



BILLING CODE: 4163-18-P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Centers for Disease Control and Prevention

Announcement of Requirements and Registration for Healthy Behavior Challenge

AGENCY: Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS)

ACTION: Notice

SUMMARY: The Centers for Disease Control and Prevention (CDC) located within the Department of Health and Human Services (HHS) announces the launch of the Healthy Behavior Data Challenge. The Healthy Behavior Data Challenge responds to the call for new ways to address the challenges and limitations of self-reported health surveillance information and tap into the potential of innovative data sources and alternative methodologies for public health surveillance. Challenge participants will propose data sources and approaches for aggregating data from wearable devices, mobile applications and/or social media in the areas of nutrition, physical activity, sedentary behaviors, and/or sleep. Conducted in two phases, Phase I (Prototype Development) entails Challenge participants developing a

concept proposal for obtaining data collected from wearable devices, mobile applications and/or social media for public health surveillance purposes. In Phase II (Prototype Implementation), a subset of submissions (up to 3) with promising concepts will be invited to test their proposed approaches for ongoing public health surveillance.

DATES: The Challenge is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER] and will conclude December 31, 2017.

FOR FURTHER INFORMATION CONTACT: Dr. Machell Town, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, 4770 Buford Highway, N.E., MS F-78, Chamblee, Georgia 30341; Email: BRFSSinnovations@cdc.gov.

SUPPLEMENTARY INFORMATION:

Award Approving Official: Anne Schuchat, MD, (RADM, USPHS) Acting Director, Centers for Disease Control and Prevention, and Acting Administrator, Agency for Toxic Substances and Disease Registry.

The Behavioral Risk Factor Surveillance System (BRFSS) is the nation's premier system of health-related telephone surveys that collect state data about U.S. residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services.

Established in 1984 with 15 states, BRFSS now collects data in all 50 states as well as the District of Columbia and three U.S. territories. BRFSS completes more than 400,000 adult interviews each year, making it the largest continuously conducted health survey system in the world.

The collection of health data through traditional surveillance modes including telephone and in-person interviewing, however, is becoming increasingly challenging and costly with declines in participation and changes in personal communications. In addition, the self-reported nature of responses particularly in the areas of nutrition, physical activity, sedentary behaviors, and sleep has been a major limitation in these surveillance systems, since self-reported data are subject to under/over reporting and recall bias. Meanwhile, the advent of new technologies and data sources including wearable devices (such as: smart watches, activity trackers, sleep monitors, etc.), mobile health applications on smartphones or tablets, and data from social media represents an opportunity to enhance the ability to monitor health-related information and potentially adjust for methodological limitations in traditional self-reported data.

The Healthy Behavior Data (HBD) Challenge will be conducted concurrently with a similar challenge proposed by

the Public Health Agency of Canada. This will enable the two countries to learn from their respective challenges and leverage information. We expect increased efficiency with a dual challenge.

Submissions will be accepted starting [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]. The submission period for phase I will end on July 31, 2017. The Phase II (Prototype Implementation) submission period will begin September 4, 2017 and end December 31, 2017. The grand prize finalist is anticipated to be announced in February of 2018.

Information on the Behavioral Risk Factor Surveillance System can be found at www.cdc.gov/brfss.

Subject of Challenge Competition:

The Healthy Behavior Data Challenge responds to the call for new ways to address the challenges and limitations of self-reported health surveillance information and tap into the potential of innovative data sources and alternative methodologies for public health surveillance.

The Healthy Behavior Data (HBD) Challenge will support the development and implementation of prototypes to use these novel methodologies and data sources (e.g., wearable devices, mobile applications, and/or social media) to enhance traditional healthy behaviors surveillance systems

in the areas of nutrition, physical activity, sedentary behaviors, and/or sleep among the adult population aged 18 years and older in the US and US territories.

Ideation Period:

The Challenge will launch as an ideation/open submission period in which eligible participants (outlined in Eligibility Rules) may register and submit an entry onto the Challenge Website

(<https://www.challenge.gov/challenge/the-healthy-behavior-data-challenge/>). Information about the Challenge and a link to the Challenge website can also be found at Challenge.gov. The 13-week ideation period will be followed by a 16-week resubmission period held for those who were chosen by the judges as semifinalists to further refine their idea. The Challenge website serves as the destination and submission portal. Participants may find the Challenge rules, eligibility criteria, evaluation criteria, additional resources, and the Challenge timeline on the Challenge website or at Challenge.gov.

Submission Requirements:

Entries not in compliance with the submission requirements outlined below will be ineligible for further review and prize award. During the open submission period,

eligible participants may register and submit an entry onto the Challenge Website, to include:

Phase I (Prototype Development)

1. A completed HBD Challenge Submission Template describing the proposed project, project personnel and data sources.
2. A PowerPoint or other visual presentation of the proposed project including purpose, methods and anticipated outcomes of the proposed approach, which could be used to present the proposal to a judging panel.
3. A description of data that are anticipated to be captured by the proposed approach, comparability to the Behavioral Risk Factor Surveillance System (BRFSS), and, if applicable, descriptions of online app(s), web-based tools or communication devices used to recruit or track subjects' healthy behavior information.
4. Proposal of a viable data source(s) from a currently available or a feasible future source (such as a proposed app or online tool). HBD Challenge participants may propose the use of public and/or private data sources, as long as respondent agrees to participate and the respondent confidentiality and privacy are maintained.
5. A demonstration of how CDC would be able to access the data.

6. A detailed outline of the information that will be obtained.
7. A demonstration of how data will be extracted and collected: present the format in which it will be stored.
8. A description of how the new data source(s) could be linked with other data sources, in a statistically robust manner that could result in useful public health insights, citing statistical approaches and evidence to support the proposal.
9. A focus on one or more behavioral factors including physical activity, sleep, sedentary behaviors, and/or nutrition.
10. Information about the population reached and generalizability of the approach.
11. A description of how data could be stratified by demographic characteristics (e.g. age, sex, education, geographic jurisdiction).
12. An indication of how information gathered addresses some or all of the following common metrics in one or more of the healthy behavior topics below:
 - a. Sleep:
 - i. Hours of sleep per night (sleep duration)
 - ii. Amount of time awake (sleep quality)
 - iii. Number of times awake (sleep quality)

- iv. Number of adults reporting having trouble getting to and staying asleep
- v. Time to fall asleep
- vi. Amount of time in REM vs. non-REM sleep (duration of sleep stage)
- vii. Heart rate
- viii. Respiration
- ix. Sleep behaviors such as snoring, sleep talking, and sleep movement
- b. Sedentary Behaviors:
 - i. Average number of hours per day spent sedentary, excluding sleep time
 - ii. Average number of hours per week spent on a computer/screen including watching TV, videos, playing computer games, emailing or using the internet
 - iii. Sedentary data with additional information on location (work, school, community, etc.) broken down by weekday and weekend day
- c. Nutrition:
 - i. Total calories consumed per day
 - ii. Consumption of fruit (not including juices) by day, week, or month
 - iii. Consumption of green leafy or lettuce salads, with or without other vegetables, by day, week, or month

- iv. Consumption of vegetables (not including lettuce salads and potatoes) by day, week, or month
- v. Number of sugar-sweetened beverages consumed by day, week, or month
- vi. Number of caffeinated drinks consumed by day, week, or month
- d. Physical activity:
 - i. Minutes of moderate-to-vigorous physical activity (MVPA) per day (ideally by location - work, school, in community)
 - ii. Daily number of steps
 - iii. Miles/km (Distance) on foot
 - iv. Number of days of physical activity/week or month (and established number of days in one month)
 - v. Minutes of moderate-to-vigorous physical activity (MVPA) per day (ideally by location - work, school, in community) broken down by week day and weekend day.
 - vi. Calories burned
 - vii. Type of activity (aerobic, strength, etc.)
 - viii. Active minutes
 - ix. Duration of exercise
 - x. Flights of stairs climbed
 - xi. Average and peak heart rate

- xii. Occupational physical activity and active chores amount: (location of physical activity)
- xiii. Number of hours of reported physical activities while at work, in or around household
- xiv. Leisure time physical activity amount:
- xv. # of hours per week adult participants spent in sports, fitness or recreational physical activities, organized or non-organized, that lasted a minimum of 10 continuous minutes
- xvi. Number of adults reporting and time spent walking or cycling to work or school

Participants may also choose to suggest additional metrics in the areas of nutrition, physical activity, sedentary behaviors, and/or sleep. If additional metrics are included, the participant should include a short description of the data and how it might inform public health efforts (such information and data will be collected in accordance with any applicable laws and regulations).

Phase II (Prototype Implementation Phase)

During The Phase II Prototype Implementation Phase, the six submissions selected under Phase I will test their solutions, utilizing their previously collected data from 300 or more adults (aged 18 and above) residing in the US or its territories. During this phase there will be an

opportunity for HBD Challenge participants to incorporate data from existing surveys including the Behavioral Risk Factor Surveillance System (BRFSS).

Phase II (Prototype Implementation) allows applicants to test proposals developed in Phase I. The prototype is a demonstration of possible methods for supplementing data from existing surveillance systems (such as the BRFSS). This prototype is not meant to be merged with existing surveillance systems, but rather to complement data collected with current infrastructures. At the end of implementation HBD Challenge participants should be able to:

1. Compare data obtained by the prototype to data from the BRFSS in the areas of nutrition, physical activity, sedentary behaviors, and/or sleep.
2. Demonstrate how data from the included participants could be stratified by demographics (age, sex, education, etc.).
3. Demonstrate the ease of adding additional types of mobile applications and wearable devices to existing survey methodologies.
4. Report that describes the prototype/methodology and the prototype's anticipated strengths and limitations for surveillance.

5. Demonstrate the applicability of the non-traditional data source(s) for ongoing public health surveillance purposes.
6. Describe the prototype in detail, including purpose, method, outcomes and comparability to data obtained from the Behavioral Risk Factor Surveillance System (BRFSS).
7. Provide a working prototype including data (in Excel format) obtained using the prototype from 300 or more adult respondents residing in the US or its territories. The data must include the age, gender, location, and at least one of the measures associated with the HBD Challenge in the areas of nutrition, physical activity, sedentary behaviors and/or sleep.
8. Provide a PowerPoint presentation to the judges and invited CDC personnel which includes information on the purpose, methods, outcomes and comparability to the BRFSS.

Submissions must be free of security threats and/or malware. Applicants/Contestants agree that CDC may conduct testing on the product/submission to determine whether malware or other security threats may be present. CDC may disqualify the product if, in CDC's judgment, the app may damage government or others' equipment or operating environment or if the app, in CDC's judgment, is

inconsistent with CDC's public health mission, utilizes software or other technologies without appropriate licenses, or any other reason deemed necessary.

How to Enter:

Participants may enter by visiting healthdatachallenge.gov and challenge.gov and following the instructions for submission. The U.S. and Canadian challenges are being run in parallel and US entrants should submit to this contest via challenge.gov and Canadian citizens to the Canadian contest found at healthdatachallenge.gov.

Eligibility Rules for Participating in the Competition:

To be eligible to win a prize under this challenge, an individual or entity—

- (1) Shall have registered to participate in the competition under the rules promulgated by the Centers for Disease Control and Prevention;
- (2) Shall have complied with all the requirements under this section;
- (3) In the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a

group, shall be a citizen or permanent resident of the United States; and

(4) May not be a Federal entity or Federal employee acting within the scope of their employment.

(5) Shall not be an HHS employee working on their applications or submissions during assigned duty hours.

(6) Are an individual or team comprised of members each of who are 18 years of age or over.

(7) Are not on the Excluded Parties List System located at www.sam.gov.

Additionally:

(a) Federal grantees may not use Federal funds to develop challenge applications unless consistent with the purpose of their grant award. Federal contractors may not use Federal funds from a contract to develop challenge applications or to fund efforts in support of a challenge submission.

(b) Employees of CDC, and/or any other individual or entity associated with the development, evaluation, or administration of the Challenge as well as members of such persons' immediate families (spouses, children, siblings, parents), and persons living in the same

household as such persons, whether or not related, are not eligible to participate in the Challenge.

- (c) An individual or entity shall not be deemed ineligible because the individual or entity used Federal facilities or consulted with Federal employees during a competition if the facilities and employees are made available to all individuals and entities participating in the competition on an equitable basis.
- (d) Applicants must agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether the injury, death, damage, or loss arises through negligence or otherwise.
- (e) A solution may be disqualified if it fails to function as expressed in the description provided by the user, or if it provides inaccurate or incomplete information.
- (f) CDC reserves the right to disqualify participants from the Challenge for inappropriate, derogatory,

defamatory, or threatening comments or communication through the Challenge website or on the Challenge.gov website.

(g) Submissions must be free of security threats and/or malware. Applicants/Contestants agree that CDC may conduct testing on the product/submission to determine whether malware or other security threats may be present. CDC may disqualify the product if, in CDC's judgment, the product may damage government or others' equipment or operating environment.

(h) Applicants must obtain liability insurance or demonstrate financial responsibility in the amount of \$0 for claims by: (1) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered applicant's insurance policy and registered applicant's agreeing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and (2) the Federal Government for damage or loss to Government property resulting from such an activity. Applicants who are a group

must obtain insurance or demonstrate financial responsibility for all members of the group.

- (i) By participating in the Challenge, each Applicant agrees to comply with and abide by these Official Rules, Terms & Conditions and the decisions of the Federal Agency sponsors and/or the individual judges, which shall be final and binding in all respects.

Registration Process for Participants:

To register for this Challenge, participants can access <https://www.challenge.gov/challenge/the-healthy-behavior-data-challenge/> anytime during the proposal submission period stated above to register.

Amount of the Prize:

In Phase I (Prototype Development), participants will compete for a \$30,000 prize pot from which up to six teams or submissions will be selected to receive a \$5000 prize each).

In phase II, up to 3 participants will compete for a \$70,000 prize pot. The following prizes will be awarded:

One First Place winner of \$40,000

One Second Place winner of \$20,000

One Third Place winner of \$10,000

Three (3) winners will be notified via email.

Payment of the Prize:

Prizes awarded under this competition will be paid by electronic funds transfer and may be subject to Federal income taxes. HHS will comply with the Internal Revenue Service withholding and reporting requirements, where applicable.

Basis upon Which Winner Will Be Selected:

A review panel composed of subject-matter experts will judge eligible HBD Challenge entries. A judging panel will make final winner selections based upon the criteria outlined below and in compliance with the HHS Competition Judging Guidelines.

Phase I Scoring Criteria

All Criteria are scaled 1-5, with 1 being the lowest score on each dimension and 5 being the highest score on each dimension. Scores are weighted by the proportion of each dimension and then aggregated to create a final score.

1. Efficacy of Prototype (20%)

1 = Prototype is likely to not work in a way that is statistically appropriate/ 5 = Prototype is likely to successfully collect, and harmonize data, in a statistically robust manner, across multiple data sources to address common metrics.

2. Promise of Comparability to BRFSS Findings (20%)

1 = Prototype does not consider stratification parameters, or applies to only a narrow population/ 5 = Prototype holds promise for capturing data that is valid, reliable, and representative of a large population.

3. Acceptability (15%)

1= All parties expressed concerns with data being used in terms of respondent privacy, feasibility and utility/5= All parties involved are comfortable with data being used in terms of respondent privacy, feasibility and utility. NOTE: This means that federal and state restrictions on data collection and assurance of confidentiality are being respected. Any proposals that appear to violate the Privacy Act, HIPAA, and FERPA will be unacceptable. (Mandatory criteria; if not scored 5, prototype may be disqualified).

4. Innovation (15%)

1 = Prototype duplicates existing approach/ 5 = Prototype presents a novel approach

5. Feasibility of Prototype (15%)

1 = Prototype is not feasible due to factors like cost, availability of data, etc. /5 = Prototype is feasible and addresses potential implementation challenges by offering solutions

6. Generalizability (10%)

1 = Prototype is not generalizable to a range of data sources/5 = Prototype is generalizable to a range of data sources.

7. Breadth of Data Collected (Scope) (5%)

1 = Prototype does not address required metrics, across the identified content area(s)/ 5 = Prototype includes required metrics

Phase II Scoring Criteria

All Criteria are scaled 1-5, with 1 being the lowest score on each dimension and 5 being the highest score on each dimension. Scores are weighted by the proportion of each dimension and then aggregated to create a final score.

Judging criteria for Phase II include:

- Data quality (20%)

1= Prototype does not provide data that are likely to be valid or reliable or representative of a population/ 5 = Prototype provides data that demonstrate validity, reliability, and representativeness.

- Ability to complement BRFSS Findings (20%)

1= Prototype does not outline steps to complement BRFSS efforts/ 5 = Prototype is provides data which can complement and/or supplement measures collected by the BRFSS or other publically available traditional surveillance systems.

- Validation of or Enhancement of existing national public health surveillance data (20%)

1 = Prototype cannot be statistically aligned with currently available health data/ 5 = Prototype statistically aligns with available data across population sub-groups

- Flexibility (10%)

1= Prototype does not demonstrate the ability to include additional types of data and data sources/ 5= Prototype demonstrates flexibility in the ability to add different data types and data from additional sources.

- Simplicity (structure and ease of operation) (10%)

1= Prototype's structure and operation is complex/ 5= Prototype's structure is clear and easy to implement; it is not burdensome on current systems.

- Resources for system operation (10%)

1 = Prototype requires heavy resource burden in terms of cost, training, administration, infrastructure/ 5= Prototype has low resource burden in terms of cost, training, administration, infrastructure

- Timeliness (5%)

1=there is a significant gap in time between data collection and analysis/ 5=there is a real-time monitoring through the collected data

- Stratification by Demographics (5%)

1= Prototype is unable to stratify the data by key demographics/ 5 = Prototype is able to stratify the data by age, sex, education, and race/ethnicity.

Additional Information:

An individual or entity shall not be deemed ineligible because the individual or entity used Federal facilities or consulted with Federal employees during a competition if the facilities and employees are made available to all individuals and entities participating in the competition on an equitable basis.

Participants must also agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from my participation in this prize contest, whether the injury, death, damage, or loss arises through negligence or otherwise.

Participants are required to obtain liability insurance or demonstrate financial responsibility in the amount of \$0, for claims by a third party for death, bodily injury, or property damage, or loss resulting from an

activity carried out in connection with participation in a challenge.

Participants must also agree to indemnify the Federal Government against third party claims for damages arising from or related to HBD Challenge activities.

CDC reserves the right to cancel, suspend, and/or modify the HBD Challenge, or any part of it, for any reason, at CDC's sole discretion.

Compliance with Rules and Contacting Contest Winners:

Finalists and the Contest Winners must comply with all terms and conditions of these Official Rules, and winning is contingent upon fulfilling all requirements herein. The initial finalists will be notified by email, telephone, or mail after the date of the judging. Awards may be subject to Federal income taxes, and the Department of Health and Human Services will comply with the Internal Revenue Service withholding and reporting requirements, where applicable.

Intellectual Property (IP) Rights:

- Applicants are free to discuss their submission and the ideas or technologies that it contains with other parties; encouraged to share ideas/technologies publicly; encouraged to collaborate or combine with other teams to strengthen their solutions; and are free to contract with

any third parties. Applicants should be aware that any agreement signed or obligation undertaken in regards to their participation in this HBD Challenge that conflicts with the HBD Challenge rules, terms and conditions may result in disqualification of the Applicant's submission.

- Upon submission, each Applicant warrants that he or she is the sole author and owner of the work and any pertinent Intellectual Property (IP) rights, that the work is wholly original of the Applicant (or is an improved version of an existing work that the Applicant has sufficient rights to use—including the substantial improvement of existing open-source work), and that it does not infringe any copyright or any other rights of any third party of which Applicant is aware. Each Applicant also warrants that the work is free of security threats and/or malware.

- Applicants retain ownership of the data that they develop and deliver under the scope of the HBD Challenge, including any software, research product, or other intellectual property ("IP") that they develop in connection therewith. Applicants agree to grant a license to the Federal Agency sponsor (CDC) for the use of the IP developed in connection with the HBD Challenge as set forth herein.

- Each Applicant must clearly delineate any Intellectual Property (IP) and/or confidential commercial information contained in a submission that is owned by the Applicant, and which the Applicant wishes to protect as proprietary data.
- Upon completion of the HDB Challenge period, applicants consent to grant CDC an unlimited, non-exclusive, royalty-free, worldwide license and the right to reproduce, publically perform, publically display, and use the Submission, including, without limitation, for promotional purposes relating to the HDB Challenge.
- All materials submitted to CDC as part of a submission become CDC agency records. Any confidential commercial or financial information contained in a submission must be clearly designated at the time of submission.
- If the Submission includes any third party works (such as third party content or open source code), Applicant must be able to provide, upon request, documentation of all appropriate licenses and releases for use of such third party works. If Applicant cannot provide documentation of all required licenses and releases, Federal Agency sponsors reserve the right, at their sole discretion, to disqualify the Submission. Conversely, they may seek to secure the licenses and releases and allow the applicable Submission

to remain in the HBD Challenge, while reserving all applicable Federal agency rights with respect to such licenses and releases.

Privacy:

If Contestants choose to provide the CDC with personal information by registering or filling out the submission form through the Challenge.gov website, that information is used to respond to Contestants in matters regarding their submission, announcements of entrants, finalists, and winners of the Contest. Information is not collected for commercial marketing. Winners are permitted to cite that they won this contest.

General Conditions:

The CDC reserves the right to cancel, suspend, and/or modify the Contest, or any part of it, for any reason, at CDC's sole discretion.

Participation in this Contest constitutes a contestants' full and unconditional agreement to abide by the Contest's Official Rules found at www.Challenge.gov.

Authority: 15 U.S.C. 3719

Date: April 26, 2017

Sandra Cashman

Executive Secretary

Centers for Disease Control and Prevention

[FR Doc. 2017-08778 Filed: 4/27/2017 8:45 am; Publication Date: 4/28/2017]