

Office of Biomedical Advanced Research and Development
Authority (BARDA) Division of Research, Innovation & Ventures
(DRIVE)

Amendment 001 Issuance for Easy Broad Agency Announcement
(EZ-BAA) BAA-22-100-SOL-00003



The purpose of this Amendment is the following:

1) Add the descriptions of the following Areas of Interest (AOIs):

AOI #15: ReDIRECT

AOI #16: Lab at Home

AOI #17: Digital MCMs

AOI #18: Host-Directed Therapeutics

AOI #19: Healing Lungs

AOI #20: DRIVe Forward

AOI #21: Vaccines on Demand

AOI #22: ReBoot

AOI #23: Host-Based Diagnostics

INTRODUCTION AND OVERVIEW INFORMATION

A. Development Opportunity Objective:

Under this Amendment, DRIVe is doing the following:

- 1) Add the descriptions of the following research Areas of Interest (AOIs):

AOI #15: ReDIRECT
AOI #16: Lab at Home
AOI #17: Digital MCMs
AOI #18: Host-Directed Therapeutics
AOI #19: Healing Lungs
AOI #20: DRIVe Forward
AOI #21: Vaccines on Demand
AOI #22: ReBooT
AOI #23: Host-Based Diagnostics

We are seeking abstract submissions for the following AOI's:

AOI #15: ReDIRECT

The availability of effective medical countermeasures (MCMs) against chemical threats is critical in the treatment of their acute health effects. Necessary attributes of effective MCMs against chemical threats include ease of administration during a mass-casualty situation and rapid efficacy as a post-exposure therapy. Drug repurposing is a strategy that is used to identify new uses, outside of their original clinical indication, for FDA approved or late-stage investigational therapeutics. The identification of existing compounds for repurposing as MCMs holds the potential to expand current response capabilities to chemical threats, as well as potentially mitigating the costs and risks associated with conventional drug discovery.

BARDA is requesting abstract submissions for projects that repurpose existing therapeutics as MCMs against chemical threats (cyanide, opioids, nerve agents, chlorine, sulfur mustard, etc.). These therapeutics should have a strong mechanistic justification for potential use as MCMs. Ideal candidates for MCMs should have a known safety profile from previous clinical indications or development and be safe and effective for the entire population, including at-risk populations such as pediatrics, geriatrics, pregnant women, and immunocompromised individuals. MCM candidates should:

1. Already be approved or in clinical development for a conventional indication similar to the symptomology associated with exposure to a chemical agent; and
2. Utilize improved delivery routes or mechanisms that provide ease of administration (including, but not limited to, reformulation of existing products) to large numbers of exposed individuals during mass casualty situations. Priority will be given to products manufactured in the United States.

Therapeutics that are eligible for drug repurposing may target any of the following:

Pulmonary Agents: Development of MCMs to prevent and treat lung damage (including pulmonary edema, acute respiratory distress syndrome, pneumonitis, and fibrosis) resulting from exposure to agents such as chlorine, sulfur mustard and phosgene.

Opioids: Development of MCMs to treat life-threatening respiratory depression caused by opioid overdose. These post-exposure treatments should be quick-acting and effective against a variety of opioids, including synthetic opioids such as Fentanyl. Candidates should have a mechanism of action different from existing opioid receptor antagonists.

Vesicants: Development of MCMs that limit harmful aspects of exposure to vesicating agents such as sulfur mustard and Lewisite. Particular preference is given to drugs with potential to ameliorate the long term effects of exposure including Mustard Gas Keratopathy.

Knockdown Agents/Cellular Asphyxiants: Development of MCMs to treat acute poisoning from agents such as cyanides. Antidotes should be easily administered by first responders in personal protective equipment. Preference is given to those cyanide antidotes that are also effective against smoke inhalation-related exposure.

Nerve Agents and Organophosphorus (OP) Pesticides: Repurposing of MCMs to treat life-threatening and long-term effects of nerve agents and OP pesticides. Antidotes should be easily administered by first responders in personal protective equipment.

Computational approaches to identify candidates for drug repurposing: Development of improved methods to rapidly identify FDA approved or late stage candidate compounds that can be repurposed against any of the aforementioned chemical threats. Note, the highest priorities for these projects are those that focus on either (1) pulmonary injuries caused by chlorine or sulfur mustard or (2) respiratory stimulants (that are not mediated through the mu opioid receptor) for the treatment of opioid overdoses.

To be considered responsive under this AOI, respondents should have:

1. A drug that is a candidate for repurposing as a MCM against pulmonary agents, opioids, vesicants, **cellular asphyxiants** nerve agents, or organophosphate pesticides;
2. A clear commercial indication for the drug that is separate from its development as a MCM
3. **Plans to market the therapeutic for a primary indication separate from its use as a medical countermeasure.** Projects that propose therapeutics that will *only* be used as MCMs (even for more than one threat) are considered nonresponsive to this AOI.
4. At a minimum, an open Investigational New Drug Application and undergoing evaluation in Phase 1 clinical trials. Please note that preference will be given to companies that have an FDA approved drug, or one that has completed Phase 1 trials as evidenced by a clinical study report; and
5. A clear rationale as to why the candidate should be efficacious as a post-exposure chemical MCM.

Priority will be given to MCMs developed in the United States.

All potential respondents are *highly encouraged* to reach out to the program team for a market research call prior to submission.

AOI #16: Lab at Home

DRIVE is seeking proposals to develop novel platform technologies and instrumentation for on-demand detection of multiple biochemical health markers. The goal is to obtain (quantitative) information about patients' health status at the point of need and in a CLIA-waived environment without going through traditional central laboratory testing, which requires laboratory skills, long turn-around times, and can lead to delays in receiving care. Such platforms could enhance the capabilities of telemedicine by enabling data-driven diagnosis by physicians without requiring sample shipping or travel to a sample collection site. By enabling such testing, infection detection, chronic disease management, clinical trial management, etc. could potentially be greatly enhanced, leading to a healthier population with reduced healthcare costs. The instrumentation / platform technologies developed through this program are primarily intended for CLIA-waived settings such as the home, but could also be useful in doctor's offices, nursing homes, or immediate care facilities, where access to analytical results at the point of need is vital.

While DRIVE does not specify a particular platform form factor or sensing modality and will consider both desktop (portable) and wearable platforms, a successful platform technology will provide single time point quantitative measurements comparable to a central laboratory or continuous or near-continuous quantitative measurements from a wearable device. **The goal of projects funded through this AOI is feasibility demonstration of enabling technologies that allow for simultaneous detection and quantification of several different biochemical markers in a multiplexed manner.** Proposals focusing on pathogen detection may be considered, however, proposals focusing on SARS-CoV-2 and influenza, however, are outside of the scope.

Applicants should address the following in their proposals:

- The technological innovation.
- The scientific premise for interrogating a specific set of biomarkers using the proposed sample and method, as well as the clinical relevancy of those biomarkers.
- The desired limit of detection and accuracy of the proposed sensing modality.
- A plan for comparison between the proposed solution and the laboratory standard in function and clinical value, including how the novel technology could replicate the central laboratory function and/or outcome.
- A plan for how the data collected during the project will be compared to a laboratory standard.
- A plan to address critical feasibility issues that need to be demonstrated as a prerequisite to advancing the platform to a specific product application.
- A plan to demonstrate detection of several biochemical markers from a clinical sample in a multiplex assay.
- Preliminary data that supports the key assumptions of the proposal.

Examples of desired use cases include detection of host biochemical markers relevant to infectious diseases, radiological injury, rapid results of critical cardiac function, and wellness testing, among others. Biochemical markers of interest include, but are not limited to: host lipids,

proteins, nucleic acids, and small molecules; examples include bilirubin, creatinine, CRP, uric acid, triglycerides, hemoglobin, iron, calcium, potassium, IP-10, TRAIL, cortisol, etc.

Responsiveness criteria:

- Novel platform technologies should ideally provide quantitative biomarker data/detection of biomarkers when used by untrained personnel in the home or other CLIA-waived environment. Both desktop/portable and wearable form factors will be considered. Among wearable form factors, microneedle patches, smart tattoos and other innovations are particularly desired.
- The proposed platform technology should ideally produce quantitative test results and be readily adaptable to a broad menu of test panels (e.g., proteins, large molecules, lipids, etc.) to cover a wide range of disease states as well as standard health assessments.
- Proposals do not need to include interpretation of the biomarker levels for diagnostic purposes.
- Sample specimens should preferably be collected non-invasively at home by an untrained individual 18 years of age or older. Acceptable samples include saliva, urine, sweat, breath, nasal swabs, or minimally invasive samples such as finger stick blood or interstitial fluid. However, analytes measured from novel sample types should demonstrate comparability to values from samples used for analogous laboratory testing (i.e. venous blood samples).
- The entire testing process including sample collection, sample application to test, and test readout should preferably take no more than 2 hours. Alternatively, devices in wearable form factors producing multiple quantitative measurements per day will be considered. The test (or quantitative measurement) must be designed to be performed in the home or other CLIA-waived setting by untrained personnel 18 years of age or older.
- Any visual readouts confirming proper use of the system should be easy to interpret by lay individuals.
- The analytical performance (i.e., limit of detection, accuracy) of the proposed sensing modality should be clinically relevant and commensurate with up-to-date regulatory and public health guidance. Ideally, performance of the platform would be similar to the FDA-approved gold standard.
- Priority will be given to platforms being developed in the United States.

Other characteristics:

- The system may include a smartphone, mobile device, portable desktop device, or instrument for collection and transfer of data to a medical care provider, however, projects focusing chiefly on data transfer mechanisms will not be prioritized.
- The collection and transfer of data by the device or a mobile device should follow accepted data standards to allow connectivity with medical professionals, as well as comply with current privacy laws and guidelines.
- Plans for product commercialization, including a regulatory pathway, are desired but not required.

Non-responsive / out-of-scope topics:

- Proposals focusing on influenza and SARS-CoV-2.
- Technologies requiring venous blood draws or other invasive samples.
- Proposals combining at-home sample collection with testing at another location.

- Proposals focusing on clinical validation or clinical utility of existing technologies; infection severity/sepsis; or interpretation of quantitative biochemical results for diagnostic or triage purposes are not responsive. Interested applicants may consider AOI #23 instead.

AOI #17: Digital MCMs

BARDA/DRIVE is interested in supporting the development of innovative digital health diagnostic tools that can augment existing medical countermeasures against health security threats such as an infectious disease outbreak, a chemical or radiological attack, or other health security concerns. Tools must address conditions within BARDA's mission, which includes deliberate, natural, and emerging health security threats. These digital tools should be inexpensive, simple, and equitably accessible for health diagnosis and assessment. Digital health diagnostic tools can include smartphone/web applications based on data analytics approaches such as artificial intelligence (AI) / machine learning (ML.) The proposed projects can utilize data collected by sensors integrated within a smartphone or wearable device, or any existing data sources depending on the application. –The tools sought by DRIVE are intended to provide broadly available rapid response solutions, including illness detection, risk assessment, clinical intervention support, and public health guideline dissemination, among others.

In addition to the diagnostic applications, DRIVE is interested in supporting research and development of other highly innovative and disruptive digital tools that use data analytics approaches to augment existing medical countermeasures for health security threats within BARDA's mission space.

Proposed solutions must integrate stringent privacy and data security safeguards. Wherever appropriate, the solution proposed must have a regulatory path depending upon the intended use such as symptom checking, detection, screening, diagnostic, prevention, and therapeutic. Proposals should incorporate metrics relevant to user experience, user adoption, and the impact of the tool, and must justify the expected impact on the mitigation of the health security threat.

Project proposals should address the following:

- Demonstrate a digital-only tool for detection, prevention, or response to health security concerns. Digital tools include applications that can run on available smartphones, wearable devices, or computers without the need for any other hardware or assay components.
- The scientific premise for interrogating a specific set of conditions pertaining to health security using the proposed digital method, and the clinical relevancy of those conditions.
- Must provide proof-of-concept or supporting data for the digital tool depending upon the intended use.
- A plan for how data collected during the project will be validated along with relevant performance metrics to determine the accuracy of the proposed sensing modality.
- The analytical performance of the detection/diagnostic/screening algorithm should be commensurate with current state-of-the-art technologies, up-to-date regulatory and public health guidance.
- Plan for analytical and clinical validation of diagnostic performance with a study preferably focused on the population in the US.

- Specification of intended users of the tool and a plan for analysis of user experience relevant to the development stage of the application (e.g., the user needs analysis, usability study, demonstration of tool adoption, demonstration of clinical outcomes).
- The ability to transfer the results and data to a medical care provider depending upon the clinical relevance and the regulatory guidelines.
- The collection and transfer of data should follow accepted interoperability data standards to allow relevant connectivity with medical professionals and comply with current regulatory and security guidelines and privacy laws.
- Plans for product commercialization, including a regulatory strategy for engaging with the FDA for clearance/approval of the digital solution, if applicable.

Any proposed solution can focus on a single pathogen, disease state, etc. However, the fundamental technological approach should be threat-agnostic and generalizable to a set of other threat agents, when possible.

Proposers must address in their EZ-BAA abstract the following characteristics of their solution: innovation, efficacy (contribution to mitigating health security threats and reducing the direct impact of a pandemic), equity, ease of use, adaptability to a new disease, affordability, and broad and rapid availability. Proposers must include appropriate metrics for assessing tool adoption and the impact of the solution on mitigating the health security event.

Proposals focused on incremental improvement of existing digital apps or scale-up of existing digital tools may not be responsive.

Proposals describing any digital solutions that rely on hardware or assay components beyond what is already integrated with a smartphone, wearable device, or computer for implementation will be considered non-responsive.

AOI #18: Host-Directed Therapeutics

When health is compromised by an infection, the body can trigger a cascade of responses some of which may lead to dysregulation, organ dysfunction and even poor patient outcomes. Treatments aimed at modulating these responses, known as host-directed therapeutics (HDTs), have the potential to prevent, reduce or mitigate immediate and long-term harm by promoting a balance of healthy cell, tissue, immune system or organ function. BARDA is interested in advancing therapies aimed at fortifying and restoring balance to the body's defense mechanisms.

HDTs by design target universal responses, representing a threat agnostic approach for a variety of health security threats, including pandemics. Not only can they potentiate the effects of pathogen-based approaches, but HDTs help to reduce the morbidity and mortality of disease. They also offer a significant advantage for pandemic preparedness, such that in absence of pathogen identification and specific treatment, addressing the host response alone may offer a solution. DRIVE has recently launched a portfolio of investments around HDTs, supporting the continued development of new or repurposed drugs, biologics, cell-based products or devices to reduce infection progression to severe and long-term outcomes

Currently there are four focus areas for this topic which may change over time. Respondents may apply to any of the four areas individually or a combination, if appropriate: More detail follows below

- Patient stratification or endotyping approaches
 - Validation of common clinical characteristics or biomarkers to predict patient trajectory and outcomes in order to aid in clinical management as well as the ability to identify a patient subpopulation likely to benefit from a particular therapeutic
- Mitigating long-term effects of infectious disease
 - Development of HDTs that can be implemented early in the progression of disease or administered after an individual has resolved the acute phase of illness that can improve long-term outcomes of patients
- Preventing or mitigating severe outcomes of infectious disease
 - Development of HDTs to either prevent or mitigate severe outcomes of infectious disease, including ARDS and Sepsis.
- Repurposing Pulmonary disease therapies for Pandemic Preparedness
 - Repurposing HDTs that are either approved or in late-stage clinical development for other pulmonary non-infectious indications with potential utility for infectious pulmonary symptomology

Current focal areas:

1. Patient stratification or endotyping approaches
 - a. DRIVE is interested in validating stratification approaches and technologies that can aid in improved patient management or therapeutic intervention for infectious disease. Evidence suggests that common clinical characteristics or biomarkers can be used to predict patient trajectory and outcomes in order to aid in clinical management as well as to identification of patient subpopulation likely to benefit from a particular therapeutic. Potential uses of interest, include but are not limited to: clinical trial enrichment strategy, support clinical decision-making for an individual patient; and companion diagnostic to inform on therapeutic intervention. Of interest are approaches or technologies, based on individual patient characteristics, including host biomarkers, clinical data, physiological or vital sign data, or other information that can be utilized to inform on patient stratification.
 - b. Proposed stratification approaches should include prior clinical verification and a justification for the intended use and clinical impact. A stratification approach/diagnostic can be proposed either with a specific therapeutic candidate, or clinical management approach. However, the therapeutic must be FDA-approved or already in clinical development. The proposal must also describe the regulatory path and regulatory activities necessary for any products that would need to be regulated (i.e., therapeutic and/or diagnostic).
 - c. Proposed approaches should address the following:
 - i. Describe the scientific rationale to support use of the specific biomarker(s) or clinical characteristic(s) to identify patient populations that may predict benefit from a given therapeutic or align with specific clinical management approach.

- ii. Clearly describe the state of development of the therapeutic as well as the diagnostic (if appropriate) and regulatory strategy, as appropriate.
- iii. Include a clinical approach (retrospective or prospective data) to further support validation of the stratification approach.
- iv. Explain how the proposed scope of work improves clinical management and /or outcomes of patients compared to standard of care or clinical study design today.

2. Mitigating long-term effects of infectious disease

a. Any infection, whether due to a common pathogen (e.g. influenza, pneumococcus) or one associated with a pandemic (e.g. SARS-CoV-2) can give rise to complications and severe outcomes, such as hospitalization, acute respiratory distress syndrome (ARDS) and sepsis. Even after the acute illness is mitigated, a lingering threat of long-term health consequences may remain. These patients may experience health deterioration and continued morbidity that substantially affects the quality of life, and even mortality. Interventional therapies are needed to improve recovery of patients, reduce long term or chronic symptoms, and prevent future hospital readmissions. BARDA is seeking HDTs (including medical devices) to improve long-term patient outcomes (e.g., Long-COVID, post-acute sequelae of COVID-19 [PASC], post-intensive care syndrome [PICS], etc). Interest includes HDTs intended for use early in disease progression and/or following the acute phase of illness.

- i. Describe a clinical and regulatory development plan for the product that would lead to a US FDA indication. At a minimum, the HDT should be in clinical development with an existing IND filing or demonstrate intent to file during the course of the proposed project.
- ii. Propose appropriate quantitative endpoints to assess efficacy of therapeutic for long-term (>3 months) outcomes. Potential long-term effects may include but are not limited to: physical stamina; cognitive function; mortality; or hospital readmission. Studies should compare the therapeutic under development to an untreated population, following the same course of illness/infection.
- iii. Provide clear intended use statement for product in terms of population of interest, patient status indicated for treatment, treatment regimen, route of administration and clinical setting for administration.

3. Preventing or mitigating severe outcomes of infectious disease

a. Almost any threat can lead to infection and almost any infection can lead to severe outcomes such as sepsis and ARDS. Being fully prepared for known and emerging threats, requires being able to address these severe and potentially life-threatening outcomes. Sepsis is a life threatening condition due to host dysregulation and organ dysfunction, caused by the body's extreme response to an infection. Similarly, ARDS is a serious lung condition that may

arise from insult or infection to the lungs that results in low blood oxygen. There are currently no medical countermeasures approved and marketed for either sepsis or ARDS, leaving clinical management reliant on supportive care aimed at the symptomology of the organ dysfunction, but may not address the underlying host dysregulation. Without early intervention after infection, patients may succumb to these severe outcomes.

b. Following on the work of the Solving Sepsis program launched in 2018, DRIVE continues to build the portfolio of HDTs. This topic however expands the focus beyond sepsis, to all severe outcomes, including ARDS. DRIVE is interested in developing HDTs, to include, biologics, drugs, therapeutic devices, and cell-based therapies, that could either prevent or mitigate severe outcomes of infectious disease. Of particular interest are HDTs that are applicable to any setting along the continuum of care (e.g., pre-hospital, inpatient, nursing home).

c. Proposed approaches should address the following:

i. Provide regulatory strategy and plans for engagement with the FDA. At a minimum, an IND, IDE or Pre-submission should have already been submitted to the FDA or will be included as part of the proposed project.

ii. Provide stage of product candidate in clinical development. The candidate should either at the time of proposal submission or at completion of the project, have at a minimum, completed a Phase I clinical trial.

iii. Evaluation of biomarkers that may aid in patient stratification (see focus area 1 above – patient stratification or endotyping approaches) is of interest, but not required.

iv. Provide preliminary human clinical data to support justification for proposed indication for use and alignment with mechanism of action.

v. Provide clear outcomes and desired endpoints for the clinical development plan.

vi. Provide evidence of pre-established agreements with proposed partners (i.e., CROs, clinical sites, subcontractors) for relevant clinical studies, GMP manufacturers of product, etc.

4. Repurposing Pulmonary disease therapies for Pandemic Preparedness

a. Respiratory infections, which are among the most common public health threats can be caused by a variety of pathogens (viral, bacterial, fungal pathogens), leading to similar pathophysiology. Likewise, there are also a number of pulmonary diseases and syndromes where infection is not the primary causative agent, for example: chronic obstructive pulmonary disease (COPD); high altitude pulmonary edema (HAPE); and emphysema. The common pathophysiology observed between infectious and non-infectious disease states may present an opportunity for drug development. DRIVE is interested in repurposing HDTs that are either approved or in late-stage clinical development for other non-infectious indications with potential utility for similar infectious symptomology. The desire is to build upon successes found in other sectors to lower the risk of new HDTs for infectious disease. It is envisioned that these products would

most likely target symptomology, cell, and organ function, rather than immunomodulatory effects of the immune response to the infection.

b. Proposed approaches should address the following:

- i. Clearly identify the HDT (e.g., drug, biologic, cell-product, device) that you intend to repurpose for infectious disease indication.
- ii. Include a proposed intended use statement and population that would be treated.
- iii. Provide justification for why the drug is thought to work for pathology induced by multiple infectious diseases, based on the mechanism of action of the drug.
- iv. Include preliminary clinical data to support the desired indication. Products should at a minimum have an IND filed with the FDA.
- v. Provide the regulatory strategy to support NDA or BLA filing with the FDA. Any engagement and feedback from FDA should be summarized to justify your development approach.
- vi. Describe the intended route(s) of administration and dosing regimen of the candidate therapeutic, if appropriate.
- vii. Describe the clinical validation plan, including enrollment population and endpoints.
 1. Clinical studies should take into consideration the need to represent diverse populations and must be equitable in terms of enrollment, including diversity amongst race, ethnicity, and biological sex.
- viii. Evaluation of biomarkers that may aid in patient stratification (see focus area 1 above – patient stratification or endotyping approaches) is of interest, but not required.
- ix. Provide evidence of pre-established agreements with proposed partners (i.e., CROs, clinical sites, subcontractors) for relevant clinical studies, GMP manufacturers of product, etc.

The following would be considered out of scope for any of these above focal areas:

- a. Exploratory efforts to identify potential biomarkers/clinical characteristics to delineate patient sub-populations (i.e., biomarker discovery efforts).
- b. Products that target pathogens.
- c. Supportive care technologies that do not specifically improve clinical outcomes for patients.
- d. Exploratory research with no near-term translational application.
- e. Technologies or innovations that seek to simplify the implementation and operation of VV-ECMO, improve its safety profile, and potentially enhance its availability outside of specialized ECMO centers or non-ECMO methods of oxygen delivery (e.g., synthetic and mammalian cell-derived oxygen carriers) that may offer alternative options for severe ARDS management (please see Healing Lungs AOI #19).

AOI #19: Healing Lungs

Acute respiratory distress syndrome (ARDS) is a serious lung condition caused by multiple factors, including viral and bacterial infections, exposure to toxic radiation or chemicals, smoke inhalation, as well as trauma and severe chest injury. ARDS is characterized by an acute and diffuse lung inflammation associated with alveolar fluid accumulation and surfactant dysfunction, which results in improper lung function, leading to low blood oxygen and, in severe cases, causing lung tissue scarring and permanent respiratory impairment. Mechanical ventilation, which is currently the first-line intervention for ARDS patients, often results in further lung injury. Patients who do not respond to mechanical ventilation are more and more frequently placed on veno-venous extracorporeal membrane oxygenation (VV-ECMO), an intervention that remains labor-intensive, and costly, requiring highly specialized personnel, and prone to risks and complications. The Division of Research, Innovation, and Ventures (DRIVE) is interested in developing novel technologies to sustain healthy oxygenation levels in ARDS patients, as they heal naturally or await lung transplant, all the while preventing further tissue injury to already damaged lungs, and in advancing solutions for patients refractory to mechanical ventilation. DRIVE is seeking two types of novel technological solutions for severe ARDS patients: 1) non-ECMO methods of oxygen delivery (e.g., synthetic and mammalian cell-derived oxygen carriers) that may offer alternative options to severe ARDS management and 2) innovations that simplify the implementation and operation of VV-ECMO, improve its safety profile, and potentially enhance its availability outside of specialized ECMO centers.

DRIVE is interested in the following two focus areas, which cover oxygen carrier injectable products and VV-ECMO:

Alternative methods for oxygen delivery and/or carbon dioxide removal:

DRIVE is interested in **injectable compounds** or products that provide sufficient respiratory support to maintain patient oxygen saturation levels at 95% and above, are non-alloimmunizing, and can demonstrate an oxygen-carrying capacity similar to that of human hemoglobin (i.e., ~1.34 ml oxygen per gram). DRIVE seeks to develop technologies that allow repeated administration of oxygen and demonstrate reduced toxicity at effective dosage compared to current generation hemoglobin-based products and perfluorochemical emulsions. Responsive proposals shall discuss biocompatibility assessment and include an evaluation of the oxygen carrier efficacy and toxicity in an animal model recapitulating severe ARDS presentation in humans (i.e., PaO₂/FiO₂<100 mmHg). DRIVE is also interested in injectable compounds or products that provide sufficient respiratory support to maintain arterial carbon dioxide levels at 35-45 mmHg and/or prevent severe hypercarbia.

Solutions of interest include, but are not limited to:

- a. Perfluorocarbon (PFC)-based carriers, polymer-based hollow microparticles (PHMs), lipid-coated microbubbles (LOMs), synthetic or cell-based hemoglobin-based oxygen carriers (HBOC), and others
- b. Carriers that can be administered intravenously to support respiration without contribution from the lungs to enable lung tissue healing

VV-ECMO:

1. **Maintaining balance between pro- and anticoagulant states in ECMO patients:**
DRIVE is pursuing innovative technologies that maintain blood flow inside the circuit yet prevent pathological thrombosis and hemorrhage and reduce the need for systemic

anticoagulation or allow for ECMO to be administered anticoagulant-free for a minimum of 16 days. Responsive proposals shall include plans to evaluate the biocompatibility and anti-clotting properties of proposed technological solutions. Applicants should aim to conduct *in vivo* tests for at least 16 days, during which no clots or internal hemorrhage should occur and no embolic complications or adverse events resulting from clot formation should be recorded. The evaluation of proposed solutions will include an assessment of the hemostatic state and coagulation profile using a test panel composed of TEG, ACT, aPTT, PT, antithrombin III, von Willebrand factor, D-dimer, platelet, and fibrinogen concentration. Solutions should aim to maintain tests values within 10% of baseline for a minimum of 16 days. Projects seeking to develop systemic anticoagulant drugs are out of scope. Approaches that focus on dissolving existing clots will not be considered.

Solutions of interest include, but are not limited to:

- a. Novel coatings and modifications (e.g., solutions leveraging nitric oxide, tethered liquid perfluorocarbon, novel anticoagulant compound, or combinations of solutions) of the inner surface of circuit tubing and components such as the gas exchanger.
- b. Novel design of circuit components (e.g., oxygenator, tubing junction connectors) that improve blood flow path control, limit blood/surface contact, and enhance gas exchange rate, as well as supportive adjunct technologies (e.g., ultrasound-based platforms)
- c. Any approach that would combine technical innovations of several circuit components

2. Approaches that make ECMO more compact and portable, easier to implement and operate: DRIVE is interested in solutions that would ideally integrate the pump, oxygenator, and heat exchanger into a single miniaturized ECMO circuit component. However, submissions focused on miniaturizing one of these three components alone will also be considered. Responsive proposals shall include comparative studies evaluating the performance of miniaturized components against commercialized components and as part of a complete ECMO circuit. Teams of applicants are welcome to propose collaboration projects and submit their abstract together.

Proposed VV-ECMO solutions should ideally be compatible for use in combination with commercially available circuit components. VV-ECMO submissions shall provide evidence that the technology is ready for large animal testing and include an ovine or porcine ECMO model study using no less than 10 animals. Although large animal studies are preferred for both VV-ECMO topics, small animal studies that may be required for component miniaturization will be considered.

Submissions should address the following points:

- Detailed description of the technology and the innovation.
- Preliminary data that demonstrate the proposed approach is scientifically viable, feasible, and suitable for practical applications and product development. Applicants should provide a summary of their preliminary work in the abstract and additional details in attachments to their submission.
- Quantitative success metrics and plans to evaluate the safety and efficacy of the proposed solution as part of the project.

- Rationale for the choice of selected animal model, including a clear justification and evidence dictating the use of a large animal model rather than other models when appropriate. Applicants shall explain why a particular animal model is required at the stage of development reached by their technology.
- Regulatory and commercial strategies beyond the proposed study are desirable but not required.

Out-of-scope topics:

- Approaches relying on positive or negative air pressure systems and mechanical ventilation are out of scope. *Aerosol or gas inhalation formulations may be considered, however, if the proposed solution relies, at least in part, on a mechanism of action that enables gas exchange (i.e., compounds that deliver oxygen and/or remove carbon dioxide).*
- Inhalable therapeutic drugs that indirectly improve oxygenation by acting on the host response to lung injury or dysfunction are not responsive to this AOI.
- Platforms that have not reached, at minimum, a technology readiness level of 3 (TRL 3) and proposals for basic research projects that have not achieved preclinical proof of concept level of development will not be considered.

Additional considerations:

Awardees are encouraged, but not required, to share information and project progress with each other in quarterly meetings, and to consider testing their technology in combination with the innovations of others to assess their synergistic potential. All awarded projects will be reviewed quarterly by an internal review committee comprised of federal staff from BARDA and other federal entities.

AOI #20: DRIVe Forward

The continual threat of known and unknown emerging infectious diseases, pandemics, and other public health emergencies requires us to continually invest in products, capabilities, and technologies that have the potential to radically reshape and strengthen our ability to prevent, prepare for, and respond to those emergencies. Specifically, DRIVe aims to develop products, capabilities, and technologies to rapidly and agnostically detect threats, improve patient care, including ancillary supplies and resources, as well as novel approaches to develop, clinically validate, and deploy/distribute MCMs. DRIVe and BARDA already have a variety of specific programs, each focused on specific problems or threat areas of interest, that address this broader aim. DRIVe recognizes, however, that many promising approaches don't fit into any current program areas but would nonetheless advance DRIVe's mission. Accordingly, submissions under this DRIVe Forward Area of Interest, are designed to capture those blindspots either as a standalone proof of concepts or as a prelude to a potential future program. We are especially interested in proposals that aim to address one or more of the following topics:¹

- **Microbiome-based therapies:** Microbiome-based approaches capable of modulating the immune system to fortify against or treat infectious diseases

¹ Note that these topics will be updated regularly as science, technology, and BARDA DRIVe needs evolve.

(considering bacterial, viral and fungal), or to enhance the efficacy of other vaccine or therapeutic approaches. This focal area is not exclusive to the gut microbiome but includes microbiomes in other organ systems (e.g. skin, oral, nasal, genito-urinary tract, etc) that may be appropriate for therapeutic target.

- **Resilience to infection:** Interventional approaches that can prophylactically build tolerance and/or resilience to disease resulting from exposure to a pathogen. Typical prophylactic approaches include public health practices (e.g. mask wearing, wash hands) or vaccination, but there may also be other immune or host fortifying approaches (including pharmacological and non-pharmacological interventions, nutraceuticals, etc) that can be administered to individuals prior to exposure to a pathogen that can reduce the risk of infection or severe outcomes. These approaches should be scientifically sound and be supported by strong pre-clinical or clinical evidence. Interest is in approaches/technologies that require further clinical validation to support IND Filing.
- **Next-generation vaccines:** Approaches (including *in silico*) that improve or can enable the improvement of the design, selection, manufacturing, studies, effectiveness of current vaccine platforms (e.g. mRNA) or represent new platforms with enhanced performance, including those that are broad-acting against a family of pathogens or can effectively activate more persistent immunity or stimulate a more robust response, by stimulating T-cell driven immunity.
- **Next-generation therapeutic antibodies.** Approaches that can improve the design, selection, manufacturing, effectiveness, and cost of therapeutic antibodies or represent new platforms with enhanced performance, reduced cost and faster, on-demand manufacturing in the context of a rapid response to an emerging outbreak.
- **Artificial blood products.** Approaches that can provide safe, easily manufacturable, stable under typical storage conditions, and offer widely useful alternatives to human-derived blood, for use in trauma settings, mass casualty events, and in case of unexpected demand or supply shocks such as during pandemic events or other public health emergencies.
- **Extremely mobile viral diagnostic platforms for use in extremely remote settings.** Light, portable, diagnostic platforms that can be carried by hand, can be self-powered (e.g. solar-charged), for use in extremely remote settings. The platform would need to qualitatively assess known viral families, particularly filoviruses, and can accept multiple sample types and minimize user intervention (e.g. use of finger sticks and avoiding the need for complex sample preparation), as well as be ruggedized and environmentally stable for extended periods of time..
- **Non-pharmacological approaches for enhanced immunity:** Non-pharmacological interventions, notably photo, thermal, sonic, or electrical have potential to either build tolerance, increase immunity, modulate host response, or improve clinical outcomes as adjunctive approaches for vaccination or treatment. Note these approaches are not meant to be the treatment itself but as an adjuvant to enhance an existing approach. Behavioral and psychological approaches would be considered out of scope at this time. Approaches should have

initial strong animal or human clinical data, have an understanding of the mechanism of action, and have identified any companion product (if relevant) for the desired indication.

If you have an idea that does not fit into one of the above categories, we still encourage you to seek a market research call per the process described below and potentially submit an abstract. We will consider other innovative concepts within the BARDA mission space.

All interested parties should reach out to DRiVe with a description of the technology, its innovation, and its impact on a public health emergency via email to DRIVE_Forward@hhs.gov. We will invite a select set of interested parties for a market research call. Abstracts will only be accepted from applicants who have completed a market research call prior to submission.

All eligible EZ BAA submissions must address the following attributes of the proposed technology:

- **Scientific attributes:** preliminary data, clear metrics of project success, performance goals and limits of the proposed solution, and comparison with the established technology standard.
- **Impact attributes:** innovation, impact on technology landscape, impact on public health landscape, equity, and commercialization timeline.

AOI #21: Vaccines on Demand

Vaccines can be highly effective long-term medical countermeasures against biological attacks as well as emerging infectious diseases with pandemic potential. Current strategies for preparedness and response primarily focus on centralized, commercial scale manufacturing followed by the stockpiling of vaccines, if needed. This strategy is operationally inefficient and costly when considering the resources needed to manufacture, distribute, and administer vaccines during public health emergencies, especially if strains of the target emerge that reduce or eliminate the protective immunity conferred by vaccination.

There are several vulnerabilities in the existing model that impede rapid response capability. These include:

- i. Bottlenecks in centralized large-scale manufacturing practices;
- ii. Long lead times in raw material acquisition, release testing, and availability of manufacturing space;
- iii. Geographic limitations of the stockpile and manufacturing facilities that compromise the ability to distribute vaccines in a timely manner; and
- iv. Rapid clinical testing for efficacy and regulatory approval.

BARDA is seeking abstracts that will advance the development of On Demand Vaccine Manufacturing technologies/systems for distributed vaccine production at or near the point-of-service, with a particular focus on nucleic acid-based vaccines. We are looking for technologies that would address one or more of the following key aspects of the desired end state:

1. *Easily definable inputs:* The platform would utilize materials for vaccine manufacture that are easily sourced and handled within the device.

2. *Minimal to no release testing*: The platform would enable decentralized production by integrating in-line production testing and traceable documentation into the manufacturing process.
3. *In-line formulation capabilities*: The platform would enable formulation in a single, closed system.
4. *Logistically useful footprint*: The platform would possess a sufficiently small footprint to enable its use in facilities proximal to hospitals, pharmacies, or clinics.
5. *Small-scale validation*: The platform would be subject to validation of manufacturing for regulatory purposes.
6. *Plug and play capability*: The platform would utilize integrated precursor API materials, such as chemical or biological cartridges, for simple ‘plug-and-play’ operations.

Offerors are not expected to meet all the performance criteria outlined above. Rather, they can meet a few of the criteria with the expectation that improvement and optimization of the design will occur within the period of performance of a potential award.

Technology Product Profile

System Characteristics	Goal
Number of doses per batch	>1000
Number of days per batch	<7
Number of batches per resupply	1
Release Testing	Near real time/<24hour readouts
In-line Formulation	Fully automated, plug and play capability

To improve the United States’ posture for pandemic preparedness, the development of novel production and deployment capabilities for vaccines is warranted. In this solicitation, BARDA has a goal of demonstrating the proof-of-concept for technologies that would be able to produce nucleic acid-based vaccines *ON DEMAND*, where “on demand” is defined as the rapidly responsive production of a vaccine following the receipt of a pathogen’s genetic or antigen sequence, with an eventual goal of in-line formulation and release testing.

The end goal of this AOI is to generate proof-of-concept data from the proposed platforms that demonstrate *ON DEMAND* production of >1000 doses of a nucleic acid-based vaccine within one week.

AOI #22: ReBoot

Antiviral therapeutics have the potential to impact multiple viruses that utilize conserved mechanisms of action for infection, require specific host proteins for infection, or share conserved viral proteins. Typically, antivirals are advanced for one indication, but they may have efficacy against other related pathogens. As the commercial market for products targeting filoviruses is small and evaluation of candidates requires access to BSL4 facilities, product developers have limited incentive to test candidate products against filoviruses. Under the ReBoot program, the Antivirals and Antitoxins (AVAT) branch aims to support the testing and evaluation of candidate antiviral therapeutics that have been developed past Phase 1 clinical trials for another indication, but which have a mechanism of action likely to be effective against filoviruses (including but not limited to *Zaire ebolavirus*, *Sudan ebolavirus*, and *Marburg*

marburgvirus). Products could then be considered for additional funding under the BARDA Broad Area Announcement (BAA-22-100-SOL-00003).

BARDA is requesting abstract submissions for projects that evaluate existing therapeutics as medical countermeasure (MCM) against filoviruses. The candidates, either direct acting antivirals or host directed products, should have the potential to complement existing therapies by improving patient outcomes or serve as effective monotherapies against filoviruses. Broad spectrum antivirals with anticipated efficacy against multiple species or genera of viruses are preferred. Also, products that are orally available and have room temperature storage will be preferred. The ReBooT program will primarily focus on proposals for preclinical efficacy studies (i.e. efficacy in animal models of filovirus disease); such proposals should clearly delineate the proposed study design; laboratory partners, if required; outcome measures; and proposed threshold for study success, which could guide go/no go decisions for follow on funding. Proposals focusing on chemistry manufacturing and controls (CMC) activities, safety/toxicity, or other studies that will facilitate evaluation of the product as a viable candidate to treat filovirus infection will also be considered.

To be considered responsive under this AOI, respondents should propose late-stage (past Phase 1) or licensed antiviral products meeting the following requirements:

- 1) *In vitro* data against filoviruses and/or *in vivo* efficacy data in appropriate small animal models of filovirus disease and/or a mechanism of action that is anticipated to have efficacy against filoviruses; and
- 2) Known and acceptable safety and toxicology profiles evidenced by Phase I results OR licensed for another clinical indication and with the potential to undergo label expansion; and
- 3) Freedom to operate for other indications.

Out of scope products:

1. Drugs with Phase I failures or withdrawn from market for safety reasons as well as drugs with black box labels will not be supported.
2. Development of vaccines will not be supported.

Future amendments to this AOI may expand the scope of interest to other RNA viruses of pandemic potential.

AOI #23: Host-Based Diagnostics

When health is compromised by an infection or injury, the body's response can trigger a cascade of protective activities. Host-based diagnostics (HBDs) focus on these responses, not the threat itself, providing a threat agnostic complement to pathogen-based diagnostics. HBDs can aid clinical decision making by providing insight into a patient's past infectious status, current immunity, infection severity, or future status, including the trajectory of deterioration to severe outcomes (e.g. sepsis). These threat agnostic approaches not only have potential to map an individual patient's status- HBDs can also help address existing gaps in our ability to respond to unidentified threats.

DRIVE has built a portfolio of investments around HBDs, representing tools that evaluate the host response to infection in order to prognosticate disease severity or aid in triaging patients, in a pathogen-agnostic manner. HBDs encompass a broad range of technologies capable of leveraging various data types from an individual such as genomic biomarkers, cellular responses and physiological data, which may be analyzed by integrated algorithms. We aim to bolster national preparedness by supporting the development, validation, and regulatory approval of host-based tools and approaches, with an emphasis on assessment of their clinical utility.

Currently there are 3 areas of focus for this topic which may change over time. Respondents may propose to any of the three areas individually or a combination, if appropriate.

Focal areas:

1. Determination of immunological status post infection

a. BARDA is interested in the development of diagnostic technologies that can provide insight into patient immunological status after acute infection as this could inform on future health trajectory, persistent immunity, presence of chronic infection or perhaps insight regarding the initial infection. The traditional assessment of exposure to pathogens or immunity status relies heavily on serology-based assays. Although antibodies are often the hallmark of a protective response to infection or vaccination, detected antibodies may not always be neutralizing. Focusing on the humoral arm of immunity alone, in absence of insight to cell-mediated responses, may provide a limited perspective on what contributes to a complex, robust, protective immune response.

b. BARDA is interested in novel HBD approaches that may provide a signature of a patient's original infection or insight into their current immunological state in order to further guide clinical management. For example, T cells complement the humoral response and are thought to play a role in enduring immunity. Likewise, epigenetic modifications have been correlated with pathogen induced effects. BARDA is interested in developing such diagnostic approaches, to include but not limited to T-cell based immunity or epigenetic markers, that can inform on a patient's prior infectious status or current status of immunity.

c. Proposed approaches should address the following:

i. Proposed functional assays should consider turnaround time.

Provide justification for utility in clinical settings appropriate to inform patient interventions.

ii. Address the means for sample collection and details on assay mechanism

iii. Describe platform and clinical setting for use

iv. Provide a clear intended use statement for the assay

v. Technologies and assays should be pathogen-agnostic and amenable to use across a number of pathogens. However, for the proposal, please define a specific use case that may address an unmet need. These are meant to provide examples, but interest is not limited to the following:

1. Ability to distinguish between natural exposure and response to vaccination, or different pathogen variants

2. Determination of long-term/persistent immunity status to inform on the need for booster shots or vaccine efficacy in an individual
 3. Predict a patient's risk for severe disease to inform on triage and individual care
 4. Establish correlates of protection that can aid in clinical management
- vi. Describe the agility of the assay, that is the ability to pivot the technology such that it may be of use in measuring immune responses to different viral, bacterial, or fungal pathogen (e.g. development time)
 - vii. Describe the assay's ability to be rapidly scaled and distributed to multiple healthcare locations –i.e., not dependent on single laboratory point for analysis that could lead to delays
 - viii. Information on how results/data will be interpreted through analysis and output (e.g., through AI/software-assisted image analysis) for ease of use (including in remote settings)
 - ix. Proposals should present a clear FDA regulatory path for approval/clearance (if appropriate) and, if available, evidence of engagement with regulatory authorities.
 - x. Approaches should be at a minimum stage of clinical development and verification. Provide preliminary data to support use to support clinical indication (e.g., analyzed patient samples, initial performance data)
 - xi. Clinical studies should include equitable data collection, representation across the sexes, and a diverse sample of racial and ethnic groups where scientifically appropriate.
 1. Describe ability to analyze data from diverse populations, including immunosuppressed or immunocompromised populations, or explanation if certain populations would not be amenable to the assay.
 - xii. Proposals should also include future commercialization plans and anticipated timeline for development beyond the work proposed in response to this solicitation
- d. The following will be considered out of scope:
- i. Exploratory research that is not translational. Proposed work should be product driven with a clinical validation plan.
 - ii. Lack of a defined intended use that could reasonably inform on patient management.

2. Improving patient-centric care outside the hospital or post-discharge

- a. BARDA is interested the development of host-based continuous monitors and diagnostics to aid in clinical decision-making for patients prior to severe events, after they have been discharged, or when recovering at home after an illness. Infections from common pathogens (e.g. influenza, pneumococcus), pandemics (SARS-CoV-2), or result of insult (e.g. radiation injury, chemical inhalation), can all occur in community settings before progressing to hospitalization and severe outcomes (including ARDS, sepsis, etc.). These conditions can also have long term consequences that linger beyond the initial recovery (i.e. following discharge from the hospital).

Diagnostics or other monitoring approaches are needed to provide early indication of health deterioration to prognosticate severe outcomes in clinical care settings outside the hospital or at home, or to mitigate long-term outcomes.

b. BARDA is interested in machine learning driven solutions to interpret at-home clinical and physiological monitoring technologies to detect health deterioration prior to a severe event or to monitor the progression of recovery (e.g, Long COVID). Technologies should not just inform on analyte value or clinical thresholds but should interpret/analyze the data to inform on changes in health outcomes in order to aid in improved clinical care. These tools could also include pediatric technologies that improve early detection and diagnosis and/or inform on clinical management of pediatric/neonatal patient progression to sepsis and other severe outcomes.

c. Proposed approaches should address the following:

- i. Algorithm-driven solution should show utility towards infection via any etiology (i.e., bacterial, viral, other) versus approaches that are limited to a subset of pathogens.
- ii. Evidence of planned adoption or implementation strategies in relevant settings to improve clinical utility of the proposed technology (pre-hospital (e.g. home, nursing homes, outpatient), urgent/emergency care (e.g. EMS transport, Emergency Department) and post-discharge/recovery (e.g. home, nursing homes).
- iii. Prior demonstration and preliminary data to support clinical indication (e.g., analyzed patient samples, initial performance data)
- iv. Proposals should present a clear FDA regulatory path for approval/clearance (if appropriate) and, if available, evidence of engagement with regulatory authorities.
- v. Proposals should provide evidence of pre-established agreements with proposed partners for relevant clinical studies, if appropriate.
- vi. Clinical studies must be equitable in terms of enrollment, including diversity amongst race, ethnicity, and biological sex.
- vii. If the proposed approach is a digital tool, please also review AOI #3 Digital health tools. We encourage a joint pre-submission call before stage 1 submission, so please reach out to HostDx@hhs.gov and digitalhealth@hhs.gov

d. The following will be considered out of scope:

- i. Tools that are exclusively used for inpatient hospital settings
- ii. Outputs that only provide clinical values/measurements without an ML/AI interpretation of the data to inform on infection status or health deterioration
- iii. Technologies that focus on pathogen detection in absence of a host response
- iv. Exploratory research with no near-term translational application
- v. Technologies that will require FDA regulatory approval but have not yet engaged or do not have an appropriate regulatory path

- vi. Technologies that seek to provide population-wide health data rather than focus on patient specific clinical decision support
- vii. Technologies that focus on analytic capabilities for detection but not diagnosis of health deterioration

3. Demonstrating Clinical Utility

- a. BARDA is interested in evaluating the clinical utility of HBDs to support implementation and adoption beyond regulatory approval, specifically to enhance provider or patient utilization. Respondents should propose an HBD that is in late-stage development, or already FDA approved/authorized to assess clinical utility of the product for public health emergencies or infectious disease at any stage or along the entire patient continuum of care. Clinical utility studies should show value of the tool beyond the performance, with an emphasis on demonstrating how the output from the tool can be utilized to alter patient or provider decision making to improve patient outcomes. Proposed solutions should include well thought out workflows in the setting proposed.
- b. Proposed research areas may include, but are not limited to the following:
 - i. Real world data from implementation or pragmatic studies evaluating against respondent-defined patient outcomes
 - ii. Demonstrate ability to integrate into clinical workflow or optimize pathways to improve time to care or improve patient outcomes
 - iii. Demonstrate value of tool in low-acuity and limited healthcare resources settings (e.g. outside hospital physician's offices, urgent care, virtual care, at home, nursing homes, etc. or at-risk patient populations (e.g. pediatrics, underserved rural communities, racial and ethnic minority groups, lower socioeconomic status, sexual and gender minority groups, etc)
 - iv. Demonstrate ability of tool to aid in clinical decision-making regarding patient management or use of medical interventions
 - v. Demonstrate readiness to scale or impact of scaling solutions, addressing limitations previously identified by respondent
- c. The following will be considered out of scope:
 - i. HBD technology research and development alone that does not include a clinical utility or implementation study component as part of the proposal. Research and development and/or regulatory activities are appropriate as long as included along with clinical utility study.
 - ii. Lack of clear metrics of improved patient outcomes proposed with the study design.

B. Eligible Respondents & Scope Parameters:

This Amendment is open to all responsible sources as described in the EZ-BAA. Abstract submissions that do not conform to the requirements outlined in the EZ-BAA may be considered non-responsive and will not be reviewed. In particular, an entity must have an active registration with <https://sam.gov> at the time of submission to be reviewed. If not, the

abstract submission will not be reviewed and will be rejected. Please do not attempt to submit an abstract if your registration is not active in <https://sam.gov>.

IMPORTANT NOTE: Interested vendors are strongly encouraged to request and schedule a pre-submission call before submitting an abstract. This request should include the project title, key project staff, and a brief description of the proposed project. Please submit the requests to the following:

- AOI #15:** ReDIRECT (chemrepo@hhs.gov)
- AOI #16:** Lab at Home (homediagnostics@hhs.gov)
- AOI #17:** Digital MCMs (digitalhealth@hhs.gov)
- AOI #18:** Host-Directed Therapeutics (HostTx@hhs.gov)
- AOI #19:** Healing Lungs (HealingLungs@hhs.gov)
- AOI #20:** DRIVE Forward (DRIVE_Forward@hhs.gov)
- AOI #21:** Vaccines on Demand (ondemand@hhs.gov)
- AOI #22:** ReBooT (reboot@hhs.gov)
- AOI #23:** Host-Based Diagnostics (HostDx@hhs.gov)

The table below indicates the closing dates for abstract submissions for each AOI, unless otherwise extended:

Area of Interest	Closing Date for Abstract Submissions
#20	12:00pm ET on October 18, 2027
#16 and #19	12:00pm ET on February 3, 2023
#17	12:00pm ET on February 3, 2024
#21	12:00pm ET on December 18, 2022
#15 and #22	12:00pm ET on October 31, 2023
#18 and #23	12:00pm ET on June 30, 2023

C. Number of Awards:

Multiple awards are anticipated and are dependent upon the program priorities, scientific/technical merit of abstract submissions, how well the abstract submissions fit within the goals of the AOI, and the availability of funding. The program funding is subject to change based on the Government’s discretion.

Funding is limited, so we encourage any interested vendors to reach out to the respective program as soon as possible before submitting an abstract.

D. Amendment Application Process:

This Amendment will follow the same submission process and review procedures as those established under this EZ-BAA, unless otherwise noted. For complete details, please read the EZ-BAA in its entirety along with all amendments.

IMPORTANT NOTE: Respondents who are awarded a contract under each of these AOIs will be

required to share any collected, de-identified data in an effort to advance the field and knowledge. Interested Respondents are strongly encouraged to commercialize their technology and algorithms, however note that consistent with BARDA's mission and federal standards, data collected through the use of government funding will be delivered to BARDA for government usage pursuant to applicable regulations and law.