perspective: the Importance of Maternal and Child Health

Maternal and infant mortality has served as a sentinel indicator of the overall health of communities and society as a whole. This concept—protecting the health of the population—is the foundation of the entire public health system. *Healthiest Wisconsin 2010* builds on this foundation by linking the underlying cause of illness, injury, premature death and disability to the health of the population as a whole.

Public health, in large part, grew out of a societal recognition of its responsibility to assist children to realize their full potential as responsible and productive persons. The emergence of public health and maternal and child health occurred at the same time in the United States because of profound concerns about social and environmental conditions that were causing high maternal, infant, and child mortality. At the same time, the concept of childhood as a period of dynamic growth and development was taking shape within public health nursing, social work, education, medicine, labor, social work, and nutrition. The establishment of the U.S. Children's Bureau in 1912 led to significant social policies to protect children and families, to include Title V of the Social Security Act in 1935, Medicaid in 1965, and WIC in 1972.

The 11 health priorities and the 5 system (infrastructure) priorities for *Healthiest Wisconsin 2010* are integral components of Wisconsin's efforts to promote the health and safety of the state's children and families. They relate in a powerful way to the entire maternal and child health population in Wisconsin as well as to those who are more vulnerable, such as children with special needs. Addressing the priorities is central to protecting and improving the health of all children, eliminating disparities, and collaborating with all the partners to transform the public health system in Wisconsin. For example, the practice of healthy nutrition and physical activity has its roots in childhood, requires re-enforcement by family and community, and is essential to a high quality of life throughout adulthood, including work force competence. It also requires the collaboration of public health partnerships and equitable financing, both of which are highlighted under the system priorities.

Today, parenting has become more demanding. Increases in the percentages of single parent households, women in the work force, and young children in child care permeate the entire population and affect the health and safety of all children and families. In 1999, the estimated number of children in Wisconsin under the age of 21 was 1,593,660 (Wisconsin Department of Health and Family Services, 2000). We must address the health priorities in light of their impact on all children and their families. For example, the success of the state's Newborn Screening Program, which clearly affects the health of all children, relies on the capacity of several systems to screen all infants. Of the 67,379 Wisconsin live births reported in 1998, 99.7 per cent of babies received newborn screening (Wisconsin State Laboratory of Hygiene, 1999). This population-based approach ultimately will improve the extent to which Wisconsin supports all families to strengthen

their capacity to raise their children.

The care of children with special needs and efforts to reduce infant mortality disparities are examples of maternal and child health issues that affect specific populations. These efforts also pose challenges not only for certain families and communities, but also for society as a whole, thus reflecting the importance of linking them to both the health and system (infrastructure) priorities.

In conclusion, the health of the mothers, children and families transcends Wisconsin's 11 health priorities. Healthy people in healthy Wisconsin communities is the shared vision of the public health system partners which must be supported by caring human relationships, social support networks, humane health systems and policies, and a heightened sense of community. Mothers, children, and families benefit from positive social "connectedness." For example, the benefits of eliminating tobacco use and exposure have major implications for reducing low birth weight, infant mortality, asthma, and alcohol and other substance abuse. The health priorities have significant potential to promote and protect the health of all people, including mothers, children and families, because they focus on the underlying causes of illness, injury, premature death and disability.

REFERENCES

Wisconsin Department of Health and Family Services, Division of Health Care Financing, Bureau of Health Information (2000). Madison, WI: Author.

Wisconsin State Laboratory of Hygiene. (1999). *Newborn Screening Statistics 1998.* University of Wisconsin. Madison, WI: Author.

The Future of Genetics in Public Health

The field of genetics presents both an opportunity and challenge for the public health system. Although not yet on the radar for most public health practitioners, genetic information will have a major impact on the health of the public and the public health system within the next decade. Why is this so?

Genetic differences have already been found to play a role in:

- childhood diseases such as asthma, early development of heart disease, and certain forms of cancer,
- chronic diseases such as cardiovascular disease, diabetes, cancer and Alzheimer's disease,
- infectious diseases including HIV/AIDS and malaria, and
- occupationally-related diseases such as bladder cancer and lung disease.

Knowing some or all of the genetic factors involved in diseases allows for great strides in prevention and early diagnosis/treatment. Virtually all diseases result from a combination of genetic factors and modifiable risk factors such as behavior and exposures. Although there are still no cures for most genetic conditions, a number of diseases traditionally thought of as genetic in cause are partially or fully modifiable. For example, when detected shortly after birth, the mental retardation associated with phenylketonuria (PKU) can be prevented by strict dietary changes. Also, if hemochromatosis is detected early in adulthood, routine blood drawing can be done to prevent the arthritis, liver damage and diabetes associated with this disease.

The Human Genome Project and other advances in genetics are changing the way both medicine and public health are practiced—on both an individual and a population basis. Tests at birth or in early childhood may well predict one's susceptibility to many diseases, such as SIDS, asthma and diabetes. This type of genetic screening can allow for effective primary and secondary prevention efforts.

Gene therapy is expected to be a reality within the future (the time frame for this is under some debate). Because nearly all health problems have some genetic component, gene therapy has the potential to impact the health of the public to a degree as great as or greater than that of vaccination, sanitation or any drug treatment.

Pharmacogenomics is the study of the genetic differences that affect an individual's responses to drugs. Already, medications are being tailored to an individual's genetic makeup. This will lead to greater effectiveness and fewer side effects by treating the problem at its source.

Ethical, confidentiality and discrimination concerns about the usage of genetic information must be addressed through culturally sensitive policies at the local and state level. Wisconsin currently has laws in place to protect the public from health insurance and employment discrimination based on genetic information. However, these provisions have yet to be tested in the courts.

Public awareness of genetic issues is currently influenced almost entirely by the media. The media's presentation of genetic issues has at times been misleading and sensationalized. Often, the media portrays genetics as destiny. However, many new genetic discoveries will lead to opportunities for the public to play a greater role in assuring their own health. Public education efforts must address the impact genetic information can have on health and well-being in a realistic and family-centered manner.

It will be up to public health leaders to ensure that the public has adequate access to genetic services (such as counseling, testing, treatment and education) provided by qualified professionals. Likewise, health care providers must have adequate education about genetic testing and services and their potential positive and negative effects, as well as the ability to interpret results clearly.

The study of gene-environment interactions is continuing to grow and will require sophisticated epidemiologic analyses. These analyses are within the realm of public health experts. The impact of any recommended population-wide genetic testing must be evaluated by epidemiological analysis to determine feasibility and cost-effectiveness. Many

genetic tests are currently extremely expensive (raising health care access issues) and may be difficult to interpret because the results can be complex. Also, input from families and communities will be invaluable in determining whether population based testing is ethical, culturally sensitive, and desired public health practice.

The U.S. Centers for Disease Control and Prevention's Genetics Office has projected that public health funding of genetic capacity will be distributed to states on a competitive basis in the next decade. This funding may exceed that of bioterrorism resource allocations. Additionally, the U.S. Department of Health and Human Service, Health Resources Services Administration provided resources to support the development of a Statewide Genetics Plan for Wisconsin. This planning effort will likely parallel processes used by the Wisconsin Turning Point Initiative in its effort to be a community-wide in scope and link with *Healthiest Wisconsin 2010*.

In summary, genetics can no longer be considered separate from the rest of medicine and public health practice. As in the overall Turning Point Initiative effort, the extraordinary technologic advances that are being made challenge the public health system to engage a wide array of stakeholders in ensuring that genetics has a truly positive impact on the health of the public and well-being.

Environmental and Occupational Public Health

Environmental and occupational public health has been built in response to observed adverse health consequences or the occurrence of known hazardous exposures. We have become quite experienced and skilled at responding to identified problems. However, our ability to be proactive has been inadequate. Perhaps the greatest challenge facing environmental and occupational health practitioners is the need to recognize, anticipate and quantify the consequences and to devise responses to address long-term societal trends. The future consequences of current trends such as evolving land use practice, waste discharge procedures, indoor environment modification, the growing number of pregnant women and youth in the workforce, new industries and increasing service sector jobs need to be understood. Prevention activities can then be instituted before adverse effects become clearly established and the options for remediation limited.

Environmental public health has typically been reactive rather than proactive because we continually suffer the consequences of the occurrence of a long "latency period" which postpones the recognition that revised practices are inadequate for long-term public health protection and produce unintended outcomes. The concept of a latency period, the time between first exposure and the appearance of clinical disease, is best known from the study of chronic occupational diseases such as pneumoconiosis and cancer. The latency period can be 20 or more years. The same concept is observed in environmental health where the consequences of a revised practice (energy efficient home construction, waste treatment and beneficial waste uses, landfill/dump construction, and drinking water well drilling code) may not be immediately apparent.

To effectively anticipate future needs requires the public health system to move far "upstream" from the observed or potential consequences and the recognition of the need for a more holistic approach to prevention. Frequently the upstream trail ends in areas not typically viewed as part of the public health portfolio. Land use practice and zoning decisions made at the local and state level are one of those areas requiring more public health practitioner attention. Public health is spread thin and often is poorly represented on such decision-making bodies. Typically the economic consequences of decisions are better understood than the potential public health impact. For example, the conversion of orchard and other agricultural land to rural residences is a long-term trend. As a consequence we have already observed increased public exposure to agricultural chemical residues in soil and groundwater used for drinking.

To effectively participate more fully in the shaping of societal decisions and anticipate the future environmental and occupational

public health needs we must give priority to improving our prediction skills. These must be supported by a new generation of health risk assessment procedures. We must organize the information revolution to improve our capacity to track the impact of decisions on public health. Wisconsin's environmental and occupational health and exposure tracking is currently in its infancy and behind that of infectious disease reporting surveillance. However we now have the tools to extend our capacity to establish credible data on the occurrence of environmental and chronic disease and hazardous exposures in Wisconsin. Creation of such a system will help focus information and prevention efforts while increasing the knowledge of the causes and risk factors associated with disease. Opportunity lies in the maturing of the information age. A priority will be to reconnect Wisconsin's complex and often confusing array of private and governmental institutions that form the infrastructure of environmental and occupational health. Such data integration will assure resources go to priorities that will improve the quality of the environment and the public health of our communities.

Bioterrorism

Terrorist incidents in the United States and elsewhere involving bacterial pathogens, nerve gas, and the highly lethal ricin toxin have demonstrated that the public is not only vulnerable to bombs, but also to biological and chemical threats. Indeed the more compelling issue is not whether acts of bioterrorism will occur in this country, but where and when such acts occur and what they will involve. The ready availability of a wide range of dangerous biologic and chemical agents to potential terrorists underscores the need to prepare for bioterrorist attacks. In contrast with emergency responses to terrorist attacks such as bombings that typically involve police, fire, hazardous materials, and emergency medical personnel, a covert terrorist attack involving a biologic agent will thrust the public health and health care community into the role of being first responders. The necessity for public health planning for and response to such events is readily apparent. Involving and creating traditional and nontraditional partnerships and having timely access to critical information is key to planning likely responses to a variety of potential events.

In its Strategic Plan for Bioterrorism Preparedness and Response, the U.S. Centers for Disease Control and Prevention (CDC) describes activities that will enhance bioterrorism preparedness and response capacities at all levels of the public health system. In Wisconsin, the Division of Public Health received a CDC cooperative agreement funding in September 1999 for the first of five project years. The Division of Public Health in collaboration with traditional partners such as the Wisconsin State Laboratory of Hygiene and the City of Milwaukee Health Department will:

- Enhance systems for rapid detection of unusual occurrences of illness that may be the result of biologic or chemical terrorism,
- Expand epidemiologic capacity to investigate health threats posed by bioterrorism, and
- Enhance core diagnostic capabilities in the public health laboratories as well as other major laboratories to conduct rapid and accurate diagnostic and reference testing for the biologic agents likely to be used in terrorist attacks.

In addition, Division of Public Health, collaborating with the University of Wisconsin-Madison Department of Information Technology (DoIT), has initiated development of a statewide health and training network to provide for rapid dissemination and exchange of key information over the Internet. This network will allow Division of Public Health to train health workers and to facilitate organizational capacity to respond to bioterrorism or other health threats throughout Wisconsin.

Food Safety: from Farm to Fork

From the farm to the fork, food safety is a basic human need and an important public health and consumer protection issue. In

Wisconsin, and nationally, the issue of the safety of the food supply has emerged as an important issue for consumers and a priority for the public health community and its many partners in the government and private sectors.

During the last century food safety concerns have evolved from being local problems that were identified by the human sensory system (if food smelled or looked bad you just didn't eat it) to problems that have a national or global source or impact and are not detectable by the senses. Problems caused by animal diseases or poor facility sanitation have largely been controlled through regulation. Today's food safety problems are related to pathogenic bacteria and viruses, parasitic microorganisms, food allergens, and residues of pesticides or animal drugs. For example:

- *E. coli* 0157:H7, a serious strain of bacteria first identified by scientists in 1982, has increasingly been associated with food-borne disease traced to undercooked meats and unpasteurized juice or milk. Additionally, outbreaks of disease from this same organism have resulted from contact with food animals on exhibit to the public.
- Human illness caused by eating imported, fresh produce contaminated with *Cyclospora* (a parasite) has illustrated the risks associated with the global network of commodity transport. The fact is that emerging pathogens in other parts of the world can rapidly be brought to our doorstep.
- Antibiotic resistance is a significant human health issue. The potential role that the animal production environment has in contributing to the transmission of resistant foodborne pathogens to people reinforces the fact that food safety begins on the farm with sound animal husbandry practices.

While it is acknowledged that both the quantity and quality of the US food supply sets the global standard, these issues demonstrate that increased emphasis on food safety must be sustained. Nationally, the National Academy of Sciences and the President's Food Safety Strategic Plan have recommended improvements to assure that the food safety system of the future is based on science and risk assessment. These initiatives also have emphasized the need for better coordination among federal agencies with food safety responsibilities and the need to integrate the capacity and expertise of state and local food safety agencies into a national food safety system. These initiatives have recognized that human health risks associated with bacteria, viruses, and parasites are largely preventable. These initiatives have also promoted the use of new tools such as PulseNet and FoodNet for the rapid dissemination of foodborne illness disease information to the state and local health departments.

In Wisconsin, efforts are underway to apply the concepts embodied in the National Academy of Sciences report. The state agencies with primary responsibility for food safety are the Wisconsin Department of Agriculture, Trade and Consumer Protection and the Wisconsin Department of Health and Family Services. These two agencies have worked together to coordinate their responsibilities and have collaborated with local health departments and the food industry to build science and risk assessment into the food safety system as critical strategies to protect the health of the public. For example:

- Duplication in the licensing and inspection of retail food businesses has been eliminated
- Nearly identical science-based rules have been adopted for the regulation of retail food businesses in Wisconsin

A Food Safety Task Force has been convened to tap the perspective, expertise, and collegial spirit of representatives of the wholesale and retail food industry, academia, consumer groups and local health departments. The first goal of the task force will be to address the educational needs of government agencies and the retail food industry to successfully implement Wisconsin's new retail food rule.

Because safe food is a basic human need, solving food safety problems that affect Wisconsin's consumers and improving the state's food safety system must be an agenda item that is front and center on *Healthiest*

Wisconsin 2010. During the next decade food businesses, consumers, and regulators will face many challenges and changes that include:

- New approaches to food production and processing,
- The global origin of agricultural food products,
- Consumer demands for a wide variety of ready-to-eat, fresh or lightly-processed food and the manner in which the food industry meets those demands
- Emerging and re-emerging pathogens associated with foodborne disease,
- Demographics of the population, and
- The benefits and limitations of new tools for prevention and detection of foodborne disease.

To improve the safety of the state's food supply, food businesses, academia, and food regulators will need to work in a coordinated, collaborative way to accelerate building a food safety system. This requires focusing on minimizing risk (particularly risk to vulnerable populations); developing science needed to underpin food safety efforts (particularly at the production level); and, improving technologies and communication systems to provide information needed to be preventive as well as effective in identifying, containing, and removing unsafe food from the human supply. If these efforts are successful, we will improve our ability to assure our basic human need for safe food from the farm to the fork, and in doing so protect the health and well-being of the public.

Wisconsin Department of Health and Family Services

Division of Public Health
1 West Wilson Street
Room 250
Madison, WI 53702
PPH 0276 (04/02)

www.dhfs.state.wi.us
www.wisconsin.gov