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<b>Identifier</b>	<b>Core – Cross Cutting Competencies</b>
CR-CC 1	Define, assess and report on the health status of populations, determinants of health and illness, and factors contributing to health promotion and disease prevention.
CR-CC 2	Determine uses and limitations of quantitative and qualitative methods in research and public health practice.
CR-CC 3	Communicate effectively both in writing and orally with policy makers, professionals, and the public.
CR-CC 4	Identify and address ethical issues that arise in public health practice and research.
CR-CC 5	Identify, retrieve, appraise, and apply scientific evidence relevant in the practice of public health.
CR-CC 6	Describe and utilize leadership, team building, negotiation, and conflict resolution skills to collaborate and build partnerships for the purpose of improving the public's health.
CR-CC 7	Identify organizational decision-making structures, stakeholders, style and processes.
CR-CC 8	Define a public health problem and specify an analytic approach.
CR-CC 9	Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.
CR-CC 10	Describe and apply the concepts of the 3 core functions and 10 essential public health services to inform public health practice.
CR-CC 11	Describe steps and strategies to consider when working collaboratively in a culturally-sensitive manner with diverse groups to promote the health of communities.
CR-CC 12	Describe the roles of history, power, privilege and structural inequality in producing health disparities.
CR-CC 13	Integrate professional ethics, principles of cultural competence and accountability in all professional conduct.
CR-CC 14	Explain the importance of a diverse public health workforce.

<b>Identifier</b>	<b>Core (CR) MPH Biostatistics Competencies</b>
CR-BIOS 1	Describe the roles that biostatistics serves in the disciplines of public health research.
CR-BIOS 2	Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions.
CR-BIOS 3	Describe basic concepts of probability, commonly used probability distributions, statistical accuracy, systematic and random variation, and statistical correlation.
CR-BIOS 4	Apply descriptive statistics and related techniques for expressing levels of confidence in estimators that are commonly used to summarize public health data, using statistical software.
CR-BIOS 5	Apply basic statistical estimation and inference methods, along with necessary assumptions, that apply to the commonly used statistical methods in public health, using statistical software.
CR-BIOS 6	Apply alternative statistical methods (e.g. nonparametric methods) when assumptions are not met completely or when working with small research data sources, using statistical software.
CR-BIOS 7	Apply basic database management principles to public health records, clinical observations or observational data to facilitate data analysis, data quality management and administrative and scientific reporting using a statistical software package.
CR-BIOS 8	Create and interpret results in summary tables (e.g., Table 1) of public health and other scientific publications.
CR-BIOS 9	Describe and interpret statistical analyses commonly done in public health studies in language and terms appropriate for both public health professionals and educated lay audiences.

<b>Identifier</b>	<b>Core (CR) MPH Community and Behavioral Health Competencies</b>
CR-CBHS 1	Identify theories, concepts and models from a range of social and behavioral disciplines used in public health research and practice.
CR-CBHS 2	Identify the social and behavioral factors that affect the health of individuals and populations.
CR-CBHS 3	Use a socio-ecological framework when identifying appropriate interventions to improve population health.
CR-CBHS 4	Identify community health needs and assets, including those at the individual, organizational, and community levels for the purpose of designing social and behavioral interventions to improve health.
CR-CBHS 5	Describe the merits and limitations of social and behavioral science programs and policies for improving population health.
CR-CBHS 6	Describe steps and methods for the planning, implementing and evaluating of evidence-based public health programs and policies.
CR-CBHS 7	Identify strategies for engaging stakeholders in planning, implementing and evaluating public health programs and policies.

<b>Identifier</b>	<b>Core (CR) MPH Environmental and Occupational Health Competencies</b>
CR-EHOH 1	Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents of regional, national, and global importance.
CR-EHOH 2	Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.
CR-EHOH 3	Specify approaches for assessing, preventing and controlling environmental and occupational hazards that pose risks to human health and safety.
CR-EHOH 4	Specify current environmental exposure and risk assessment methods.
CR-EHOH 5	Discuss various risk assessment, management and risk communication approaches in relation to issues of environmental justice and equity.
CR-EHOH 6	Develop a testable model of environmental insult.
CR-EHOH 7	Describe federal and state regulatory programs, guidelines and authorities that control environmental and occupational health issues.
CR-EHOH 8	Describe genetic, physiologic and psychological factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.

<b>Identifier</b>	<b>Core (CR) MPH Epidemiology Competencies</b>
CR-EPID 1	Compare strengths and limitations of various study designs and reports to answer public health questions.
CR-EPID 2	Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
CR-EPID 3	Describe a public health problem in terms of magnitude, person, time and place.
CR-EPID 4	Apply basic terminology and definitions of epidemiology.
CR-EPID 5	Identify key sources of data for epidemiologic purposes.
CR-EPID 6	Calculate basic epidemiology measures.
CR-EPID 7	Draw appropriate inferences from epidemiologic data.
CR-EPID 8	Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
CR-EPID 9	Identify the principles and limitations of public health screening and surveillance systems.

<b>Identifier</b>	<b>Core (CR) MPH Health Systems Management and Policy Competencies</b>
<b>Health Systems and Health Economics</b>	
CR-HSMP 1	Explain the effects of markets and political processes on the organization, financing and delivery of public and private health services in the U.S. system.
CR-HSMP 2	Describe commonly used methods for evaluating health economic policy, including the use of cost-benefit and cost-effectiveness analysis.
CR-HSMP 3	Distinguish between models used for financing and delivering healthcare.
<b>Management and Leadership</b>	
CR-HSMP 4	Identify key tenets of effective organizational and financial management and understand the strengths and limitations of different management approaches for improving population health.
CR-HSMP 5	Explain key elements of human resource management: defining roles and responsibilities; recruiting, motivating and retaining staffing; and assessing and applying measures for performance improvement.
CR-HSMP 6	Describe common quality and performance improvement tools and the appropriate times to use them in public health and healthcare settings.
CR-HSMP 7	Describe principles of budgeting and financial decision analysis in public health and healthcare settings.
CR-HSMP 8	Describe attributes of strategic leadership, including the use of vision, mission, values, goals and objectives.
<b>Policy</b>	
CR-HSMP 9	Identify and interpret key public health laws, regulations, and policies affecting health programs and the delivery of health services.
CR-HSMP 10	Describe commonly used frameworks for systematically and critically evaluating the policy development and implementation process at the federal, state, and local levels and outside the U.S.
CR-HSMP 11	Describe the importance of engaging stakeholders and building coalitions in the development or implementation of health policy.
CR-HSMP 12	Describe ethical considerations (such as social justice and human rights) affecting health policy and how the organization and delivery of health care in the U.S. contributes to health equity.

Identifier	MPH Applied Biostatistics Concentration (CN) Competencies
CN-BIOS 1	Select and apply appropriate biostatistical methods to support research and evaluation in the core areas of public health research and practice, including: epidemiology, environmental and occupational health, community and behavioral health, and public health systems management, policy and outcomes research.
CN-BIOS 2	Translate a study's scientific question or aims into testable statistical hypotheses and propose and apply appropriate statistical methods to test those hypotheses.
CN-BIOS 3	Test and interpret models for continuous outcome data (normal linear model), categorical outcome data (logistic and Poisson regression), and time-to-event data (Cox regression).
CN-BIOS 4	Apply the concepts of bias, error, confounding, effect modification, sampling, and generalizability and how they relate to interpretation of study results.
CN-BIOS 5	Carry out appropriate sample size and power calculations in basic situations to ensure that a study is sufficiently powered to achieve the scientific aims or address a specific research hypothesis.
CN-BIOS 6	Use computer software for data entry and data base management and for summarizing, analyzing and displaying research results.
CN-BIOS 7	Apply basic ethical concepts involved in collection, management, use and dissemination of biomedical and public health data.
CN-BIOS 8	Critically review and interpret basic statistical methods presented in public health and medical literature to identify strengths, weaknesses, and potential biases in these studies.
CN-BIOS 9	Apply scientific and statistical principles and methods to design basic public health and biomedical studies.
CN-BIOS 10	Use the principles of hypothesis testing and estimation of population parameters to draw inferences from quantitative data and communicate verbally and in writing those inferences and their statistical and scientific interpretation to non-statistical scientists.
CN-BIOS 11	Address a biomedical, public health or statistical research question with a basic statistical analysis (e.g. linear or logistic regression).



<b>Identifier</b>	<b>MPH Community and Behavioral Health Concentration (CN) Competencies</b>
CN-CBHS 1	Describe, select and apply appropriate theories, models, frameworks and evidence- based strategies for the development of health promotion, disease prevention, and disease management programs.
CN-CBHS 2	Describe and apply systematic approaches and methods to assess the health-related needs of communities and populations, taking into account individual, interpersonal, community and societal factors.
CN-CBHS 3	Utilize quantitative and qualitative data to identify disparities in health and inform the design and adaptation of culturally appropriate programs to promote health equity.
CN-CBHS 4	Use systematic approaches to conceive, design, implement and evaluate health promotion and disease prevention programs. Systematic approaches include the use of logic models, principles of Community Based Participatory Research, epidemiologic evidence, and evidence-based intervention strategies.
CN-CBHS 5	Identify and describe appropriate research designs for assessing program effectiveness.
CN-CBHS 6	Critically assess and select appropriate quantitative and qualitative measurement methods for assessing program reach, effectiveness, adoption, implementation, and sustainability.
CN-CBHS 7	Use clear, concise, and compelling oral, written, and visual methods for communicating program descriptions and study findings.
CN-CBHS 8	Effectively engage and collaborate with communities and stakeholders, in an equitable and ethical manner, including developing a work plan, communicating effectively and disseminating results.

<b>Identifier</b>	<b>MPH Environmental and Occupational Health Concentration (CN) Competencies</b>
CN-EHOH 1	Apply the range of epidemiologic methods in the analysis of environmentally determined health and the strengths and limitations of these methods.
CN-EHOH 2	Specify appropriate monitoring and other field methods for addressing environmental & occupational health problems.
CN-EHOH 3	Describe the dynamics of ecosystems and how they affect the movement of toxic agents in the environment and mediate related risks for human disease as well the quality of air, water, and climate.
CN-EHOH 4	Describe important current and emerging environmental health problems and variations in health risks across the global landscape.
CN-EHOH 5	Define the principles of sustainability and apply these principles in the development of solutions to environmental and occupational health problems.
CN-EHOH 6	Apply basic skills in geographic information systems (GIS) technology in the evaluation of environmental health problems.
CN-EHOH 7	Describe theoretical models and frameworks that inform the health, safety, and wellness of workers and related systems-level environmental and policy interventions designed to protect and promote worker health.
CN-EHOH 8	Identify the uses of biomarkers in evaluating exposures, health effects and susceptibility to environmental and occupational disease.
CN-EHOH 9	Explain the scientific characteristics, including exposure and mode of action, of major biological, chemical, physical hazards that result in human health risk.
CN-EHOH 10	Describe the policy framework that shapes environmental health at the federal, state and local levels and the historic and current decision-making processes that inform this framework.

<b>Identifier</b>	<b>MPH Epidemiology Concentration (CN) Competencies</b>
CN-EPID 1	Appropriately use descriptive epidemiologic methods to describe a given condition including measures of prevalence, incidence, morbidity, mortality, demographic characteristics and risk factors.
CN-EPID 2	Select and apply appropriate quantitative and qualitative measurement and analysis methods to support research and evaluations in the core areas of public health research and practice, including: epidemiology, environmental and occupational health, community and behavioral health, and public health systems management, policy and outcomes research.
CN-EPID 3	Critically review and interpret public health and other scientific literature to identify strengths and weaknesses of individual studies, to synthesize evidence in a research area, to identify gaps in evidence and to demonstrate relevance of current knowledge to the practice of public health.
CN-EPID 4	Translate investigator ideas into answerable research questions.
CN-EPID 5	Describe and select study designs, taking into account the advantages and limitations of each for addressing specific problems, as well as the practical aspects of their uses.
CN-EPID 6	Describe best practices for design of data collection forms and protocols, instrument reliability and validity, data monitoring and quality assurance, and data archiving for analysis and use of data by other investigators.
CN-EPID 7	Use computer software for data entry, database management, and summarizing, analyzing and displaying data.
CN-EPID 8	Apply and interpret the concepts of effect modification and interaction.
CN-EPID 9	Interpret statistical results in order to make appropriate inferences.
CN-EPID 10	Evaluate threats to internal validity and when critically evaluating strength of evidence.

<b>Identifier</b>	<b>MPH Health Systems Management and Policy Concentration (CN) Competencies</b>
Health Systems and Health Economics	
CN-HSMP 1	Analyze the effects of markets and political processes on the organization, financing and delivery of public and private health services in the U.S. system.
CN-HSMP 2	Apply commonly used methods for evaluating health economic policy, including the use of cost-benefit and cost-effectiveness analysis.
CN-HSMP 3	Evaluate differences between different models used for financing and delivering healthcare.
Management and Leadership	
CN-HSMP 4	Assess key tenets of effective organizational and financial management and evaluate the strengths and limitations of different management approaches for improving population health.
CN-HSMP 5	Explain key elements of human resource management: defining roles and responsibilities; recruiting, motivating and retaining staffing; and assessing and applying measures for performance improvement.
CN-HSMP 6	Apply common quality and performance improvement tools in public health and healthcare settings.
CN-HSMP 7	Apply principles of budgeting and financial decision analysis in public health and healthcare settings.
CN-HSMP 8	Examine attributes of strategic leadership, including the use of vision, mission, values, goals and objectives.
Policy	
CN-HSMP 9	Differentiate key public health laws, regulations, and policies affecting health programs and the delivery of health services
CN-HSMP 10	Investigate commonly used frameworks for systematically and critically evaluating the policy development and implementation process at the federal, state, and local levels and outside the U.S.
CN-HSMP 11	Develop a plan for engaging stakeholders and building coalitions in the development or implementation of health policy.
CN-HSMP 12	Analyze ethical considerations (such as social justice and human rights) affecting health policy and how the organization and delivery of health care in the U.S. contributes to health equity.

<b>Identifier</b>	<b>MPH Health System Management Concentration (CN) Competencies</b> Compared to the HSMP concentration, the HSM concentration has additional required coursework to build greater depth and breadth in management. Only competency 7 is different from HSMP.
Health Systems and Health Economics	
CN-HSM 1	Analyze the effects of markets and political processes on the organization, financing and delivery of public and private health services in the U.S. system.
CN-HSM 2	Apply commonly used methods for evaluating health economic policy, including the use of cost-benefit and cost-effectiveness analysis.
CN-HSM 3	Evaluate differences between different models used for financing and delivering healthcare.
Management and Leadership	
CN-HSM 4	Assess key tenets of effective organizational and financial management and evaluate the strengths and limitations of different management approaches for improving population health.
CN-HSM 5	Explain key elements of human resource management: defining roles and responsibilities; recruiting, motivating and retaining staffing; and assessing and applying measures for performance improvement.
CN-HSM 6	Apply common quality and performance improvement tools in public health and healthcare settings.
CN-HSM 7	Apply principles of accounting, budgeting and financial decision analysis in public health and healthcare settings.
CN-HSM 8	Examine attributes of strategic leadership, including the use of vision, mission, values, goals and objectives.
Policy	
CN-HSM 9	Differentiate key public health laws, regulations, and policies affecting health programs and the delivery of health services
CN-HSM 10	Investigate commonly used frameworks for systematically and critically evaluating the policy development and implementation process at the federal, state, and local levels and outside the U.S.
CN-HSM 11	Develop a plan for engaging stakeholders and building coalitions in the development or implementation of health policy.
CN-HSM 12	Analyze ethical considerations (such as social justice and human rights) affecting health policy and how the organization and delivery of health care in the U.S. contributes to health equity.

<b>Identifier</b>	<b>MPH Health Services Research Concentration (CN) Competencies</b> Compared to the HSMP concentration, the HSR concentration has additional required coursework to build greater depth and breadth in analytical competencies. Two additional competencies (13 and 14) address this.
Health Systems and Health Economics	
CN-HSR 1	Analyze the effects of markets and political processes on the organization, financing and delivery of public and private health services in the U.S. system.
CN-HSR 2	Apply commonly used methods for evaluating health economic policy, including the use of cost-benefit and cost-effectiveness analysis.
CN-HSR 3	Evaluate differences between different models used for financing and delivering healthcare.
Management and Leadership	
CN-HSR 4	Assess key tenets of effective organizational and financial management and evaluate the strengths and limitations of different management approaches for improving population health.
CN-HSR 5	Explain key elements of human resource management: defining roles and responsibilities; recruiting, motivating and retaining staffing; and assessing and applying measures for performance improvement.
CN-HSR 6	Apply common quality and performance improvement tools in public health and healthcare settings.
CN-HSR 7	Apply principles of budgeting and financial decision analysis in public health and healthcare settings.
CN-HSR 8	Examine attributes of strategic leadership, including the use of vision, mission, values, goals and objectives.
Policy	
CN-HSR 9	Differentiate key public health laws, regulations, and policies affecting health programs and the delivery of health services
CN-HSR 10	Investigate commonly used frameworks for systematically and critically evaluating the policy development and implementation process at the federal, state, and local levels and outside the U.S.
CN-HSR 11	Develop a plan for engaging stakeholders and building coalitions in the development or implementation of health policy.
CN-HSR 12	Analyze ethical considerations (such as social justice and human rights) affecting health policy and how the organization and delivery of health care in the U.S. contributes to health equity.
Health Services Research Methods	
CN-HSR 13	Accurately select, use and interpret commonly used statistics in health services research to test theory-driven hypotheses.
CN-HSR 14	Appropriately select healthcare databases and utilize information technologies in research.

<b>Identifier</b>	<b>MPH Global Health Plus Concentration (CN) Competencies</b>
CN-GLH 1	Describe and analyze the determinants and the globalization of health as well as the health status of a given jurisdiction using credible data sources.
CN-GLH 2	Describe contemporary and historic global health issues, programs, best practices and players.
CN-GLH 3	Apply critical thinking to the political, economic and ethical issues in global health.
CN-GLH 4	Identify and recommend public health field methods in the global arena and their correct application.

<b>Identifier</b>	<b>MPH Leadership and Public Health Practice Concentration (CN) Competencies</b>
CN-LPHP 1	Identify, interpret and implement public health laws, regulations and policies related to specific programs.
CN-LPHP 2	Advocate for public health programs and resources.
CN-LPHP 3	Articulate an achievable mission, set of core values and vision and uses these to guide action.
CN-LPHP 4	Identify internal and external issues that may impact delivery of essential public health services.
CN-LPHP 5	Apply leadership, team building, negotiation, and conflict resolution skills to collaborate and build partnerships for the purpose of improving the public's health.
CN-LPHP 6	Listen to others in an unbiased manner, respect points of view of others and promote the expression of diverse opinions and perspectives.
CN-LPHP 7	Effectively work with communities and stakeholders, in an equitable and ethical manner, including developing a work plan, communicating effectively and disseminating results.
CN-LPHP 8	Use the media, advanced technologies and community networks to communicate information.
CN-LPHP 9	Prepare and implement emergency response plans.
CN-LPHP 10	Establish and implement plans to investigate disease outbreaks
CN-LPHP 11	Develop mechanisms to monitor and evaluate programs for their effectiveness and quality.
CN-LPHP 12	Apply the principles of program planning, development, budgeting, management and evaluation in organizational and community initiatives.



<b>Identifier</b>	<b>MPH Maternal and Child Health Concentration (CN) Competencies</b>
Scientific Basis of MCH Public Health Practice	
CN-MCH 1	Describe MCH problems in terms of time, magnitude, scope, location, co-occurrence and co-morbidity.
CN-MCH 2	Apply knowledge of demographic, health, familial, socio-cultural, environmental and community factors to the design of MCH programs and services.
Methodological and Analytic	
CN-MCH 3	Apply appropriate research methods including research design, sampling, descriptive and inferential statistics and validity/reliability assessment of measures.
CN-MCH 4	Articulate the strengths and limitations of qualitative and quantitative methods.
CN-MCH 5	Use appropriate data collection strategies, including surveys, focus groups and record-based information.
CN-MCH 6	Prepare, interpret and make meaningful inferences on the health of MCH populations from vital statistics, censuses, surveys and service utilization records and translate those data into information.
CN-MCH 7	Conceptualize and appropriately use data to identify problems and assets and to plan, implement and evaluate programs.
Management and Communication	
CN-MCH 8	Develop mechanisms to monitor and evaluate programs and service networks for their effectiveness and quality, including the use of performance measures.
Policy and Advocacy	
CN-MCH 9	Apply knowledge of significant past and current national MCH legislative mandates to the development and delivery of MCH services.
CN-MCH 10	Apply theories and mechanisms of MCH policy development and implementation.

<b>Identifier</b>	<b>MPH Community Health Education Concentration (CN) Competencies</b>
CN-CHE 1	Conduct needs assessment, planning, implementation and evaluation for community-based public health education/promotion programs, policies and interventions.
CN-CHE 2	Identify and apply evidence-based principles and scientific knowledge to critical evaluation and decision-making in public health.
CN-CHE 3	Identify and apply individual, group and community-level theories, models, concepts and best practices to public health practice and problem solving.
CN-CHE 4	Identify, assess and address unique characteristics that affect public health within and among communities.
CN-CHE 5	Work collaboratively to develop, adapt and utilize appropriate methods for interacting professionally and effectively with people from diverse cultural, socioeconomic, educational, racial, ethnic, age, gender, sexual orientation, faith community and professional backgrounds.
CN-CHE 6	Develop public health education/promotion programs and strategies responsive to the cultural values, beliefs and traditions of diverse communities being served.
CN-CHE 7	Demonstrate the teamwork, leadership, communication, social and interpersonal skills necessary to collaborate effectively with agencies, coalitions and networks in communities in defining and addressing public health issues.

<b>Identifier</b>	<b>MPH Healthy Aging and Community Health Education Concentration (CN) Competencies</b>
CN-HACHE 1	Conduct needs assessment, planning, implementation and evaluation for community-based public health education/promotion programs, policies and interventions.
CN-HACHE 2	Identify and apply evidence-based principles and scientific knowledge to critical evaluation and decision-making in public health.
CN-HACHE 3	Identify and apply individual, group and community-level theories, models, concepts and best practices to public health practice and problem solving.
CN-HACHE 4	Identify, assess and address unique characteristics that affect public health within and among communities.
CN-HACHE 5	Work collaboratively to develop, adapt and utilize appropriate methods for interacting professionally and effectively with people from diverse cultural, socioeconomic, educational, racial, ethnic, age, gender, sexual orientation, faith community and professional backgrounds.
CN-HACHE 6	Develop public health education/promotion programs and strategies responsive to the cultural values, beliefs and traditions of diverse communities being served.
CN-HACHE 7	Demonstrate the teamwork, leadership, communication, social and interpersonal skills necessary to collaborate effectively with agencies, coalitions and networks in communities in defining and addressing public health issues.
CN-HACHE 8	Communicate the unique developmental aspects of aging: cognitive, psychological, social and emotional.
CN-HACHE 9	Evaluate and apply theories, models, concepts and best practices for providing community programs and services for older adults.
CN-HACHE 10	Develop comprehensive health education/promotion strategies and interventions for older adults.
CN-HACHE 11	Critically evaluate policies that impact older adults.

<b>Identifier</b>	<b>MPH Animals People and Environment Concentration (CN) Competencies</b>
CN-APE 1	Assess the public health threat of emerging issues to animal and human populations and identify intervention strategies.
CN-APE 2	Incorporate the principles of safe and secure food systems into public health problem solving.
CN-APE 3	Apply basic skills of message production and delivery for a target audience, which can be employed in a communication-based public health intervention.
CN-APE 4	Analyze how social, political and cultural differences can impact public perceptions about how human, environment and animal interactions affect public health, social well-being and environmental health.
CN-APE 5	Compare and contrast animal and plant agriculture production systems in the United States and analyze the related public health concerns.
CN-APE 6	Analyze public health concerns that have been related to various food production systems and how animal and plant agriculture impact public health and well-being.
CN-APE 7	Identify ways in which agricultural and human incursion positively and adversely impact environmental and ecological health, and develop methods of minimizing negative impacts.
CN-APE 8	Analyze issues regarding awareness and communication that impact optimal collaboration between human, animal, and environmental health professionals.
CN-APE 9	Apply biostatistical and epidemiological methods to public health issues that affect human and animal populations, and the surrounding environment.
CN-APE 10	Evaluate how public health skills and knowledge benefit agriculture industries and individual producers, and how knowledge of agriculture and environmental health benefit public health professionals.
CN-APE 11	Differentiate and properly use various types of infectious disease preventive measures.

<b>Identifier</b>	<b>MPH Epidemiology Concentration (CN) Competencies - CSU</b>
CN-EPID 1	Appropriately use descriptive epidemiologic methods to describe a given condition including measures of prevalence, incidence, morbidity, mortality, demographic characteristics and risk factors.
CN-EPID 2	Select and apply appropriate quantitative and qualitative measurement and analysis methods to support research and evaluations in the core areas of public health research and practice, including: epidemiology, environmental and occupational health, community and behavioral health, and public health systems management, policy and outcomes research.
CN-EPID 3	Critically review and interpret public health and other scientific literature to identify strengths and weaknesses of individual studies, to synthesize evidence in a research area, to identify gaps in evidence and to demonstrate relevance of current knowledge to the practice of public health.
CN-EPID 4	Translate investigator ideas into answerable research questions.
CN-EPID 5	Describe and select study designs, taking into account the advantages and limitations of each for addressing specific problems, as well as the practical aspects of their uses.
CN-EPID 6	Describe best practices for design of data collection forms and protocols, instrument reliability and validity, data monitoring and quality assurance, and data archiving for analysis and use of data by other investigators.
CN-EPID 7	Use computer software for data entry, database management, and summarizing, analyzing and displaying data.
CN-EPID 8	Apply and interpret the concepts of effect modification and interaction.
CN-EPID 9	Interpret statistical results in order to make appropriate inferences.
CN-EPID 10	Evaluate threats to internal validity and when critically evaluating strength of evidence.

<b>Identifier</b>	<b>MPH Global Health and Health Disparities Concentration (CN) Competencies</b>
CN-GHHD 1	Apply social, behavioral and cultural theory to analyze determinants and correlates of global health problems and their interrelationships.
CN-GHHD 2	Assess how social, behavioral, environmental, cultural and biological factors contribute to global health outcomes.
CN-GHHD 3	Incorporate the impacts of gender, race, poverty, history, migration and culture in the design and assessment of interventions addressing health disparities.
CN-GHHD 4	Analyze the impact of global trends and interdependencies on public health related problems and systems.
CN-GHHD 5	Construct health behavior change intervention plans and evaluations tailored appropriately for ethnically, culturally and socioeconomically diverse populations.
CN-GHHD 6	Identify the role of cultural, social, economic, and behavioral factors in the accessibility, availability, acceptability and delivery of public health services locally, nationally, and internationally.
CN-GHHD 7	Apply basic skills of message production and delivery for a target audience, which can be employed in a communication-based public health intervention.

<b>Identifier</b>	<b>MPH Health Communication Concentration (CN) Competencies</b>
CN-HCOM 1	Analyze the influences of social, organizational and individual factors on the use of information technology by end users.
CN-HCOM 2	Apply theory and strategy-based communication principles across different settings.
CN-HCOM 3	Apply basic skills of message production and delivery for a target audience, which can be employed in a communication-based public health intervention.
CN-HCOM 4	Identify the fundamental properties of the intended audience for a communication based intervention, including demographic, psychological, sociological, and cultural elements at all levels from interpersonal to mass.
CN-HCOM 5	Assess the critical relationship between formative and evaluative research in the ongoing delivery of a communication based intervention.
CN-HCOM 6	Apply the broad literature of communication theory and the subset of that literature specifically about health communication to public health communication practice.
CN-HCOM 7	Apply quantitative and qualitative social science research methods to interpret published communication research; apply findings to public health communication practice.

<b>Identifier</b>	<b>MPH Physical Activity and Healthy Lifestyles Concentration (CN) Competencies</b>
CN-PAHL 1	Identify and use public health data as a tool to develop and prioritize community-based interventions to promote physical activity.
CN-PAHL 2	Utilize epidemiological methods to develop and test hypotheses pertaining to physical activity and health and disease outcomes at the population level.
CN-PAHL 3	Apply social, behavioral and environmental models in physical activity intervention planning.
CN-PAHL 4	Apply basic skills of message production and delivery for a target audience, which can be employed in a communication-based public health intervention.
CN-PAHL 5	Assess the effects of physical activity on reducing chronic disease risk factors.
CN-PAHL 6	Utilize assessment tools to determine physical, social, cultural and environmental supports and barriers to physical activity.
CN-PAHL 7	Apply program design, implementation and evaluation strategies to promote, and address barriers to, adoption of healthy lifestyle behaviors.
CN-PAHL 8	Translate appropriate scientific information and data of evidence-based strategies to recommend healthy eating and active living promotion strategies.



<b>Identifier</b>	<b>MPH Public Health Nutrition Concentration (CN) Competencies</b>
CN-PHN 1	Apply biological principles for the development and implementation of public health nutrition programs targeted at disease prevention, control, or management.
CN-PHN 2	Assess and integrate information based on nutrition needs, the study of the scientific literature, and epidemiologic data to develop short and long range nutritional priorities and programs that will have the greatest impact.
CN-PHN 3	Incorporate principles of successful human behavior change in the development of effective nutrition interventions.
CN-PHN 4	Apply principles of community engagement to develop effective interventions to improve nutritional status of specific populations.
CN-PHN 5	Assess the role of policy interventions in improving dietary quality within communities.
CN-PHN 6	Monitor and evaluate the effectiveness of nutrition interventions, and modify interventional approaches as needed to improve nutritional outcomes.

<b>Identifier</b>	<b>Medical Doctor (MD)/MPH Dual Degree Competencies</b>
D-MD/MPH 1	Integrate public health skills and knowledge into the practice of medicine.
D-MD/MPH 2	Apply biostatistical and epidemiological methods to assessing the effectiveness of medical treatments.
D-MD/MPH 3	Identify the mutual commonalities of medicine and public health and be able to facilitate the communication among professionals in both fields.
D-MD/MPH 4	Identify diseases with public health impacts and methods for minimizing their effects on populations.
D-MD/MPH 5	Facilitate the translation of medical science discoveries to the provision of public health services.

<b>Identifier</b>	<b>Doctor of Veterinary Medicine(DVM)/MPH Dual Degree Competencies</b>
D-DVM/MPH 1	Integrate public health skills into the practice of veterinary medicine.
D-DVM/MPH 2	Apply epidemiological and biostatistical methods to veterinary public health issues that affects humans, domestic animals, livestock, and wildlife species.
D-DVM/MPH 3	Assess and manage animal diseases with public health impacts.
D-DVM-MPH 4	Describe food production systems and approaches to manage food security and safety.

<b>Identifier</b>	<b>Doctor of Nurse Practitioner (DNP)/MPH Dual Degree Competencies</b>
D-DNP/MPH 1	Implement ethical, competent nursing practice with individuals, families and communities based on understanding the human experiences of health, illness, healing and dying.
D-DNP/MPH 2	Use technology and information systems to promote health, facilitate appropriate and ethical decision-making, support collaboration, and foster communication.
D-DNP/MPH 3	Promote health and safe environments of local to global populations and communities through the development, implementation and evaluation of models, programs and policies.
D-DNP/MPH 4	Manage care ethically with individuals, families and populations to achieve quality, cost effective outcomes.
D-DNP/MPH 5	Advocate for social justice initiatives that enhance access, quality, and socio-cultural acceptability of health care for all.
D-DNP/MPH 6	Provide leadership in the delivery and management of health care for diverse populations and environments across the continuum of care.
D-DNP/MPH 7	Practice relationship-centered caring based on the human experience of health, illness, healing and dying.
D-DNP/MPH 8	Practice nursing reflectively, guided by theory, based on best evidence.
D-DNP/MPH 9	Participate in generating and testing knowledge regarding nursing science, nursing practice and health care delivery.
D-DNP/MPH 10	Engage in professional stewardship to improve interdisciplinary collaboration and nursing practice, education, research, and health care delivery.

<b>Identifier</b>	<b>Master of Public Affairs (MPA)/MPH Dual Degree Competencies</b>
D-MPA/MPH 1	Apply management and budgeting expertise to public health program administration.
D-MPA-MPH 2	Apply policy development and analysis skills to public health administration.
D-MPA-MPH 3	Utilize biostatistical and epidemiological knowledge in the formation of public policy.
D-MPA-MPH 4	Consider the social and behavioral influences on health when forming public policy.

<b>Identifier</b>	<b>Master of Urban and Regional Planning (MURP)/MPH Dual Degree Competencies</b>
D-MURP/MPH 1	Integrate public health skills into urban planning.
D-MURP/MPH 2	Consider social and behavioral aspects of urban design that promote or hinder population health when designing urban space.
D-MURP/MPH 3	Apply biostatistical and epidemiological methods to determine the health implications of urban design.