## *CDC/NOAA MOU*

Cooperative framework for CDC and NOAA to strengthen science and services so as to understand, communicate and reduce environmental and public health and safety impacts. Activities will utilize shared technologies and infrastructure to enhance the integration of climate water weather oceanographic ocean related marine animal and human health data and information to address public health issues.

## *Offices involved (partners):*

NOAA:
National Ocean Service (NOS)
National Marine Fisheries Service (NMFS)
National Weather Service (NWS)
National Environmental, Satellite, Data, and Information Service (NESDIS)
Office for Atmospheric Research (OAR)
CDC:
Office of Infectious Diseases (OID)
- National Center for Emerging and Zoonotic Diseases (NCEZID)
  - (Division of Vectorborne Diseases; Division of FoodborneWaterborne Environmental Diseases, Division of Preparedness and Emerging Infections- Arctic Investigations Program)
- National Center for Immunization and Respiratory Diseases (NCIRD)

Office of Non Communicable Diseases, Injury and Environmental Health (ONDIEH)
- National Center for Environmental Health

Office of Surveillance Epidemiology and Laboratory Services (OSELS)

The agreement formalizes a collaboration that recognizes the "One Health" approach to apply atmospheric, environmental, oceanographic, and ocean health knowledge expertise and methods to understand assess, predict, communicate and reduce public health impacts.

Specifically it allows parties within CDC and NOAA to engage in projects of mutual interest and responsibility to address existing or emerging public health issues.

## *Process:*

1) Identify points of contact for CDC and NOAA
2) Convene a Task Team to identify existing programs and projects under way and their deliverables relating to the scope of the MOU and
3) Develop an Action Plan
4) Meet biannually to review progress

## *CDC/NOAA Collaborative Projects Activities Current & Planned*

1) Sharing Satellite Data (aerosols, HABs, standing water, flooding/food supply issues)
2) Extreme Heat and Health
3) Public health impacts of drought
4) HABs monitoring and forecasting
5) Weather and climate related early warning and alerting
6) Linking Environmental data with a National Public health cohort study
7) Emergency Operations and Response
8) Collaboration on Zoonotic Infectious Diseases (diagnostics communication of risk)
9) Communication and messaging of health threats
10) Environmental Public Health Tracking Network)
11) Workforce training and education
12) Climate change and human health Workshop: Assessing the climate information gap
13) Climate and Health Federal Climate partners for NY &NJ workgroup
14) Guidance document on the public health impacts of drought.

## *Possible Future Directions*

1) National climate assessment follow up projects
2) Closer connection to address water borne/coastal disease and zoonotic transmission--linking health data and environmental info to develop health risk models or prediction. Discussion of marine diseases, V. para, coxiella
3) Better understanding of Vectorborne disease risk seasonally, (weather prediction)
4) Better path for collaboration on disasters--oil spill, radionuclides etc
5) Professional training/occupational safety and worker guidance
6) Air quality
7) Environmental heat and cold
8) Better preparedness/coordination during emergency response

## *Topical Categories for Intersection of Current NOAA/CDC activities*

*(Possible structure for implementation plan)*

1) Extreme weather and health impacts
2) Climate
3) Drought and floods
4) Air quality
5) Disease (both marine zoonotic disease and vector/waterborne diseases impacted by weather/climate)
6) Marine animal health/human health linkages (including subsistence foods, HABs, contaminants, disease)
7) Occupational safety/training as related to disaster/emergency response
8) Harmful algal blooms and marine pathogens and seafood-related illness

Need for data on human disease and health outcomes. Use Alaska as focus area. Ongoing activities in the area of Surveillance evaluations for infectious diseases, measurement of health impacts.

## *Functional Categories for Collaboration from NOAA/CDC MOU*

A. Scientific research: Parties may provide exchange of scientific expertise and personnel to collaborate and conduct joint research activities in the areas of climate, weather, water, environmental, oceanographic, atmospheric, and ocean health science as it relates to public health. Parties may also provide exchange of observational and model data, data analyses, joint funding of projects, and reviews of scientific research agendas as appropriate. Parties may provide laboratory research expertise for development of highly sensitive chemical and biological assays as needed.

B. Services: Parties may provide services, including but not limited to diagnostic testing, prediction and forecasting, assessment, emergency response support, technical/clinical public health guidance, and transition to operation services.

C. Communication and Information Dissemination: Parties may make available established communication, telecommunications, and dissemination networks or create and leverage networks and workgroups with state and local health departments, research groups funded through federal agencies, non-governmental research organizations with interest in building scientific and health related partnerships, and other agencies responsible for public health. Parties may provide joint communication and messaging on forecasts and warnings. Parties will collaborate to evaluate and communicate health risks, impacts, and benefits to communities as well as to marine animal or disaster response workers and volunteers.

D. Integrated Data and Surveillance: Parties will promote relevant national and international standards and data integration and fusion methodologies, data management practices and services, and may integrate or assure compatibility of existing NOAA climate, water, weather, oceanographic (physical, biogeochemical, biological, chemical), and marine animal health data with CDC public health surveillance systems, such as the Environmental Public Health Tracking Network (http://www.cdc.gov/nceh/tracking/), and national systems such as the National Biosurveillance Information (http://www.cdc.gov/osels/ph_surveillance/bc.html).

E. Training, Education, and Capacity Building: Opportunities for public health training may be provided by CDC for NOAA entities, and rotational opportunities or formal details with the NOAA offices and centers may be provided for CDC or other public health personnel (including commissioned officers of the U.S. Public Health Services) through Interagency Personnel Agreements (IPAs) or other mechanisms. Training opportunities may also include mid-career training, such as Epidemic Intelligence Service. Training courses may be provided on climate, weather, and water for public health personnel and on public health needs for atmospheric, oceanographic, and ocean health personnel; this may include continuing education courses.

F. Workshops and meetings: Parties may collaborate on a series of health-related workshops and/or stakeholder meetings to define collaborative actions, themes, and strategies to address validated research needs and service requirements. Examples of health topics that might be included are water-borne disease, vector-borne disease, disease progression, heat waves, and integrating marine wildlife disease data into public health surveillance.

G. Pilot projects and joint field projects: Parties may collaborate on domestic and international pilot projects and capacity development on topics of mutual interest and responsibility that aim to apply atmospheric, oceanographic, hydrographic, biological, chemical, or ocean health knowledge, data, expertise and/or approaches to reduce or prevent public health risks through increased understanding, improved policies, and informed decision making.

H. Global health and capacity development: Parties may collaborate to improve global capacities for addressing public health impacts, this may include cooperation with other Federal agencies (e.g. NIH and DOS), non-governmental organizations, and capacity development agencies (e.g. IFRC, CARE).