Cross-Cutting Research
DRAFT Starter List of Research Ideas

Purpose of the Starter List

The Starter List is for discussion purposes at this stage of the CDC Research Agenda Development Process. It is a DRAFT listing of broad research concepts that are not yet integrated into a specific research agenda for CDC.   Suggestions and modifications to the Starter List will be used to develop a draft CDC-wide Research Agenda that addresses critical research needs and health protection goals.

There are seven focus areas on the Starter List, one corresponding to each of the six Research Agenda Development Workgroups, plus a seventh for cross-cutting research that serves as a foundation for many types of public health research and programs.

You will find the Starter List for Cross-Cutting research ideas on the following pages of this document.   The Starter List for other focus areas is also available on the OPHR Website (see URL below).

Your opportunities for input

You will have two opportunities for input to the CDC-Wide Research Agenda development process:

1) **Commenting on the Starter List**

We welcome your input on both the Starter List and the CDC-wide Research Agenda development process. We will be accepting public comments on the Starter List and process through April 15, 2005. You can provide suggestions and comments by visiting the following URL:

http://www.rsvpbook.com/custom_pages/792_CDC_comments.php

2) **Commenting on the Public Comment Draft**

Later this summer, you will have another opportunity to provide input by offering comments on the Public Comment Draft of the CDC-wide Research Agenda. The Public Comment Draft will be published in the *Federal Register* and on the CDC Office of Public Health Research (OPHR) Website below. The target date for release of the public comment draft is mid-June 2005.

The OPRH website will also provide periodic updates on the Research Agenda development process.   Please visit our Website at:

 http://www.cdc.gov/od/ophr/cdcra.htm

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Theme ID#	Research Theme Title and Description	Examples of Research Activities
X 1	**New Research Methods and Tools** Develop and apply new methods and tools for the design, conduct and analysis of research for use in public health.	• Develop new approaches to evaluating public health problems not suitable to being studied by experimental designs, such as clinical trials; • Devise and test methods to increase population survey response rate; • Develop methods to more accurately estimate the magnitude of risk factors and diseases in small geographic areas; and • Develop new and improved technologies and laboratory methods for collecting and analyzing environmental and biological samples.
X 2	**Data Science and Information Systems** Identify and develop the best methods to identify, obtain, link, and analyze new and emerging sources of data, and integrate and manage information systems in support of public health.	• Identify methodologies for measuring, assessing and assuring data quality; • Improve methods for combining data of different types, sources, and quality; • Improve existing and develop new methods of analyzing and presenting data, including geographic information systems, data mining techniques, statistical analyses of text, data visualization, and communication of statistical data; and • Identify the most effective ways to integrate different health information systems, such as electronic medical records, through the development of data standards, new technology, and innovative software tools and databases.

Theme ID#	Research Theme Title and Description	Examples of Research Activities
X 3	**Disease, Injury, Disability, and Exposure Surveillance** Develop new health surveillance methods and improve health surveillance systems for better detection, analysis, evaluation and control of diseases, injuries, disabilities and harmful exposures to protect the health of communities.	• Devise methods to evaluate and correct for underreporting or incomplete detection of harmful exposures or health conditions; • Improve rapid detection and reporting of emerging infectious diseases and harmful exposures; • Explore non-traditional sources of data and data linking to conduct surveillance; and • Evaluate the different components of surveillance systems to improve performance, including the coordination among involved health providers and institutions, the quality of laboratory testing and results to confirm illnesses or exposures, and the timeliness and methods of disseminating information evaluated by the system so that appropriate control actions can be taken to protect public health.
X 4	**Burden of Disease** Develop methods to measure and compare the relative burdens of specific diseases, injuries, and other adverse health conditions in order to implement the mix of public health interventions which will reduce or prevent the greatest amount of total health burden.	• Develop new and improve existing methods to assess current and predict future trends for health burdens, including acute and chronic illnesses, death, quality of life and well-being, and economic and social costs; and • Develop new methods to estimate the preventable burden of disease for appropriate allocation of resources to the most effective public health interventions.

Theme ID#	Research Theme Title and Description	Examples of Research Activities
X 5	**Eliminating Health Disparities** Develop and promote the use of effective methods, including interventions, in disadvantaged populations to characterize and reduce or eliminate modifiable health disparities based on gender, age or life-stage, race, ethnicity, nationality, geographic location, disability, income, wealth, education, and other social determinants of health.	• Evaluate the fundamental causes of ill-health and health disparities in disadvantaged populations; • Assess and increase the effectiveness, prevalence of use, barriers to optimal use, strategies to increase use, and cost-effectiveness of interventions to prevent and control leading causes of premature death, illness, and disability within disadvantaged populations; • Assess and enable the use of cultural competency, language services, and community-physician best practices in underserved minority communities; • Investigate health disparities amongst people with disabilities, especially in minority populations; • Evaluate and reduce the impact of social forces such as racism, sexism and homophobia in determining individual and community well-being; and • Identify the social, physical, and mental health needs of individuals in prisons or jails.
X 6	**Community-Based Participatory Research** Actively engage communities in the design, conduct, and interpretation of population-based health studies to improve study quality, and to increase the dissemination, relevance, acceptability, and usefulness of the research findings to communities in order to improve their health.	• Evaluate the effectiveness of community involvement in the planning and execution of health interventions to improve community health status and reduce health disparities, especially in disadvantaged or minority populations; and • Identify barriers to and opportunities for successful engagement of communities in research.

Theme ID#	Research Theme Title and Description	Examples of Research Activities
X 7	**Health Education, Communication and Marketing** Develop effective health education, communication and marketing strategies and tools to inform and motivate people to make behavior changes to maintain healthy lifestyles, improve their health status, and prevent or minimize the impact of disease, injury and disability.	• Evaluate best methods to improve health literacy, especially among disadvantaged or poorly educated populations; • Develop and test culturally appropriate health messages to maximize their impact; and • Investigate the most effective means of encouraging populations to advance from being aware of health issues to taking actions to promote their health and prevent or reduce illness, injury or disability.
X 8	**Systems Research** Study how health systems, the natural and built environment, and other critical infrastructure systems can function to improve public health.	• Evaluate how regional hospitals and emergency medical services can be better coordinated to respond to mass casualty events; • Evaluate the factors which lead to the improvement of the public health system and its impact on health outcomes; • Investigate features of regional transportation systems, such as sidewalks, bike paths, public transportation and motor vehicle emissions, that may influence indicators of community health, such as obesity and asthma prevalence; and • Conduct research on how to improve food and water safety and sanitation at the local, regional and national levels.

Theme ID#	Research Theme Title and Description	Examples of Research Activities
X 9	**Public Health Impact Evaluation** Improve evaluation methods and conduct evaluations on the public health impact of interventions, programs, and policies.	• Evaluate the relationship between health insurance coverage, access to medical care, and illness, and compare the costs to the benefits of expanded coverage on improved public health; • Evaluate how public health programs can be structured most efficiently to deliver the best services and improve health; and • Develop methods to evaluate the public health impact of social programs and policies not explicitly designed to address health issues such as policies for housing, transportation, education, labor, early childhood development, and reduction of racism.
X 10	**Translation and Dissemination of Effective Interventions** Conduct research on effective methods to translate research findings into interventions and programs, and to disseminate effective interventions and programs.	• Conduct translation research to improve the dissemination, adoption, and effectiveness of interventions that have been shown to be efficacious in prior research; and • Develop population-based lifestyle profiles to use as indicators or estimators of public health risk to better develop practical interventions.
X 11	**Workforce Training and Development** Conduct research on and develop methods to improve the public health workforce.	• Assess the impact of trained public health professionals on outcomes such as improved health of people, and improved public health practice or capacity; • Identify best practices for workforce development; • Identify and apply new methods to describe the current public health workforce; • Determine the current public health workforce size and needs and forecast future ones; • Determine the best methods to link academia or other groups, including community-based organizations, with public health practice; and • Determine the best methods for identifying and validating competencies in public health disciplines.

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X 12	**Economics and Public Health** Develop and apply economic theories and methods to examine the supply and demand for public health, to estimate the monetary and social costs of diseases and injuries, and to improve the delivery of health care prevention, treatment and rehabilitation services.	• Develop methods to produce currently unknown values for various economic measures of health burden and well-being; • Develop models on how public health agencies and health care providers can most efficiently optimize resources to provide the best mix of health interventions; and • Conduct applied economic studies of factors that can affect individual and organizational choices related to public health concerns, including delayed gratification, risk perception of behaviors, and risk-taking preferences.
X13	**Social and Behavioral Sciences in Public Health** Develop and apply social and behavioral theories and methods to assess and improve public health at the individual, family, community, institutional, regional, national and international levels.	• Develop methods for describing and analyzing social determinants of health; • Develop indicators of baseline community health status against which to measure changes associated with health interventions; • Devise new qualitative and quantitative methods for surveillance of behavioral risks associated with adverse health outcomes; and • Develop and evaluate effective behavioral, social, and structural interventions to prevent disease, injury and disability, and to promote health and reduce disparities.
X 14	**Mental Health and Substance Abuse** Conduct research on how to better promote mental health, and to prevent, assess and treat mental illness and alcohol and other substance abuse.	• Identify the most effective individual, family, and community level interventions for preventing, diagnosing, and treating mental illness. • Evaluate the social and economic costs of mental illness, violence and suicide, and substance abuse on individuals, families, and communities; • Evaluate the influence of alcohol and other substance use and misuse on illness and death; and • Test strategies for preventing or reducing the negative consequences of alcohol use and abuse on health and safety, including the prevention of underage drinking.

Theme ID#	Research Theme Title and Description	Examples of Research Activities
X 15	**Human Genomics in Public Health** Develop and apply methods for collecting, analyzing, and synthesizing data on the distribution of variations in human genes, the associations between genes and diseases, the interactions between genes and the environment, and the interactions between different genes.	• Measure the frequency of important gene types in the population; • Ensure that DNA samples are included in appropriate health surveillance systems, field investigations and research studies; • Develop methods for storing and assuring the quality of DNA samples; • Evaluate genomic laboratory capacity and performance to choose the best models for public health research; • Develop statistical methods for analyzing and synthesizing genomic data, including family history, and differing gene types, gene expression and gene products (e.g, protein systems) and how they interact; and • Develop improved epidemiologic methods for analyzing the interaction of genes with the environment, and estimating the fraction of illness that can be attributable to particular genes.
X 16	**Public Health Law and Policy** Determine the impact and effectiveness of legally-mandated public health interventions and programs in different community settings, and improve the translation of research findings into appropriate and effective legal strategies designed to protect public health.	• Evaluate the effectiveness of legally-required public health interventions on achieving reduction of diseases and injuries, such as public smoking bans, vaccination programs, motor vehicle safety equipment requirements, and air pollution control regulations; and • Compare the effectiveness and efficiency of laws and mandatory regulations to voluntary guidelines, model standards or no standards in addressing public health problems and achieving health impacts.
X 17	**Ethics in Public Health** Determine the best methods to improve the development and promote the adoption of ethical frameworks and practices in the conduct of public health research and programs.	• Study the health benefits of promoting human rights; • Evaluate methods to enhance the protection of privacy and confidentiality in public health programs and research; and • Evaluate how to prevent scientific misconduct in the design, conduct, or use of research.