SOCIETY FOR PREVENTION RESEARCH

STANDARDS OF KNOWLEDGE FOR THE SCIENCE OF PREVENTION

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CONTENTS

PREFACE

This document was developed at the request of the Training Committee for the Society for Prevention Research. A Task Group was formed six years ago to develop a definition of prevention science and conceptualize and prepare a document that lays out the specific training needs for future prevention researchers. Many challenges that faced the Task Group members including defining the field of prevention science to reflect its multi-disciplinary foundations and evolution over the past three decades. This document represents the thinking and discussions of the Task Group members who were guided in deciding what to include by the question: "In what ways is prevention science different from its roots based in fields of expertise such as epidemiology, psychology, sociology, neuroscience and statistics"?

The Task Group sought to create a document that is comprehensive and with relevance both to prevention practitioners and prevention researchers. Three broadly defined domains were examined: (1) epidemiology, (2) prevention intervention development and implementation, and (3) prevention research methodologies. The document emphasizes the interdependencies of the three domains; redundancies are intended to illustrate overlaps. The guiding precept was to articulate the field, so that a prevention scientist could specialize in at least one of the three domains while at the same time have an understanding and an appreciation of the other domains, underscoring the principle that prevention science is transdisciplinary.

Finally, as with any evolving field of study, this document is considered a "living document" that will, by necessity, be updated as we learn more about the design and delivery of prevention interventions and advance our research designs and statistical methodologies to improve our understanding of the key operational elements of effective prevention interventions.

INTRODUCTION

The field of prevention science has developed rapidly over the last 40 years, drawing on professionals with diverse training, perspectives, and theoretical orientations. The primary goal of prevention science is to improve public health by identifying malleable risk and protective factors, assessing the efficacy and effectiveness of preventive interventions and identifying optimal means for dissemination and diffusion. The field involves the study of human development and social ecology as well as the identification of factors and processes that lead to positive and negative health behaviors and outcomes. Theories of human development are used to design interventions (programs and policies) that target the reduction of risk and the enhancement of protective factors at the individual, familial, peer, community, and environmental levels. The terms preventive interventions and interventions are interchangeable and are used in this document to encompass preventive programs and policies. Prevention science is the foundation for health education and health promotion as well as preventive interventions.

Prevention science is multidisciplinary as the expertise necessary to conduct this science draws from many fields. Many areas of science contribute to the understanding of the etiology of positive and negative social and health outcomes, including biological, cognitive, behavioral, and social sciences. The development and

implementation of interventions demands expertise in behavior change, and requires the perspective of clinical scientists. Determining the cost effectiveness of interventions requires economists. Prevention science methodologies draws on research designs from these fields and statistical analytic techniques from biostatistics, mathematical statistics, economics, education, agriculture, and many other disciplines. Thus, prevention scientists include epidemiologists, psychologists, physicians, sociologists, social workers, educators, health practitioners, public health scientists, biostatisticians, nurses, geographers, mental health counselors, anthropologists, policy analysts, economists, criminologists, neuroscientists, and geneticists.

This document defines assumptions specific to the conduct of prevention research and the competencies of teams of researchers. We acknowledge that no individual possesses expertise in all of the areas described in this document and that carefully selected team members with expertise from practice, intervention development, and study design and methodology are necessary to meet the challenges described.

Furthermore, as this document lays out the domains that constitute prevention science it has relevancy to both prevention researchers and prevention practitioners and policy makers. While recognizing that community prevention practitioners are integral to the diffusion and application of tested, effective prevention programs, and are referenced in this document, the core competencies presented here are specific to prevention researchers

Principles that guide the field include:

1. **Developmental focus**. This includes variations in manifestations of risk, promotive and protective factors over the life course; the accomplishment of developmental tasks and the timing and course of disorders. Further, the developmental context and timing of interventions must be considered. Together, these sub-assumptions point to the necessity for considering timing, context, and content of interventions, such as preventive screening, and assessment of an identified population to target the intervention (universal, selected, and indicated).

2. **Transactional ecological.** The individual, family, school, community, and the larger sociopolitical and physical environments are interdependent and best understood and influenced by approaches that account for transactional processes across multiple levels. These range from interactions between genetic and other biological processes and dynamics of social relationships, within the context of environmental factors. Within this overall framework, prevention science draws from a wide range of theories that explain dynamics of human development and behavior.

3. **Human motivation and change processes.** The design of effective interventions which seek change in individuals and environments must address the role of human motivation, intentions, and self-efficacy as well as an understanding of mechanisms of risk, promotion and protection.

4. **A cycle** of research activities. Prevention science involves progressive steps, which include (1) conducting research to understand predictors of problem and positive developmental outcomes and understanding the epidemiology and natural history of the problem, (2) developing interventions to motivate changes in individuals and environments, based on theories of human
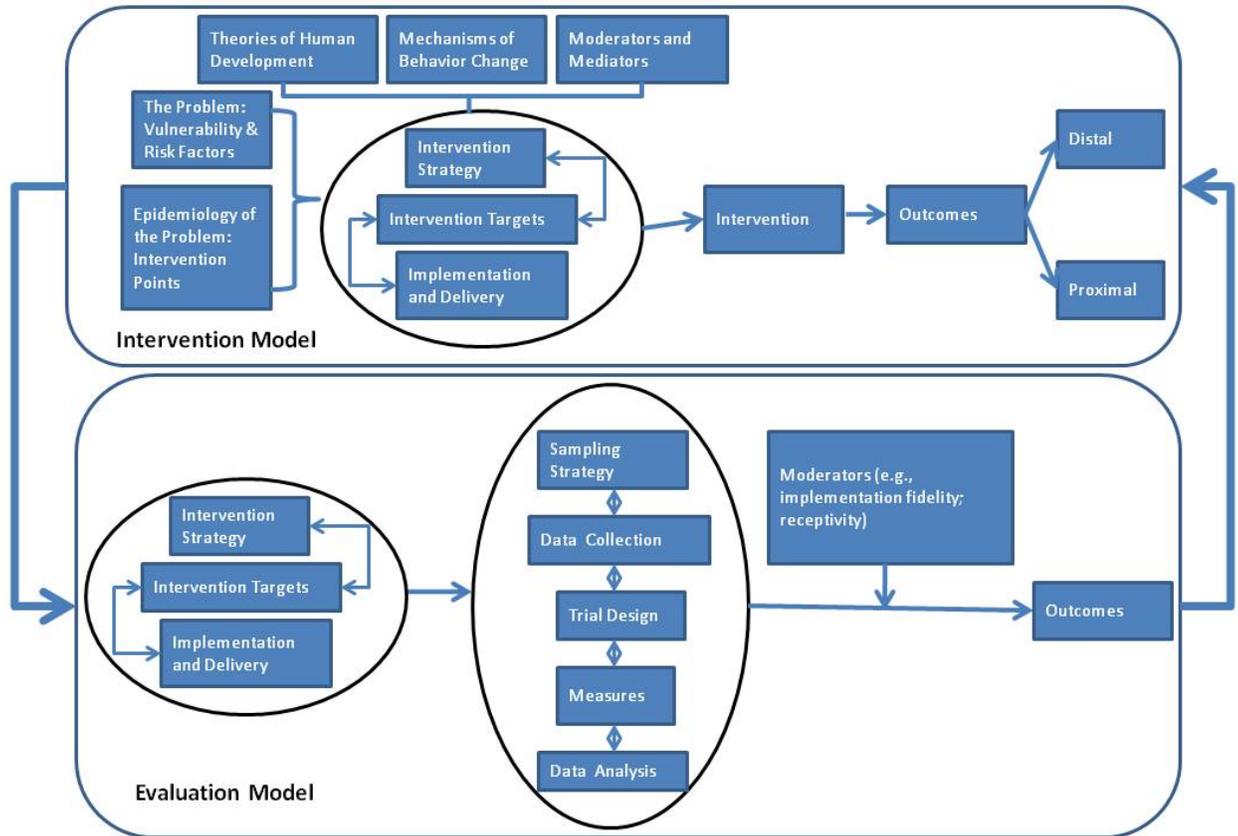
behavior and our understanding or mechanisms for behavior change, (3) testing the efficacy of these preventive interventions, and (4) testing the effectiveness of efficacious interventions in contexts under realistic delivery conditions. Dissemination of research findings is the responsibility of prevention researchers. These steps are critical for accruing knowledge and assuring the quality of delivery of comprehensive prevention. The components of the Intervention Model and Evaluation Model are depicted above.

5. **A team approach:** Transdisciplinary teams with an array of expertise are required to address the complexity of the issues addressed by prevention science. This expertise includes understanding the etiology of a range of problem behaviors; intervention development and practice expertise; knowledge of research design, sampling and data collection and analysis, as well as understanding program and policy implementation and analysis.

6. **Ethical practices** guide all aspects of prevention research and associated practices and processes. These include:

   - Beneficence and non-malfeasance: Prevention researchers seek to benefit vulnerable populations and to avoid causing harm.

- Fidelity and responsibility: Prevention researchers establish relationships of trust with the targeted population, the population setting and the larger social context.

- Integrity: Prevention researchers promote accuracy, honesty, and truthfulness in the science, teaching, and the practice of prevention science.

- Justice: Prevention researchers recognize that fairness and justice entitle all persons to benefit from the contributions of prevention science. In addition, prevention researchers assure that all persons are treated equitably and are provided quality services in the conduct of their research.

- Respect for people's rights and dignity: Prevention researchers respect the dignity and worth of all people, and the rights of individuals to privacy, confidentiality, and self-determination.

7. **Developmental epidemiology of the target population.**

   Acknowledgement of Heterogeneity: For many of the problems and conditions that are the focus of prevention science, considerable heterogeneity in etiology and outcomes within and across populations is likely. Heterogeneity is inherent in the epidemiology of these problems and conditions and therefore is critical to understanding risk variations in processes and mechanisms that are reflected in intervention design

8. **Continuous feedback between theoretical and empirical investigations.** Theory seeks to explain the mechanisms that account for a behavioral outcome discovered through empirical epidemiological investigations or evaluations of prevention interventions. Theory also drives the development of preventive interventions, which are implemented and assessed for efficacy and effectiveness. The investigation of intervention effects, in particular a focus on whether hypothesized mediators carry the intervention effect, in turn leads to refinement of theory, etiological processes and the intervention. Practitioners identify the needs of their population and context and develop a logic model for addressing those needs. Evidence-based interventions can then be selected to address specific needs based on the conceptualization of the problem. To achieve the shared vision for improving the nation's health, both groups of professionals need to collaborate and utilize their collective skills and particular expertise. Research must be informed by practice just as practice must be informed by research. Clearly moving practice into policy requires a partnership between researchers and practitioners.

9. **Improving the public health.** To achieve the vision of prevention science to improve the nation's health, scientists and community prevention practitioners need to collaborate and utilize their collective skills and particular expertise. Science, practice and policy must be mutually informed by research in controlled and natural settings.

10. **Social Justice**. Social Justice is related to the Human Rights Movement and the Health as a Right Movement. Social Justice is the ethical and moral imperative to understand why certain population subgroups have a disproportionate burden of disease, disability, and death, and to

design and implement prevention programs and systems and policy changes to address the root causes of inequities.[1]

11. Strategies for ensuring sustainability of preventive interventions.

- Building community and organizational capacity in management, advocacy, fundraising, and training.

- Utilizing simple, user-friendly materials and tools.

- Involving community members in every step of the intervention research cycle.

- Developing, implementing, and institutionalizing cost-recovery mechanisms.

- Developing, implementing and institutionalizing quality assurance and self assessment tools.

- Building on pre-existing structures.

- Developing intervention leaders and "champions".

- Encouraging cross-community learning.

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[1] *Social Justice and Prevention*. Some key prevention strategies that may contribute to eliminating health inequities include: (1) interventions designed to increase access to services for all through financing mechanisms, organizational changes, and removal of legal and transportation barriers; (2) culturally and linguistically competent interventions; (3) interventions designed to improve patient-provider communication; (4) interventions designed to eliminate provider discrimination; and (5) increased minority representation among the prevention science workforce**.**

Prevention science involves three major domains: ***epidemiology[2], intervention development, and research methodology (to include design and statistical applications)***. (1) ***Epidemiology*** seeks to identify the predictors and processes associated with positive and negative behavioral outcomes and their distribution in populations. (2) ***Intervention*** focuses on altering trajectories by promoting positive developmental outcomes and reducing negative behaviors and outcomes (3) ***Research methodology*** as used in prevention involves an array of tools and techniques including community entrance and engagement skills, study design, sampling methodologies, sample maintenance and retention, and statistical analyses. Prevention researchers incorporate both qualitative and quantitative approaches in their studies. There are specific research methods that have particular relevance to each of the first two domains. For that reason, there are redundancies across domains. These redundancies further underscore the complexity of prevention science and prevention research and the need for a research team with prevention science expertise. Each of these domains of prevention science is detailed below including a purpose statement emphasizing particular relevance to prevention, specific assumptions, and core competencies.

EPIDEMIOLOGY/ETIOLOGY

PURPOSE

To identify prevention needs and targets for intervention by:

- Describing the incidence and prevalence of these factors and outcomes across stages of development, populations, and geographic areas.

- Identifying risk and protective factors related to positive and negative health-related outcomes in a population.

- Understanding how identified risk, promotive, or protective factors, processes and mechanisms are related to positive and negative health-related outcomes as well as their distribution across stages of development, populations and geographic areas.

ASSUMPTIONS REGARDING EPIDEMIOLOGY IN PREVENTION SCIENCE

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[2] The general term "epidemiology" is used in this document. There are many aspects of the field that are relevant to prevention including descriptive epidemiology and analytic epidemiology that includes examining factors, mechanisms, and processes associated with a defined health-related problem. As many of the behaviors addressed by prevention science have their onset at various stages of development from in utero through late adulthood with implications across the lifespan, the term developmental epidemiology was coined by Kellam and Werthamer-Larsson in 1986 and is often noted in prevention science publications. Kellam, S.G., and Werthamer-Larsson, L., Developmental Epidemiology: A basis for prevention. In: Kessler, M. and Goldston, S.E. (eds.). A Decade of Progress in Primary Prevention. Hanover, NH: University Press of New England, 1986. Pp. 154-180.

- Transdisciplinary. Epidemiology in prevention science is transdisciplinary and draws from many fields, including biology, psychology, sociology, anthropology, demography, economics and other social and behavioral sciences.

- Theory Driven. Epidemiology uses theory to describe the relationships between risk, promotive, and protective factors with positive and negative behaviors.

- Transactional. Epidemiology as applied to prevention accounts for the interplay of individual (e.g., genetic, biological, developmental competencies); social and environmental factors relate to positive and negative behaviors across the lifespan.

- Intervention development. Epidemiologic findings identify malleable risk, promotive, or protective factors as targets for intervention development.

- Intervention Targeting. Identifies populations with high levels of malleable risk factors as targets for interventions through specific risk reduction and promotion of protective factors.

- Developmental. Epidemiology for prevention incorporates a developmental understanding of the relation between risk, promotive, or protective factors, processes and mechanisms and outcomes across the lifespan and makes an assessment of the appropriate timing for implementation of specific preventive interventions.

- Monitoring. Epidemiologic methods allow for systematic monitoring of changing patterns and trends in positive and negative behaviors and associated risk, promotive and protective factors and can assist in identifying emergent targets for intervention.

- Establishing and monitoring the various human subject issues, especially the protection of research participants and organizations.

CORE COMPETENCIES

- Knowledge of the concepts of risk, promotive, and protective factors for specific positive and negative health-related outcomes, their general distribution across populations and their relationship to the onset, maintenance, and progression of these behaviors.

- Knowledge of theories related to human behavior and development that describe the processes and mechanisms through which risk, promotive and protective factors are related to positive and negative health-related outcomes.

- Knowledge of sampling theory and design to accurately represent the target population.

- Knowledge of multi-method, multi-agent assessment methods to collect epidemiologic data (e.g., reliability and validity of methods to assess individual and environmentally relevant variables).

- Understanding of statistical methods to identify risk, promotive and protective factors for positive and negative behaviors and how to identify the developmental salience of these factors.

- Understanding of statistical methods to test theories of how risk, promotive and protective factor processes and mechanisms predict positive and negative behavior.

- The application of a variety of data collection methodologies, e.g., interviews, computer-assisted, telephone, mail, observational, biological, qualitative methods, ecological momentary assessment, web-based, ethnographic, and archival.

- Methods of participant recruitment and retention to minimize bias and missing data, and approaches to handle missing data whether through attrition or incomplete data collection.

PREVENTION INTERVENTION DEVELOPMENT, IMPLEMENTATION, SCALING UP AND SUSTAINABILITY

PURPOSE

To develop and implement programs and policies to prevent problem behaviors and their negative outcomes and promote positive behavior by:

- Developing interventions (i.e., programs, policies, and practices) designed to address malleable risk, promotive and protective factors in ways that are theorized to reduce negative and promote positive health-related outcomes.

- Designing and implementing studies to test preventive intervention outcomes on risk, promotive and protective factors and positive and negative behaviors. Included here are also methods to assess the effects of the components of interventions on expected mediators the differential impact of varied delivery mechanisms on intervention outcomes, , as well as assessments of differential effects for sub populations.

- Conducting benefit-cost studies of preventive interventions.

- Training intervention personnel and managing the delivery of prevention interventions with fidelity to the intervention design.

- Conducting research studies to assess the impact of fidelity to the intervention design on outcomes.

- Conducting effectiveness trials of efficacious preventive interventions.

- Conducting research studies to understand conditions and procedures necessary for evidence-based preventive interventions to be delivered with quality.

- Conducting dissemination trials of effective preventive interventions to determine best practices and conditions for the selection, adoption, adaptation, management, financing, and sustainability.

- Conducting research to determine factors affecting support for fidelity of and use and sustainability of efficacious prevention interventions in communities and states.

- Establishing and monitoring the various human subject issues, especially the protection of research participants and organizations.

- Scaling up to increasing an intervention's impact while maintaining intervention fidelity. There are four categories of scaling up: (1) quantitative, increasing the numbers of people reached by an intervention, (2) functional, expanding intervention breadth, (3) political, increasing organizational ability to address barriers to effective intervention delivery; and, (4) organizational, improving organization's ability to continue to support the intervention in an effective and sustainable manner.

- Establishing the infrastructure to support and sustain effective prevention interventions in communities.

- Establishing and monitoring the various human subject issues, especially the protection of research participants and organizations.

ASSUMPTIONS REGARDING INTERVENTION DEVELOPMENT, IMPLEMENTATION AND TESTING, SCALING UP AND SUSTAINING EFFECTIVE PREVENTION INTERVENTIONS

- Interventions address malleable risk, promotive, and protective factors specified in theoretical models of positive and negative behavior change that has been operationally modeled.

- Intervention and delivery systems consider characteristics of the target population (e.g., age, gender, race/ethnicity, culture, and developmental status), and its proximal or micro contexts (family, peers, schools, community, and workplace) and distal or macro contexts (e.g., population density, poverty rates, crime, community resources, and quality of the built/physical environment).

- Interventions are classified as universal, selective, and indicated based on risk distribution among the targeted population.

- Collaborative relationships between prevention researchers, constituents, key stakeholders (e.g., parents, educators, faith communities, recreation providers, mental and physical health practitioners, other service providers and their managers, political leaders, law enforcement, , and business leaders) and community prevention practitioners can provide critical support to the quality, implementation feasibility, use, and sustainability of the preventive effort.

- Refinements and/or adaptations can occur as interventions are embedded in service settings. These adaptations should be subject to empirical validation through systematic testing to examine efficacy.

- Standardization of intervention implementation requires documentation of intervention components, manualization, development of training and technical assistance, an organization to provide training and technical assistance, and guidelines for and monitoring of implementation fidelity and quality assurance.

- Sustainability and dissemination should be important considerations early in the development of an intervention. However, these elements should not completely determine the possible choices for intervention development.

- A series of research steps test the development of preventive interventions.

    - Pilot efforts examine feasibility and likely efficacy of the intervention.

    - Efficacy tests maximize internal validity to determine if the intervention demonstrates benefits consistent with the theory underlying its development.

    - Effectiveness trials maximize external validity by testing effects under conditions approximate to those in an actual delivery setting. The same outcomes achieved in the efficacy trial should be examined as well as uptake and fidelity of the intervention, personnel and system management cost, and sustainability.

    - Services research trials test questions related to the supports and conditions necessary for the translation of effective interventions to prevention service settings, including: recruitment and retention issues, decision-making processes, training and support strategies, and management methods.

- Dissemination research examines uptake of effective interventions in large-scale applications, robustness of effects under conditions of less optimal delivery, personnel and system management cost, and other policy issues affecting implementation, use, and sustained use.

- Prevention services questions should be addressed by exploring the supports and conditions necessary for the translation of effective interventions to community prevention service settings, including: recruitment and retention issues, delivery mode, planned decrements to fidelity, decision-making processes, training and support strategies, and management methods.

- Maximizing reliability and validity is essential to minimize measurement errors. Longitudinal studies require balance in the use of measures that provide consistency across time yet recognize changes in the developmental course contexts and investigate measurement psychometrics across populations.

- A variety of data collection methods are employed. Data are collected at different levels (e.g., individual, classroom, community) and multiple sources requiring consideration across levels and sources for subsequent analyses

- Data analyses address issues of attrition and missing data, the multilevel and nested features of the research design, and take full advantage of the longitudinal nature of the data.

- **Core Competencies—Intervention Development, implementation, and services research**

  - Understanding etiological theories, concepts, and models from diverse disciplines (e.g., biological, developmental, psychological, social, and behavioral) that explain the predictive relationships between relevant risk and protective factors and outcomes for different populations.

  - Understanding theories of behavior change to determine the optimal timing and structuring of intervention strategies.

  - Intervention development skills including understanding of human and environmental change processes, an array of intervention methods and therapeutic techniques, manualization, pedagogical techniques, and technical assistance processes.

  - Understanding theories of child, adolescent, and adult development that address core mechanisms for health behaviors change, such as learning and motivation. Knowledge of curriculum development and techniques that are age appropriate for addressing intentions, attitudes beliefs and behaviors.

  - Understanding how to engage stakeholders in the development or adaptation of population relevant interventions and how to match appropriate interventions to a community's prevention needs

  - Development of tools for intervention assessment including fidelity monitoring, process monitoring (quality of delivery, dosage levels) and participant assessment.

  - Intervention testing methodology and the internal and external validity of various designs. In addition to the type of design, mastery of other design issues including individual, group and cluster assignment, unit of assignment, unit of analysis, implications of different types of comparison groups, e.g., placebo, treatment as usual, no treatment, examination of subgroup differences, examination of moderation effects of baseline condition.

  - Sampling methods, including probability and non-probability sampling approaches, and the conditions in which each can be used effectively.

  - The application of a variety of data collection methodologies, e.g., interviews, computer-assisted, telephone, mail, observational data, biological data, qualitative methods, Ecological Momentary Assessment (EMA), web-based, ethnographic, and archival.

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- Multi-method, multi-agent approaches to measuring static and dynamic predictors and associated reliability and validity issues.

- Methods of participant recruitment and retention to minimize bias and missing data, and approaches to handle missing data whether through attrition or incomplete data collection.

- Testing meditational theoretical models operationalized in intervention studies, which posit processes and mechanisms through which intervention components are expected to affect target positive and negative behaviors.

Additional competencies are required for effectiveness and services research.

- Understand the structure and function of human service organizations and other systems (e.g., education, recreation, business, and built environment) to identify strategies for integrating and sustaining effective preventive interventions.

- Identify and develop effective collaborative relationships (e.g., team building, negotiation, and conflict management skills) with critical stakeholders and community partners for planning, implementing, and sustaining interventions.

- Demonstrate planning and implementation skills (e.g., material preparation, training, scheduling, knowledge and adherence to relevant regulations, and fiscal management).

- Understand measures of system change and sources of financial resources for prevention.

PREVENTION RESEARCH METHODS

PREFACE

The foundations of research methods for prevention draw heavily from the fields of social science, epidemiology and biostatistics. Other disciplines also base their research methods on these areas. The distinction for prevention research methodologies is related to the complexity of collecting, measuring, and analyzing nested, multi-level, multi-trait, longitudinal data.

PURPOSE

The purpose of prevention research methods is three-fold:

- Identifying risk and protective factors related to positive and negative health-related outcomes in a population.

- Understanding how identified risk, promotive, or protective factors, processes and mechanisms are related to positive and negative health-related outcomes as well as their distribution across stages of development, populations and geographic areas.

- Assess the efficacy, effectiveness, and dissemination of prevention interventions.

- Prevention research is guided by the theories that underlie the intervention. This research should identify the mediators of the intervention, examine the extent to which they are related to the outcomes of the interventions, and, specify their role in achieving these outcomes.

- Because of the complexity of prevention research, multidisciplinary teams address sampling, measurement, data collection and management, and data analysis. Therefore the research team includes population/problem expertise, design, sampling, data systems, and analytical experts.

- Rigorous scientific methods should be used to identify etiologic models and to test intervention outcome hypotheses. These methods reflect the type and setting in which the intervention is being implemented with recognition of the advantages and disadvantages of the research designs.

- Research design, measurement, and analyses reflect the underlying intervention theory. The theory lays out the specific relationships between constructs across time.

- Maximizing measurement reliability and validity is essential to minimize errors and assuring the quality of the study. Longitudinal studies require the use of measures that provide consistency across time, the developmental course of the research participants, and changing contexts.

- As in epidemiology, a variety of data collection methods are employed. Data are collected at different levels (e.g., individual, classroom, community) and multiple sources requiring integration across and within levels with consideration for subsequent analyses

- Data analyses address issues of attrition and missing data, the multilevel and nested features of the research design, and takes full advantage of the longitudinal nature of the data. For this reason, prevention researchers employ a variety of statistical techniques that have been developed specifically for prevention research or drawn from other fields with modifications for prevention intervention studies.

- Establishing and monitoring the various human subject issues, especially the protection of research participants and organizations.

CORE COMPETENCIES

There must be an understanding the underlying theory and working model of the intervention in order to select the appropriate research design, sample, measurements, and analytic approaches. In addition, researchers' core competencies should include knowledge of the following:

- Available research designs and data collection methods, including the advantages and limitations of each within different settings, involving different population groups, and type of intervention research (i.e., efficacy, effectiveness, field trials, systems trials).

- Knowledge of sampling theory and design, sampling methods, including probability and non-probability sampling approaches, and the conditions in which each can be used effectively.

- The application of a variety of data collection methodologies, e.g., interviews, computer-assisted, telephone, mail, observational data, biological data, qualitative methods, Ecological Momentary Assessment (EMA), web-based, ethnographic, and archival.

- Multi-method, multi-agent approaches to measuring static and dynamic predictors, including mediators (e.g., family process), moderators (e.g., gender and ethnicity), and associated reliability and validity issues.

- Longitudinal study designs, including participant recruitment and retention, to minimize bias and missing data.

- Measuring fidelity of intervention, quality of delivery, dosage levels, monitoring for adverse effects and other aspects of implementation from the individual to the community levels.

- Developing complex data bases that link variables across and within multi-level, multi-trait longitudinal data sets.

- Approaches to handling missing data whether through attrition or incomplete data collection. Understanding the differences between a variety of measurement levels and scales and associated implications for selecting analytic techniques.

- Multiple statistical methods for analyzing complex longitudinal data including multilevel, multitrait variables. Understanding of how to identify and model multiple levels of factors within the target population and rates of change across development, of predictors and outcomes (e.g., via growth modeling).

- Designing and implementing studies to test preventive intervention outcomes on risk, promotive and protective factors and positive and negative behaviors. Included here are also methods to assess the effects of the components of interventions on expected mediators the differential impact of varied delivery mechanisms on intervention outcomes, , as well as assessments of differential effects for sub populations.

Term	Definition
Analytic epidemiology	Examines etiology by seeking to identify the determinants and risk of disease and seeks to understand cause and effect relationships.
Built environment	Refers to the man-made surroundings that provide the setting for human activity, ranging in scale from personal shelter to neighborhoods to the large-scale civic surroundings.
Community Change	Community change focuses on community organization and community building as determinants of health, and involves a process in which community groups identify problems, mobilize resources, and design and implement strategies to reach common goals. Major models include: (1) *Locality Development*, primarily a process-oriented model that uses consensus and cooperation to build a sense of community and community capacity; (2) *Social Planning*, primarily a task-oriented model that uses rational-empirical problem solving with the help of an outside expert to solve immediate problems; and (3) *Social Action*, a confrontational, conflict-oriented model that seeks to change imbalances of power by redistributing power and resources.
Community-Based Participatory Research	Community-based Participatory Research (CBPR) is a collaborative approach to research that equitably involves all stakeholders in the process of defining the problem, identifying and implementing solutions, and evaluating outcomes. CBPR is founded on the principle that more comprehensive and participatory approaches are needed to address the complex set of multi-level determinants underlying major public health problems. While CBPR is useful during all stages of the intervention cycle, it is a key model for scaling up and sustainability efforts
Developmental Epidemiology	Mapping the variation in paths leading to health or disorders across the life course within defined populations
Developmental Mechanisms	The identified particulars of the mechanisms of change within a bio-psycho-social model of development. Embedded within developmental pathways, mechanisms make up the specific sub-strata of the developmental processes.
Developmental prevention	A prevention approach that focuses on strengthening promotive and protective factors and reducing risk factors. Developmental prevention takes into account the timing of developmental tasks, risk, protection, and outcomes and the interactive nature of these causal processes and the individual within multiple environments.
Developmentally appropriate	Responsive to the capabilities of the participants based on age or cognitive level, and the developmental stage-salient tasks facing them.

Term	Definition
Diffusion of innovation	Actions related to the adoption and delivery of effective programming. Diffusion of Innovation focuses on the widespread dissemination of successful innovations as a determinant of health. The process of dissemination includes: (1) *Innovation Development*, the development of the innovation; (2) *Dissemination*, the process to communicate about the innovation; (3) *Adoption,* the "uptake" of the innovation by the target population; (4) *Implementation*, the regular use of the innovation; and (5) *Maintenance,* a focus on sustainability and institutionalization of the behavior
Dissemination	Making information about effective programming available to practitioners, policymakers, and the public.
Dose	The amount of an intervention either specified in the model or actually experienced by the participants during the implementation of an intervention.
Ecology of human development	"The scientific study of the progressive, mutual accommodation between human beings and the changing properties of the immediate settings in which development occurs, including relationships among settings and by the larger contexts in which the settings are embedded" (Bronfenbrenner, 1979, p. 21). [3]
Effectiveness trial	An empirical study designed to test whether an intervention is effective under "real-world" conditions or in a "natural" setting.
Efficacy trial	An empirical study, conducted under ideal conditions, designed to test whether a specific intervention is effective for a specific population.

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[3] Bronfenbrenner, U. 1979. *The Ecology of Human Development: Experiments by Nature and Design.* Cambridge, MA: Harvard University Press.

Term	Definition
Health as a Right Movement	The Health as a Right Movement posits that no right can be protected without consideration of other rights; therefore, the right to health is dependent on protection & promotion of all other rights. The Health as a Right Movement emerged with the World Health Organization in 1946, with the principle that the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, political belief, or economic or social condition. Subsequent elaborations occurred with the International Conference on Primary Health Care in Alma Ata in 1978, and the Ottawa Charter for Health Promotion in 1986.
Health Disparities	Health disparities affect specific groups in the population that are in a position of social or economic disadvantage related to discrimination or exclusion because of gender, age, race or ethnicity, education or income, geographic location, disability, or sexual orientation. When disparities in health are due to systematic injustices, such as segregation and unequal treatment, the differences are termed health inequities. There are a number of social forces that produce health inequities including socioeconomic status, social capital, and collective efficacy. Environmental factors such as built environment and proximity to environmental hazards are also related to health inequities.
Human Rights Movement	Human Rights Movement is founded in the Universal Declaration of Human Rights, 1948. The Universal Declaration of Human Rights specifies basic human freedoms, legal protections, political freedoms, personal freedoms, and economic, social, and cultural rights. Subsequent development of the Human Rights Movement included the International Covenant on Civil and Political Rights in 1965, **the** International Covenant on Economic, Social and Cultural Rights in 1966, the Convention on the Elimination of Discrimination Against Women in 1979, and the Convention on the Rights of the Child in 1989.
Indicated intervention	An intervention designed for a particular subgroup in the population that is examination is found to be exhibiting prodromal signs or symptoms of problems due to their exposure to particular risks.
Intervention fidelity	The measure of how closely an intervention was delivered compared to how delivery was originally planned. Implementation quality is often quantified with measures of fidelity, dose, quality of delivery, and elements added to the intervention protocol.
Intervention Mediators	The promotive, risk, or protective factors that the intervention intends to manipulate and that are directly linked to the desired outcomes.

Term	Definition
Organizational Change	There are two major approaches to organizational change: a stage approach, and an organizational development approach. The basic premise of the stage approach is that organizations go through a set of stages as they engage in a change process, including awareness of a problem, initiating action to solve the problem, implementing changes, and institutionalizing changes. The basic premise of organizational development is that factors related to organizational functioning must be identified and changed. The Organizational Development process consists of four stages: (1) Assessing and improving group dynamics within the organization; (2) Encouraging shared goals; (3) Identifying organizational barriers to change; (4) Identifying and implementing new organizational policies and practices.
Outcomes	The intended effects of the intervention that can be short-, intermediate-, and long-term.
Positive behaviors	Outcomes such as physical health, psychological and emotional wellbeing, healthy family and social relationships, life skills, ethical behavior, educational attainment, constructive engagement in work or school, and civic engagement.
Problem behaviors or outcomes	Individual psychological, social, behavioral, or health conditions with demonstrable negative consequences for individuals or groups.
Promotive factor	A predictor with evidence of a longitudinal direct negative relationship with problems and/or a positive relationship with positive outcomes.
Protective factor	A predictor that shows evidence of moderating a risk-problem or risk-positive outcome relationship or that mediates the impact of a risk factor on a problem or positive behavior or outcome.
Replication	Repeated delivery and testing of the same or closely similar intervention.
Risk factor	A predictor with evidence of a longitudinal direct positive relationship with problems and/or a negative relationship with positive outcomes.
Selective intervention	An intervention designed for a subgroup of the population with elevated levels on one or more risk factors.
Services research	The study of organization, management, and delivery factors that influence the implementation, sustainability, and dissemination of efficacious preventive interventions.
Universal intervention	An intervention delivered without regard to the level of risk of individuals in the population.

STANDARDS OF KNOWLEDGE TASK FORCE

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