NACCHO
National Association of County & City Health Officials

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2017 Model Practices

Applicant Information

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Model Practice Title

Please provide the name or title of your practice: *

"Operation Shortbread"-- From Cookies to Countermeasures: Baltimore County Department of Health and Human Services and Girl Scouts of C

Practice Categories

Model and Promising Practices are stored in an online searchable database. Applications may align with more than one practice category. Please select all the practice areas that apply.: *

- ☐ Access to Care
- ☐ Advocacy and Policy Making
- ☐ Animal Control
- ☐ Coalitions and Partnerships
- ☐ Communications/Public Relations
- ☐ Community Involvement
- ☐ Cultural Competence
- ☑ Emergency Preparedness
- ☐ Environmental Health
- ☐ Food Safety
- ☐ Global Climate Change
- ☐ Health Equity
- ☐ HIV/STI
- ☐ Immunization
- ☐ Infectious Disease
- ☐ Informatics
- ☐ Information Technology
- ☐ Injury and Violence Prevention
- ☐ Marketing and Promotion
- ☐ Maternal-Child and Adolescent Health
- ☐ Organizational Practices
- ☐ Other Infrastructure and Systems
- ☐ Organizational Practices
- ☐ Primary Care
- ☐ Quality Improvement
- ☐ Research and Evaluation
- ☐ Tobacco
- ☐ Vector Control
- ☐ Water Quality
- ☐ Workforce
- ☐ Conference Theme: Bridging Clinical Medicine and Population Health

Other::

Is this practice evidence based, if so please explain. :

Winnable Battles

To keep pace with emerging public health challenges and to address the leading causes of death and disability, CDC initiated an effort called Winnable Battles to achieve measurable impact quickly.Winnable Battles are public health priorities with large-scale impact on health and known effective strategies to address them. Does this practice address any CDC's seven Winnable Battles? If so, please choose from the following:: *

- ☐ Food Safety
- ☐ HIV in the U.S.
- ☐ Nutrition, Physical Activity, and Obesity
- ☐ Tobacco
- ☐ Healthcare-associated Infections
- ☐ Motor Vehicle Injuries
- ☐ Teen Pregnancy
- ☑ None

Overview: Provide a brief summary of the practice in this section (750 Word Maximum)

Your summary must address all the questions below:

- Brief description of LHD- location, demographics of population served in your community
- Describe public health issue
- Goals and objectives of the proposed practice
- How was the practice implemented/activities
- Results/Outcomes (list process milestones and intended/actual outcomes and impacts.
  - Were all of the objectives met?
  - What specific factors led to the success of this practice?
- Public Health impact of practice
- Website for your program, or LHD.

750 Word Maximum

Please use this portion to respond to the questions in the overview section. : *

Brief Description: Baltimore County Department of Health and Human Services partnered with the Girl Scouts of Central Maryland to exercise the logistical operation of a Local Bulk Shipment Site (LBSS), often cross-referenced by the emergency management community as a Commodity Point-of-Distribution (C-POD). The local Department of Health's Local Bulk Shipment Site (LBSS) functioned as a "Cookie Depot/Cupboard" to provide the initial push and re-supply of Girl Scout Cookies to regional Girl Scout Troops, simulating the distribution of medical countermeasures during a public health emergency to private partners such as nursing homes, assisted living facilities and other critical infrastructure. This functional exercise provided a test of the LBSS' logistics in a realistic and cost-effective environment. Overview: Baltimore County Department of Health, a department within Baltimore County Health and Human Services, serves a population of over approximately 830,000 residents in in the Baltimore-Towson Metropolitan Statistical Area (MSA). Following the Anthrax Attacks on America in October, 2001, local public health was tasked to plan for and lead the response to a widespread biological release in a metropolitan region. The predominant protective measure of the public includes the mass dispensing of medical countermeasures, namely oral antibiotics, with a 24-hour window to the impacted population. To accomplish this objective, local government is responsible for establishing and operating Points-of-Dispensing (also called Points-of-Distribution or PODs) at which medical countermeasures are provided to the public using techniques and methodology outside the traditional scope of normal pharmacological dispensing. In metropolitan areas where there are dense populations, public PODs (those designed to serve the general public) are supplemented by Closed PODs. Closed PODs serve specific areas and designated populations such as the private sector, critical infrastructure, first responders, healthcare facilities and campuses and/or structures where large clusters of people reside. Closed PODs are designed such as that these pre-identified locations distribute countermeasures to their own respective populations, reducing the overall numbers of populace who would otherwise have to report to a public POD to receive medications for themselves and their households, and therefore reducing the number of hours necessary to reach an entire county or region. While it is the responsibility of the State to ensure secure and safe delivery of federal assets such as medical countermeasures to the local level PODs, a Bulk POD—referred to in Maryland as a Local Bulk Shipment Site (LBSS)—must be established so that Closed PODs can rapidly pick up their allotment of medications and return to their campus and structures to dispense out to their specific populations while the simultaneous public POD operation gets underway with the general public. To provide countermeasures to at least 45% of the County's population through Closed PODs, approximately 370,000 course of medication (or 3,700 cases) would need to be distributed at least once, potentially more if the treatment course was required for the full sixty day period. The primary objective of this project was to fully test the operational capabilities of the LBSS and its ability to receive, stage, fulfill orders of medical countermeasures (MCM) in a realistic environment and distribute to simulated Closed POD partners within an established timeframe. For this initial trial run, the goal was to receive, stage and fulfill almost 1,500 cases (150,000 simulated courses) in less than four hours, while maintaining tight inventory control and chain-of-custody at all times. Due to the "real-life" scenario of staff limitations during a full POD activation, minimal staff were utilized. Following this initial push of simulated MCM, the LBSS transitioned over to a re-supply operation for a period of 45-days to test Continuity of Operations while continuing countermeasure distribution. A collaborative partnership with Girl Scouts of Central Maryland allowed Baltimore County to closely and realistically simulate, measure and evaluate all operational capabilities of local bulk distribution to Closed PODs for a 45-day period without significant impact on departmental continuity of operations. In addition to providing a live training environment, the costs of this exercise were minimal as all simulated countermeasures, volunteers and vehicles were supplied by the Girl Scouts. This effort addresses the Centers for Disease Control and Prevention (CDC) Public Health Preparedness Capability 8: Medical Countermeasure Dispensing and Capability 9: Medical Materiel Management and Distribution.
www.baltimorecountymd.gov/health

Responsiveness and Innovation

A Model Practice must be responsive to a particular local public health problem or concern. An innovative practice must be (1) **new to the field of public health (and not just new to your health department)** OR **(2) a creative use of an existing tool or practice**, including but not limited to use of an Advanced Practice Centers (APC) development tool, The Guide to Community Preventive Services, Healthy People 2020 (HP 2020), Mobilizing for Action through Planning and Partnerships (MAPP), Protocol for Assessing Community Excellence in Environmental Health (PACE EH). Examples of an inventive use of an existing tool or practice are: tailoring to meet the needs of a specific population, adapting from a different discipline, or improving the content.

- Statement of the problem/public health issue
- What target population is affected by problem (please include relevant demographics)
    - What is the target population size?
    - What percentage did you reach?
- What has been done in the past to address the problem?
- Why is the current/proposed practice better?
- Is current practice innovative? How so/explain?
    - Is it new to the field of public health
      OR
    - Is it a creative use of existing tool or practice:
      What tool or practice did you use in an original way to create your practice? (e.g., APC development tool, The Guide to Community Preventive Services, HP 2020, MAPP, PACE EH, a tool from NACCHO's Toolbox etc.)
- Is the current practice evidence-based? If yes, provide references (Examples of evidence-based guidelines include the Guide to Community Preventive Services, MMWR Recommendations and Reports, National Guideline Clearinghouses, and the USPSTF

Recommendations.)

2000 Word Maximum

Please state the Responsiveness and Innovation of your practice (2000 Word Maximum) : *

The problem: There are numerous obstacles to performing an effective and measurable full-scale exercise of a Local Bulk Shipment Site (LBSS) to Closed POD partners. To properly and realistically test the operational capability of an LBSS to distribute thousands of cases of antibiotics to hundreds of Closed POD partners over the course of a 50-day period requires a significant amount of supplies (simulated materiel), vehicles, volunteers and funding. Past attempts to address this problem: In the past, Counties such as Baltimore County have practiced mass distribution of supplies thru C-PODs (Commodity PODs) but were unable to properly and realistically conduct an exercise that truly replicated the size, scope and length of a biological incident. At best, local officials were able to perform a short drill using a few cars and volunteers, with less than fifty cases of a commodity used to replicate emergency distribution. These studies were neither accurate nor useful to emergency planners—they typically utilized the same small number of vehicles and operators who simply off-loaded their supplies and had them re-loaded as they returned to the POD. Staff who completed these drills often failed to recognize or comprehend the true scope of the operation, and the time studies were often flawed. In addition, the training environment was unrealistic and exercise artificialities did not provide an adequate means to evaluate the full operational capabilities. Furthermore, a drill lasting one hour was completely ineffective in testing Continuity of Operations for the fifty day re-supply effort that follows the initial push to Closed PODs. A new, innovative approach: After an initial meeting with Girl Scouts of Central Maryland (GSCM), planners identified that there were certain remarkable similarities between the GSCM annual cookie distribution and medical countermeasure distribution after a terrorist Anthrax attack. The exercise, named “Operation Shortbread,” utilized the existing annual cookie distribution by the Girl Scouts of Central Maryland (GSCM) to activate and operate the Local Bulk Shipment Site (LBSS) and test all functional areas such as receiving, staging, order fulfillment, inventory control, chain-of-custody, drive-up dispensing/distribution and continuity of operations for a full 45-day period. With this innovative partnership, Baltimore County was able to provide an extremely realistic training environment that was remarkably similar to a biological incident response in virtually all capabilities, and was able to accomplish this within a very small exercise budget. By using thousands of cases of Girl Scout cookies, exercise participants used simulation materiel that almost exactly matched the measurements and weights of cases of antibiotics. The initial push of simulated materiel received (18 skids/pallets) by a GSCM “Cookie Depot” was comparable to the tractor-trailer of antibiotics received at an LBSS. The “Depot Day” pickups by Girl Scout troops simulated the first push to Closed POD partners, as troops were required to report to the LBSS, load their vehicles and maintain chain-of-custody of the materiel. After this initial operation, the LBSS became a “Cookie Cupboard” --a location for GSCM troops to re-supply with cases of cookies once they depleted their stock—which perfectly aligns with the re-supply operation following the initial push to Closed POD partners. Lastly, the cookie operations last for 45-days, which is comparable to the 50 days of re-supply efforts necessary after the initial distribution. Baltimore County’s current and future planning has identified and accounted for approximately 300 Closed PODs covering 45% of the population—these figures represent approximately 370,000 residents, or roughly 3,700 cases of antibiotics for the initial push (within 24 hours), with potentially at least half of that amount of partners returning for re-supply over the course of a fifty-day period after receiving the initial 10-day course of countermeasures. For this exercise, Baltimore County distributed over 1,400 cases (140,000 simulated courses) within four hours at a pace described as “leisurely,” with 26 troops taking approximately five minutes each for actual order pickup out of a single loading dock. At this pace, using two bays, almost 300 partners could be easily processed within 13 hours—allowing Closed POD sufficient time to dispense internally to their staff, families and patients. Due to the monetary value of the cookies, troops had to maintain strict chain-of-custody procedures at all times, and the LBSS was required to perform tight quality assurance measures and regular inventory counts in order to account for any discrepancies. The entire exercise expenses were approximately $1,200 in overtime costs for 6 staff on Depot Day. There were no costs involved for the hundreds of vehicles and volunteers, weekly delivery trucks and more than 7,100 cases of simulated medical countermeasures over 45 days.

LHD and Community Collaboration

The LHD should have a role in the practice’s development and/or implementation. Additionally, the practice should demonstrate broad-based involvement and participation of community partners (e.g., government, local residents, business, healthcare, and academia). If the practice is internal to the LHD, it should demonstrate cooperation and participation within the agency (i.e., other LHD staff) and other outside entities, if relevant. An effective implementation strategy includes outlined, actionable steps that are taken to complete the goals and objectives and put the practice into action within the community.

- Goal(s) and objectives of practice
- What did you do to achieve the goals and objectives?
    - Steps taken to implement the program
- Any criteria for who was selected to receive the practice (if applicable)?
- What was the timeframe for the practice
- Were other stakeholders involved? What was their role in the planning and implementation process?
    - What does the LHD do to foster collaboration with community stakeholders? Describe the relationship(s) and how it furthers the practice goal(s)
- Any start up or in-kind costs and funding services associated with this practice? Please provide actual data, if possible. Otherwise, provide an estimate of start-up costs/ budget breakdown.

5000 words maximum

Enter the LHD and Community Collaboration related to your practice (5000 words maximum): *

The partnership between Baltimore County Department of Health and Girl Scouts of Central Maryland proved to be a win-win for both agencies. The Girl Scouts were in need of free or low-cost warehouse locations to serve as a Cookie Depot and/or a Cupboard. Baltimore County Department of Health needed to find a way to cost-effectively and adequately exercise the Local Bulk Shipment Site. (LBSS) “Operation Shortbread” enabled both organizations to meet their primary objectives of completing all operations within the constraints of their respective budgets, timelines, staffing levels and benchmarks. Closed PODs are an essential component of Baltimore County’s mass dispensing plans in the event of a biological attack requiring the County-wide distribution of medical countermeasures. Based upon computer models and live time studies from drills, the average walk-thru Point-of-Dispensing (POD) is approximately 1,000 hph (household heads-per-hour) that are processed through the POD and provided countermeasures for their families/household (estimated family size of 3). Future planning projections anticipate that Closed PODs will cover approximately 45% of the population. The ideal window of time to orally ingest medical countermeasures after exposure to Anthrax is within 48 hours. Assuming the exposure is immediately recognized, the State of Maryland and Centers for Disease Control and Prevention have acknowledged that the first 24 hours after exposure may be needed for the recognition, notification, request and delivery of MCM to the State and subsequent local impacted counties. The reach of the LBSS will be able to push out to more than 400 Closed PODs, distributing approximately 377,000 courses of medical countermeasures (3,770 cases of MCM) in under 13 hours. This, in turn, provides those partners sufficient time to distribute MCM to their staff, families, students and patients. By removing approximately 45% of the County’s overall population required to report to a public POD, the dispensing hours required to target the remaining 151,300+ households or 454,000 residents is reduced to under 13 hours of non-stop dispensing at 1,000 household per hour. The Centers for Disease Control and Prevention (CDC) recently shifted its assessment focus from planning efforts to a one on demonstrating operational capabilities. Prior to the partnership with the Girl Scouts of Central Maryland, there was no mechanism or funding to conduct a full-scale exercise that realistically represented the actual feel, scope and duration of bulk MCM distribution. This partnership, now in it’s second year (2016) has reinforced planning efforts, enhanced staff skills and confidence and has demonstrated Baltimore County’s full operational capability to its federal evaluators. APPLES-TO-APPLES COMPARISON OF MEDICAL COUNTERMEASURES (MCM) TO GIRL SCOUT COOKIES (GSC) (MCM) Truck delivery 18-36 pallets = (GSC) Truck delivery 18 pallets (MCM) Electronic inventory system to generate picklist w/excel and paper backup = (GSC) Electronic inventory system to generate picklist w/excel and paper backup (MCM) Must sign for countermeasures using chain-of-custody form = (GSC) Must sign for cookies—cookie “Passport” & transfer forms designates fiscal responsibility (MCM) All Closed POD partners pick up in one day = (GSC) All Girl Scout Troops pick up on “Depot Day” (MCM) Partners return for re-supply over a 50-day period = (GSC) Troops return for re-supply over 45-day period (MCM) Un-used portion returned to State warehouse - (GSC) Un-used cookies returned to GSCM Warehouse (MCM) Pickups can be 1-300 cases = (GSC) Pickups can be 1-300 cases (MCM) Case of Antibiotics: 12” x 8.5 ”x 8.5” dim wt. 29” 7.0 lbs. = (GSC) Case of Girl Scout Cookies: (average) 12” x 7” x 9” dim wt. 28” 7.8 lbs. (MCM) Initial amount received at LBSS estimated 3,700 for 12 hours = (GSC) Initial amount received 1,400 for 4 hours

Evaluation

Evaluation assesses the value of the practice and the potential worth it has to other LHDs and the populations they serve. It is also an effective means to assess the credibility of the practice. Evaluation helps public health practice maintain standards and improve practice. Two types of evaluation are **process** and **outcome**. Process evaluation assesses the effectiveness of the steps taken to achieve the desired practice outcomes. Outcome evaluation summarizes the results of the practice efforts. Results may be long-term, such as an improvement in health status, or short-term, such as an improvement in knowledge/awareness, a policy change, an increase in numbers reached, etc. Results may be quantitative (empirical data such as percentages or numerical counts) and/or qualitative (e.g., focus group results, in-depth interviews, or anecdotal evidence).

- What did you find out? To what extent were your objectives achieved? Please re-state your objectives.
- Did you evaluate your practice?
    - List any primary data sources, who collected the data, and how (if applicable)
    - List any secondary data sources used (if applicable)
    - List performance measures used. Include process and outcome measures as appropriate.
    - Describe how results were analyzed
    - Were any modifications made to the practice as a result of the data findings?

2000 Words Maximum

Please enter the evaluation results of your practice (2000 Words Maximum): *

This practice was remarkably simple in design due to the lack of significant artificialities that plaque typical emergency drills and exercises. Actual inventory and chain-of-custody mechanisms were utilized daily to track the volume of simulated medical countermeasures (cookies) moving in and out of the Local Bulk Shipment Site. Vehicles picking up cookies were timed as they moved through the process, and times were recorded to determine the average time necessary to pull orders, conduct quality assurance, load vehicles and other critical functions. The electronic tracking of materiel using a state inventory system called IRMS was determined to be too slow to use for live reporting and was abandoned in order to maintain good thru-put numbers. There were certain variables that increased the times for all LBSS processes. Namely, there were eight varieties of cookies in warehouse inventory, compared to two types of antibiotics that would be received and distributed for Anthrax. In addition, due to the monetary value of the cookies, troop leaders took a considerable amount of time to count their orders, and often engaged in conversation with other troop leaders in line, which led to significant time delays and unreliable initial data. Emergency Preparedness staff evaluating the exercise determined that the actual time spent retrieving pulled orders was under one minute, with the average fulfillment process (picking and palletizing an order) taking an average of 3-5 minutes for orders with less than 50 cases. Quality assurance (counting cases) took the most amount of time out of the process, but it was acknowledged that this was due, in part, to the large variety of cookie types. Loading from the dock bay into vehicles took approximately 3-5 minutes depending on the size of the order. A typical order could be processed and loaded in approximately 5 to 10 minutes, at a slow pace described by staff as “leisurely,” with lulls in between orders. In total, the first depot day loaded 1,440 cases for 26 troops into 35 vehicles in under four hours (4 to 6 orders per hour). By eliminating unnecessary conversation and conducting quality assurance on just two product types, it was determined that 12 orders could be processed out of each bay or 24 orders/hour. In a 13-hour period, over 300 Closed POD partners could be served at the LBSS. This information allowed emergency planners to ensure that there was sufficient time to serve all Closed PODs, and provided sufficient evidence that the current number of public PODs in the mass dispensing plan was adequate. One significant improvement as a result of this exercise was the upgrade to the electronic inventory system IRMS to ensure that it would not slow down LBSS processes. The 2017 LBSS exercise will test the improved, upgraded IRMS in order to verify its improvement. In addition, it was determined that by creating Closed POD picklists in advance of an incident, the processing and order fulfillment time will be further reduced. Lastly, emergency preparedness and operations staff felt an increased sense of personal and professional confidence in their abilities to receive, stage, and distribute medical countermeasures and/or any other disaster commodity. This confidence was attributed to using actual product in large quantities, which provided ample opportunities to use material handling equipment that normally does not see as much activity.

Sustainability

Sustainability is determined by the availability of adequate resources. In addition, the practice should be designed so that the stakeholders are invested in its maintenance and to ensure it is sustained after initial development (*NACCHO acknowledges that fiscal challenges may limit the feasibility of a practice's continuation*.)

- Lessons learned in relation to practice
- Lessons learned in relation to partner collaboration (if applicable)
- Did you do a cost/benefit analysis? If so, describe.
- Is there sufficient stakeholder commitment to sustain the practice?
    - Describe sustainability plans

1500 Words Maximum

Please enter the sustainability of your practice (2000 Words Maximum): *

There were numerous lessons learned as a result of “Operation Shortbread” Key Lessons Learned 1. Staff should be cross-trained to perform all functions. This prevents mental fatigue and boredom when performing tedious, repetitious tasks. (see item #2) 2. Staff must also be rotated frequently, particularly those who do anything involving inventory, counting or quality assurance. Mental fatigue, boredom and repetition lead to simple mathematical and counting errors. 3. Anti-slip/grip gloves will prevent frequent drops that occur when leather gloves become smooth after multiple hours of use. After repeated lifting and handling for hours on end, standard leather work glove surface areas were worn smooth. 4. Plastic, stackable pallets are far preferable to wooden ones whenever possible. Plastic pallets significant reduced the time it took to load, stack and maneuver materiel. The lighter weight allows them to be picked up and moved, spun, etc. and did not result in the splintering and breakage that wooden pallets suffered. 5. Clear, visual signage and use of arrows reduces the number of staff necessary to direct traffic outside. This was both a safety issue and a morale issue for staff, particularly in inclement weather. 6. Paper backups must be readily on-hand in the event of network or printer problems. Electronic inventory management systems may not be able to print or process picklists as quickly as necessary. 7. One order = one picker/puller. When multiple staff worked on picking orders together, numerous errors were discovered. Quality assurance measures caught these errors however it was determined that when one picker handled the order, there were fewer mistakes. All orders must be counted for accuracy before being signed over to the Closed POD. 8. Color coding prevents errors—if medical materiel arrives in similar looking packaging/cases, they should be kept physically separated and clearly the pallets clearly labeled. Stickers or other color coding could be implemented if time and supplies permit. 9. There is a defined need to establish a clear and easy system early in the process for documentation flow. This should include clearly identified locations for where “orders in” and “orders fulfilled” are collected. 11. Drive-up/Drive-thru bays will save significantly more time than requiring vehicles to back-up, which takes a lot more time. Vehicles often wasted time backing up to the loading dock bay when they had inexperienced or unskilled drivers. 12. Using a table provided by the Girl Scouts of Central Maryland (and verified by actual loaders), planners can now share with Closed PODs the types of vehicles needed for their specific orders based upon the amount of cases being picked up. The costs of “Operation Shortbread” were surprisingly low considering the scope and length of its duration. A total of approximately $1,200 in overtime costs was the only expense necessary to perform this exercise. One of the key objectives was to test the Continuity of Operations (COOP) plan and determine if LBSS operations could be sustained for almost two months while performed routine duties and other key operations. The majority of activities took place during normal work hours. With the constant challenges of budget reductions each year, the opportunity to host a full-scale exercise costing under $1,200 is virtually non-existent. There were clear benefits to both the Department of Health’s Operations/Emergency Preparedness Division as well as to Girl Scouts of Central Maryland. Due to the high amount of interest this project created with other counties in the metropolitan statistical area and the regional need for warehouse spaces by Girl Scouts of Central Maryland, it is anticipated that this effort may become a region-wide, possibly even a statewide exercise, for the Strategic National Stockpile

Additional Information

How did you hear about the Model Practices Program:: *

- ☐ I am a previous Model Practices applicant
- ☐ At a Conference
- ☐ NACCHO Website
- ☐ Public Health Dispatch
- ☐ Colleague in my LHD
- ☐ Model Practices brochure
- ☐ NACCHO Exhibit Booth
- ☐ NACCHO Connect
- ☑ Colleague from another public health agency
- ☐ E-Mail from NACCHO
- ☐ NACCHO Exchange