Program Element #23: Support of Acute and Communicable Disease Prevention (ACDP) Section Collaboration with Epidemiology and Laboratory Capacity (ELC) Programs (OHSU, VA, and OSU)

1. **Description.** Funds provided under this Agreement for this Program Element may only be used in accordance with, and subject to the requirements and limitations set forth below, to deliver activities and outcomes related to the OHA Acute and Communicable Disease Program (ACDP) Section Collaboration with Epidemiology and Laboratory Capacity (ELC) Program (OHSU, VA and OSU) to improve surveillance for and response to, infectious diseases and other Public Health threats.

2. **Staffing Requirements.** Grantee assures OHA that the following staff: Judith Guzman-Cottrill, Professor of Pediatrics, Dr. Chris Pfeiffer, Department of Hospital and Specialty Medicine, VA Portland Health Care System (VAPORHCS) and Assistant Professor of Medicine, OHSU; Dr. Jon Furuno, PhD, Department of Pharmacy Practice, Oregon State University (OSU), Shannon McWeeney, PhD, Department Chair, and Diane Doctor, MLSI, Internship Coordinator, Department of Medical Informatics and Computational Biology (DMICE):
   a. Are assigned to assist OHA ACDP planners in conducting the projects;
   b. Are available for and will devote amounts of time that are sufficient to ensure continuation of assigned ACDP surveillance projects;
   c. Will monitor the administration of ACDP surveillance projects;
   d. Will supervise Grantee staff persons, interns and physicians performing work associated with ACDP surveillance projects;
   e. Will design protocols for ACDP surveillance projects;
   f. Will coordinate activities associated with ACDP surveillance projects, as set forth herein;
   g. Will develop and deliver related education and training, as set forth herein, and
   h. Will ensure that adequate progress is made as outlined in their respective roles in the Multidrug Resistant Organism (MDRO) Surveillance and Response Network as set forth in Attachment 1 “ACDP Funded Grant Activities” to this Program Element Description and in accordance with the timelines and measures of effectiveness therein.

3. **Procedural and Operational Requirements.** Use and retention by Grantee of disbursements of financial assistance provided by OHA under this Agreement for ACDP surveillance projects is conditioned upon Grantee conducting the ACDP surveillance projects in accordance with the operational requirements and procedures and reporting requirements set forth herein, all satisfactory to OHA in its reasonable discretion. By accepting and using the Financial Assistance awarded under this Agreement and for this Program Element, Grantee agrees to conduct activities in accordance with the following requirements:
   a. **Continuing ELC Surveillance Project.**
      Multidrug Resistant Organism (MDRO) Surveillance. Grantee must establish and maintain the operation of the MDRO Surveillance for enhancing the capacity for early detection, reporting, and prevention of MDRO among physicians, medical care providers, and Local Public Health Authorities (LPHA) in Oregon.

      (1) **MDRO Surveillance Requirements.** Grantee affirms to OHA that Grantee possesses the operational capacity to maintain the administrative and operational capacity to conduct MDRO Surveillance activities in accordance with the provisions of this Agreement.

      (2) **MDRO Surveillance Procedures.** Grantee must observe the following procedures in conducting the MDRO Surveillance:
(a) Grantee must conduct MDRO Surveillance activities in accordance with the practices and protocols established by OHA for Continuing ELC Surveillance projects.

(b) Grantee must conduct surveillance of incidents of infection with MDRO among residents of the State of Oregon in accordance with investigative protocols established by Grantee for this purpose.

(c) Grantee must ensure that a qualified epidemiologist collects, compiles and submits data to Grantee concerning the incidence of infection with MDRO from hospital laboratories located within the State of Oregon.

(d) Grantee must consult with Oregon State Public Health Laboratory (OSPHL) to ensure that OSPHL maintains the technical and laboratory capacity to collect MDRO bacterial isolates from the State of Oregon hospitals for potential additional analysis and testing.

(e) Grantee will supervise OHA’s MDRO Surveillance Epidemiologist in conducting analysis of parts, or all, of the MDRO data contained in OHA surveillance database. OHA will determine the purpose, procedures and content of analysis in consultation with Grantee. The quality of the analysis conducted by Grantee and MDRO Surveillance Epidemiologist must satisfy CDC and OHA standards for quality, accuracy and statistical significance.

(f) Grantee must maintain confidentiality of patient records in accordance with OHA standards.

b. **Contingency ACDP Study Projects.** Grantee acknowledges and agrees that:

   (1) OHA may require the conduct of Contingency ACDP Study Projects of emerging infectious diseases from time to time over the term of this Agreement, subject to the mutual consent of OHA and Grantee and in accordance with a duly executed amendment to this Agreement.

   (2) OHA designations of a Contingency ACDP Study Project may be made in instances in which the numbers of, or the geographic concentration of, individuals who have been diagnosed with, or who present symptoms of, an emerging infectious disease, or in instances in which there is a reasonable risk of individuals developing an emerging infectious disease, cause the OHA ACDP Manager to designate a Contingency ACDP Study Project on a rapid-response, contingency basis.

   *Note:* The following subsections c. (1) thru c. (3) of Section 4. “OHA Designation of Contingency ACDP Study Project” sets forth the process by which OHA identifies a potential emerging infectious disease and by which OHA designates Contingency ACDP Study Projects.

c. **OHA Designation of Contingency ACDP Study Project.**

   (1) **Reporting a Potential Emerging Infection Situation to OHA.** OHA receives reporting of potential epidemic occurrences from physicians and medical service provider organizations such as the following:

   (a) Oregon Health and Sciences University (OHSU)

   (b) Local Public Health Authorities, in accordance with OHA Communicable Disease Investigative Guidelines, available at [http://www.dhs.state.or.us/publichealth/lhd/index.cfm](http://www.dhs.state.or.us/publichealth/lhd/index.cfm)

   (c) Hospital staff, physicians or other certified health professionals.

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(d) Disease control reporting systems in Oregon, such as the Health Alert Network (HAN).

(e) Other formal and informal means by which OHA is informed of an emerging infection situation.

(2) **Designation of Contingency ACDP Study Project by OHA.** OHA retains the authority to designate a Contingency EIP Study Project that is required to protect the public health interests of Oregon’s population. This designation authority resides with OHA to allow OHA to respond quickly to emerging infectious diseases that have the potential to become epidemics.

(3) **Initiation and Implementation of Contingency ACDP Study Project.**

(a) Following designation of Contingency ACDP Study Project by OHA Acute and Communicable Disease Prevention Manager, Grantee must provide Contingency ACDP Study Project services to OHA designed to prevent or control the potential communicable disease situation.

(b) Grantee must review existing and available data on the potential communicable disease situation.

(c) Grantee must confer with the public health officials and other experts whom Grantee, using professional judgment, determines are necessary to consult.

(d) Grantee must participate, upon request by OHA, in CDC consultations directed toward designing Contingency ACDP Study Project protocols.

(e) Grantee must design an epidemiological study to investigate the potential communicable disease situation, if, in the professional judgment of Grantee, an epidemiological study is required.

(f) Grantee must conduct or monitor, as necessary, data collection pertaining to the potential communicable disease situation.

(g) Grantee must conduct or monitor, as necessary, data compilation, analysis and interpretation pertaining to the potential communicable disease situation.

(h) Grantee must develop a written report pertaining to the potential communicable disease situation and submit the report in a timely manner to OHA.

(i) OHA and Grantee may agree, pursuant to future Grant agreements, if such agreements are executed by OHA and Grantee, to establish Contingency ACDP Study Project as Continuing ACDP Study Projects, in instances in which OHA and Grantee agree that continuation of the Contingency ACDP Study Project serves the public health interests of Oregon’s population.

(j) If the Contingency ACDP Study is deemed “research” by the OHA, Grantee must ensure that requirements of relevant Institutional Review Boards for the protection of human subjects involved in the Contingency ACDP Study are met.

(k) Grantee must maintain confidentiality of patient records in accordance with OHA standards.

d. **Bioinformatics Support at OSPHL.**

Analysis of whole genome sequencing (WGS) of bacterial pathogens for surveillance, outbreak investigations and antimicrobial resistance profiling. Grantee acknowledges and agrees that:

In consultation with the Laboratory Director of the Oregon State Public Health (OSPHL) the Grantee will designate an intern enrolled in the Bioinformatics and Computational Biology

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Master’s Program to provide bioinformatics support in the analysis of WGS of bacteria using CLCBio or Bionumerics software based on CDC PulseNet protocols.

4. **Reporting Obligations and Periodic Reporting Requirements.** In addition to the reporting obligations set forth in Exhibit A, Part 4, Section 5 “Reporting Requirements”, of this Agreement, Grantee shall provide written progress updates in accordance with a schedule that OHA determines in consultation with Grantee. Grantee shall submit the written progress updates as follows:

   a. Quarterly progress reporting, using a form approved for this use by OHA, on Continuing ACDP Study Projects.

   b. Periodically, as determined by OHA in consultation with Grantee, progress reports for Contingency ACDP Special Projects.

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1. **Activities**

Establish a regional MDRO program to better understand which MDROs are of greatest concern in Oregon, determine how to best respond to these threats, and provide response and prevention support for healthcare facilities. The program has 9 overall objectives:

a. Create a regional MDRO response network comprised of local and national experts;
b. Establish short- and long-term MDRO goals based on national and regional trends;
c. Identify MDROs to target and create facility-specific prevalence reports;
d. Determine the characteristics and relationship between targeted MDRO facility incidence with infection control and antimicrobial stewardship practices;
e. Describe MDRO transfer between hospitals and long-term care facilities;
f. Provide MDRO education and assistance to hospitals and long term-care providers;
g. Develop a protocol for use by public health and clinical laboratories to allow for rapid identification and response to targeted MDROs;
h. Conduct a statewide needs assessment of MDRO surveillance and response capacity and implementation;
i. Recruit a multi-disciplinary group of experts to assist with a regional MDRO response network;
j. Provide rapid facility-level assistance with response to targeted MDROs; and
k. Rapidly identify targeted MDROs and submit relevant isolates to CDC reference laboratories for further analysis.

The primary position responsible for this work will be the OHA ACDP MDRO Surveillance and Response Coordinator (MDRO Coordinator).

2. **Roles and Responsibilities**

a. **ACDP MDRO Surveillance and Response Coordinator**

Maureen Cassidy, the MDRO Coordinator will create and implement Oregon’s regional MDRO strategy. The MDRO Coordinator will work closely with ACDP’s HAI Program manager (see below). The MDRO Coordinator will:

(1) Recruit and consult with the regional network to devise the overall strategy and to determine MDROs to target;

(2) Oversee protocol development for prevention and control of MDROs;

(3) Conduct a statewide needs assessment;

(4) Monitor facility level prevalence of targeted MDROs;

(5) Provide rapid follow up for CRE cases;

(6) Assist with MDRO outbreaks;

(7) Evaluate the relationship between targeted MDROs and infection control characteristics of facilities; and

(8) Provide direct consultation to facilities and detailed assistance and response to targeted MDROs.

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b. **VA/OHSU Innovation and Laboratory Physician Expert Advisor**

Christopher Pfeiffer, MD, MHS, Department of Hospital and Specialty Medicine, VA Portland Health Care System (VAPORHCS) and Assistant Professor of Medicine, OHSU. Dr. Pfeiffer will:

1. Provide clinical expertise;
2. Support the MDRO Coordinator;
3. Serve in the response network;
4. Provide on-call support to the MDRO Coordinator and microbiologist in implementing appropriate laboratory methods for identification of CRE such as PCR, CarbaNP Test, and other novel methods and appropriate interpretation of antibiograms and ancillary tests submitted isolates;
5. Provide expertise on the relationship between laboratory data and infectious disease response and development of new methods, such as rapid gene sequencing for use in *C. difficile* and other MDRO outbreak investigations and response;
6. Assist the OSPHL with establishing laboratory capacity for identifying MDROs.
7. Lead a CDC-funded effort to implement CRE screening and a CRE registry at VA transplant centers;
8. Serve as the clinical microbiology-epidemiology liaison for the project;
9. Ensure that optimal methodology is used for specimen collection and processing, including both traditional culture and molecular evaluation;
10. Participate in CRE outbreak response; and
11. Provided assistance to develop and support the CRE educational material provided to facilities related to clinical microbiology.

**Timeline for Dr. Chris Pfeiffer**

<table>
<thead>
<tr>
<th>Timing</th>
<th>Activity</th>
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<tbody>
<tr>
<td>July 2017- July 2018</td>
<td>Provide on-call support for MDRO Coordinator and microbiology laboratory including support for all CP-CRE case investigations</td>
</tr>
<tr>
<td>July 2017- July 2018</td>
<td>Provide clinical infectious diseases and microbiology expertise as needed for ongoing program elements.</td>
</tr>
<tr>
<td>July 2017- July 2018</td>
<td>Lead a newly established Oregon Hospital Epidemiologist Task Force with a goal of developing an Oregon (or West Coast) MDRO Toolkit.</td>
</tr>
<tr>
<td>July 2017- July 2018</td>
<td>CRE surveillance: assist with data analysis and manuscript publication</td>
</tr>
<tr>
<td>July 2017- Mar 2018</td>
<td>Finish data collection for the ongoing OHSU CRE/MDRO Screening study. Complete study data analysis, presentation, and publication.</td>
</tr>
<tr>
<td>July 2017- Mar 2018</td>
<td>Complete survey tool analysis from 2016 statewide surveys of IPs, LTCFs, and microbiology Labs. Follow-up the already presented abstracts with publications.</td>
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<tr>
<td>Nov 2017-Mar 2018</td>
<td>Assist in survey tool development for 2018 survey, if performed.</td>
</tr>
<tr>
<td>Sept 2017-July 2018</td>
<td>Oversee further CRE/MDRO screening studies at additional study sites.</td>
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**c. OHSU Physician Faculty Advisor**

Judith Guzman-Cottrill, DO, from OHSU’s Division of Pediatric Infectious Diseases. Dr. Guzman-Cottrill will:

1. Provide clinical expertise;
2. Recruit and support Oregon hospitals to report AU and AR using the NHSN modules;
3. Provide healthcare epidemiology support to facilities that are currently involved in the Vermont Oxford Network (VON) NICU Quality Improvement Collaborative *iNICQ 2016: Choosing Antibiotics Wisely*.
4. Work with VON, CDC (an established partner for this project), and key Oregon hospital-level contacts: Infection prevention, pharmacy, and IT departments;
5. Collaborate with international experts in antibiotic stewardship, infection prevention, and healthcare epidemiology;
6. Create working relationships with Oregon NICU leadership and state HAI program.
7. Assist in development of Oregon MDRO Toolkit

**Timeline for Judith Guzman-Cottrill, DO**

<table>
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<tr>
<th>Timing</th>
<th>Activity</th>
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<tbody>
<tr>
<td>July 2017-June 2018</td>
<td>Support additional facilities to begin AU reporting, and determine the components needed for Oregon facilities to successfully report AR to NHSN.</td>
</tr>
<tr>
<td>July-December 2017</td>
<td>Provide hospital epidemiology expertise to the VON Choosing Wisely collaborative. Assist VON teams to partner with their state HAI programs.</td>
</tr>
<tr>
<td>July 2017-June 2018</td>
<td>Maintain database of all Oregon acute care hospitals, which includes the facility’s current state of readiness in terms of AU/AR NHSN reporting capability.</td>
</tr>
<tr>
<td>July 2017-June 2018</td>
<td>Assist in the development in MDRO Toolkit</td>
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**d. OSU/OHSU Pharmacy, Long Term Care, and Facility Transfer Expert Advisor**

Jon P. Furuno, PhD, Department of Pharmacy Practice, Oregon State University (OSU)/OHSU College of Pharmacy. Dr. Furuno will:

1. Provide methodological expertise and support for the MDRO Coordinator;
2. Serve in the response network; and
3. Lead scientific and administrative oversight of analyses using the Oregon All Payer All Claims (APAC) data;
4. Lead scientific and administrative oversight of 2015 and 2016 Oregon hospital and long-term care survey data

**Timeline for Jon Furuno, PhD**

<table>
<thead>
<tr>
<th>Timing</th>
<th>Activity</th>
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<tbody>
<tr>
<td>July 2017</td>
<td>Revise data use agreement for use of Oregon All Payer All Claims Data, Oregon death certificate data, and 2015 and 2016 Oregon hospital and long-term care survey data between OSU, OHSU, and OHA. Discussion and preparation of data extraction from Oregon APAC parent dataset</td>
</tr>
</tbody>
</table>
### Timing | Activity
--- | ---
July - August 2017 | Extraction of Oregon APAC data and transmission of survey to OSU for analysis.
September-December 2017 | Merge Oregon APAC data with Oregon death certificate data Data management and statistical analysis of merged APAC-death certificate dataset Data management and statistical analysis of Oregon hospital and long-term care survey data
January 2018 | Submit preliminary results from APAC analysis for presentation at SHEA Spring Meeting 2018
February-April 2018 | Preparation and submission of a manuscript on survey data results to a peer-reviewed journal
May - July 2018 | Preparation and submission of a manuscript on APAC analysis results to a peer-reviewed journal.

e. **OSU/OHSU Research Analyst**
Brie Noble, BS, Department of Pharmacy Practice, Oregon State University (OSU)/OHSU College of Pharmacy is a research analyst at Oregon State University. Brie Noble will:

(1) Provide data management, analysis, and preparation of results for dissemination under the supervision of Dr. Furuno.

f. **VA/OHSU Antimicrobial Stewardship Physician Advisor (in-kind)**
Graeme Forrest, MBBS, Division of Infectious Disease, Portland VA Medical Center and OHSU. Graeme Forrest will:

(1) Provide in-kind clinical expertise and consultation to provide on call support for the MDRO Coordinator;
(2) Serve on the expert panel for response to detected CRE cases or MDRO outbreaks; and
(3) Provide invaluable assistance for designing prevention efforts, which incorporate appropriate antimicrobial stewardship.

g. **OSPHL Microbiologist 2**
A microbiologist will:

(1) Provide expert consultation for laboratories to set up and standardize queries for identifying CRE or other targeted MDROs in order to ensure that the State receives as accurate and complete account as possible of CRE;
(2) Determine which submitted isolates meet CRE antimicrobial susceptibility criteria, use the MHT and PCR to identify and subtype carbapenemase producers;
(3) Ensure that isolates are correctly forwarded to CDC; and
(4) Assist in interpreting laboratory results.

h. **ACDP HAI Program Manager**
The HAI Program Manager will:

(1) Ensure that the MDRO response network maximally benefits from all available State resources;
(2) Oversee management of the budget and contract administration;

(3) Work with the MDRO Coordinator and expert panel to design the MDRO strategy, including identification and development of specific outcome and process measures, which, if possible, will be implemented in NHSN; and

(4) Work with the MDRO Coordinator to identify and gain assistance from experts, both locally through OHSU, OPSC, and APIC, and nationally, with CDC.

i. **ACDP HAI Research Analyst**

Diane Roy will:

1. Provide administrative and database support;
2. Schedule visits to medical facilities and laboratories;
3. Assist with creation and implementation of the MDRO database; and
4. Enter data and produce descriptive reports.

j. **ACDP HAI Epidemiologist (in-kind)**

Maureen Cassidy, MPH, will:

1. Provide in-kind support by continuing her work for the MuGSI project; and
2. Ensure that this work is adequately integrated with the newly enhanced surveillance, response and prevention efforts.

3. **Performance Measures**

<table>
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<tr>
<th>MEASURE</th>
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<tbody>
<tr>
<td>• Completion of feasibility survey of hospitals and long term care facilities</td>
<td></td>
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<tr>
<td># of members recruited for MDRO response network</td>
<td></td>
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<tr>
<td># of MDROs with short and long term targets defined</td>
<td></td>
</tr>
<tr>
<td># of facilities providing monthly reports of MDRO prevalence</td>
<td></td>
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<tr>
<td># of CRE cases with inter-facility form completed</td>
<td></td>
</tr>
<tr>
<td># of facilities used to describe potential inter-facility transfer of MDRO</td>
<td></td>
</tr>
<tr>
<td># of facilities participating in MDRO education efforts or receiving consultation</td>
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<tr>
<td>• Completion of protocol for public health and laboratory identification and response to MDRO</td>
<td></td>
</tr>
<tr>
<td># of facilities receiving rapid response assistance with individual CRE or targeted MDRO outbreaks</td>
<td></td>
</tr>
<tr>
<td># of targeted MDRO isolates shipped to CDC reference labs</td>
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Effective 9/17/2017
1. **Activities**

Continue OHSU/OSPHL Bioinformatics Internship to support implementation and development of the CDC PulseNet WGS program at OSPHL.

a. One intern per semester will: Learn Public Health Laboratory Practices related to surveillance and outbreak investigations of bacterial pathogens


c. Provide bioinformatics support and WGS analysis on a validation panel of enteric bacteria to meet regulatory performance standards for laboratory developed tests

d. Provide training to laboratory staff and ACDP epidemiologists on creation and interpretation of phylogenetic trees for determining relatedness of bacterial pathogens

2. **Roles and Responsibilities**

a. **OHSU DMICE** will:

   Work closely with the Intern and OSPHL Laboratory Director to:

   (1) Develop the Bioinformatics internship to suit the needs of the OSPHL and provide value to bioinformatics students

   (2) Ensure the intern has an understanding of the expectations of the internship including the time commitment and expertise he/she will provide at the OSPHL

   (3) Assist in recruiting an intern from the OHSU Bioinformatics Program

b. B. **OSPHL Laboratory Director** will:

   (1) Define the goals and objectives of bioinformatics internship and specific bioinformatics support depending on the stage of implementation of WGS.

   (2) Designate laboratory staff to provide the intern safety and security training and periods of observation of public health laboratory practices.

   (3) Monitor the progress of the intern and regularly communicate with the OHSU Internship Coordinator

**Timeline for OHSU Department of Medical Informatics & Clinical Epidemiology):**

*Shannon McWeeney, PhD*

<table>
<thead>
<tr>
<th>Timing</th>
<th>Activity</th>
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<tbody>
<tr>
<td>September-December 2017</td>
<td>Assist OSPHL Laboratory Director in promoting the Internship to prospective bioinformatics students</td>
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<tr>
<td>September 2017 - August 2018</td>
<td>Coordinate funding for Internship through OHSU Contracts Office</td>
</tr>
<tr>
<td>September-December 2017</td>
<td>Approve selection of intern for Fall Quarter*</td>
</tr>
<tr>
<td>January-April 2018</td>
<td>Approve selection of intern for Winter Quarter</td>
</tr>
<tr>
<td>September 2017- August 2018</td>
<td>Review periodic progress reports of Internship activities</td>
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</table>