Academy (Table). Of these specimens, 12 (41%) were P1 type 1, 15 (52%) were P1 type 2a, and only 2 (7%) were P1 type 2c. A polyclonal distribution with 8 distinct MLVA types was observed, with the MLVA type M representing 11 (38%) of the identified MLVA types. Without the MPN1 marker, 3 MLVA types were observed. No macrolide resistance–associated mutation was detected, similar to what was observed in the 32 specimens collected in 2013. This finding is consistent with the low prevalence of macrolide resistance reported in northern Europe (*6*,*7*).

We report 2 outbreaks of *M. pneumoniae* infections that occurred in the first and last quarter of 2013 in western Russia (Smolensk region). Despite the high predominance of P1 type 1 strains reported in the recent literature (*1*,*2*,*7*), these 2 outbreaks, reported in semiclosed settings involved only the newly described P1 type 2c variant; 1 outbreak represented a monoclonal phenomenon. In the Smolensk region, the circulation of both type 1 and 2 strains was observed a few years before the outbreak; most of these strains were P1 type 2a variants, and only a minority were type 2c variants, suggesting that the new type 2c variant had spread throughout this region of Russia since at least 2006. In other parts of the world, a switch between type 1 and type 2 strains might be occurring. Indeed, in the United States, P1 type 1 isolates predominated before 2010 but dropped to 50% of isolates in 2013, and type 2 and type 2 variant strains increased (*9*). This cyclic pattern of type 1 or type 2 predominance in the population has previously been reported (*10*).

In conclusion, we detected no macrolide resistance in western Russia. The P1 type 2c variant spread throughout this region and can be responsible for monoclonal outbreaks. The epidemiologic monitoring of *M. pneumoniae* P1 types will assess the potential switch to P1 type 2 in the United States and other parts of the world and detect the possible emergence of the P1 type 2c variant.

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Initial Costs of Ebola Treatment Centers in the United States

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To the Editor: The 2014–2015 outbreak of Ebola virus disease (EVD) in West Africa was unprecedented in scale and scope. During the outbreak, 11 patients with

EVD were cared for in the United States (*1*). Safely caring for patients with suspected EVD requires specialized protocols and training for hospital staff in the use of personal protective equipment (PPE) and isolation precautions (*2*,*3*). The care of a hospitalized patient with confirmed EVD in high-level isolation units requires large specialized teams of nurses, physicians, laboratory technologists, environmental service workers, and waste management specialists, and inpatient care may continue for weeks (*3*,*4*). The staff-to-patient ratio necessary to care for a patient with EVD in high-level isolation is much higher than that in a typical intensive care unit because of the extensive PPE used and the need for partners to assist with PPE donning and doffing.

In response to preparedness challenges in the United States, the Centers for Disease Control and Prevention recommended a multitiered framework of hospitals with advanced capabilities for Ebola care: frontline facilities, Ebola assessment hospitals, and Ebola treatment centers (ETCs) (*2*). Within this federal framework, 55 hospitals in the United States have been designated by their states as ETCs, which have the advanced capabilities required to provide medical care to patients with confirmed EVD throughout their illness (*5*). Although the cost of preparing these healthcare facilities to care for EVD patients was believed to be substantial (*5*–*7*), we aimed to directly survey the ETCs to determine the costs incurred to prepare their facilities to manage and treat EVD patients.

In April 2015, we sent a 19-question electronic survey to all 55 ETCs, including the 3 preexisting biocontainment patient care units (online Technical Appendix, http://wwwnc.cdc.gov/EID/article/22/2/15-1431-Techapp1.pdf). Participation was voluntary, and individual responses were confidential. The survey assessed the ETCs' general organization and the costs incurred to establish the ETC. Of the ETCs, 45 indicated interest in participating in the establishment of the United States Highly Infectious Diseases Network to establish infection control metrics and competencies for high-level patient isolation centers. The Institutional Review Board of the University of Nebraska Medical Center declared this study exempt.

Of the 55 ETCs, 47 (85.5%) responded to the survey; 45/47 reported the total costs incurred to establish their ETC, and 43/47 provided a detailed assessment of costs. The 45 ETCs reporting total costs incurred a cumulative total of $53,909,701 (mean $1,197,993/ETC) to establish the ETCs (Table). The most costly activity was facility construction and modifications. Costs incurred to provide initial training for staff averaged $267,075 (range $10,000–$1,624,639). Each ETC spent $172,581 (mean per facility; range $3,000–$560,000) on other expenses not included in the 5 specified categories (Table). Examples of additional costs included computer hardware and software, nonmedical equipment, office supplies, and employee apparel. Costs and expenses allocated to specific purchases varied by region (online Technical Appendix Figures 1, 2).

With the exception of 3 hospitals that had preexisting biocontainment units, 52 hospitals had to undertake novel activities to prepare to care for patients with EVD, including development of plans, recruitment of facility leadership, recruitment and training of a multidisciplinary team of volunteers, and purchase of specialized supplies and equipment. The nearly $54 million in previously unbudgeted expenses was a substantial financial burden on the ETCs. Wide variations for overall expenditures and for specific types of expenditures were noted.

Because 10 ETCs did not report financial data, the overall costs reported here do not fully estimate the expenses incurred by ETCs. Furthermore, these overall costs represent only the initial start-up costs of establishing ETCs and do not include the costs of ongoing maintenance such as resupplying validation reagents for the laboratory, purchasing supplies and equipment, continual training of staff, or testing the units and programs.

This study had limitations. We could not validate self-reported data from the ETCs with information from expense reports. We also acknowledge that many additional hospitals undertook similar efforts to those of the designated ETCs but were not included in this survey (*8*). The costs incurred by public and private public health organizations also were not included.

In conclusion, we have described the initial preparation costs incurred by designated ETCs in the United States. The substantial start-up costs as well as ongoing maintenance costs of EVD programs underscore the need for specialized

Table. Initial costs in US$ incurred by 45 Ebola treatment centers in the United States*

Cost scale	Total costs	Construction/ facility modifications	PPE supplies	Staff training	Unit planning	Laboratory equipment	Non-PPE and nonlaboratory supplies and equipment
Average	1,197,993	420,502	213,347	267,075	176,713	99,106	172,581
Median	1,000,000	202,980	110,000	150,000	82,000	84,000	100,000
High	6,556,457	3,839,000	1,067,573	1,624,639	1,200,000	317,406	560,000
Low	51,500	8,500	10,000	10,000	15,000	0	3,000
Sums†	53,909,701	16,820,080	8,747,240	10,950,072	4,947,966	3,865,124	6,385,513

*PPE, personal protective equipment.
†Summarized data were collected through self-report by individual treatment centers through an electronically administered survey.

facilities to treat EVD (*9*,*10*). A tiered nationwide network of healthcare facilities that can rapidly identify, isolate, and treat patients with EVD has been established to improve the nation's preparedness for EVD and can serve as a valuable resource for future outbreaks of other highly infectious diseases. Ongoing resources will be needed to sustain the readiness of such a network.

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Detection of Influenza D Virus among Swine and Cattle, Italy

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To the Editor: Recent studies have identified a new genus of the *Orthomyxoviridae* family (*1*–*5*). The virus, distantly related to human influenza C virus, has been provisionally designated as influenza D virus. This novel virus was identified for the first time in pigs with influenza-like illness (*1*), but subsequent serologic and virologic surveys have suggested cattle as a possible reservoir (*2*–*4*). Moreover, the virus was shown to infect ferrets used in laboratories as surrogates for humans when investigating influenza infection (*1*). In a serologic study conducted on 316 human samples, low antibody titers and a low level of positive samples (1.3%) were detected (*1*), suggesting that humans are a possible host to be studied in depth. To investigate the circulation of influenza D viruses among pigs and cattle in Italy, we performed biomolecular and virological tests on clinical samples collected from respiratory outbreaks in Po Valley, the area in Italy with the highest density of swine and cattle farms.

We screened clinical specimens from swine (n = 150) and cattle (n = 150) for influenza D virus by reverse transcription quantitative PCR (*1*). Three nasal swab samples were found positive: 1 from a sow and 2 from cattle, collected from 3 farms located at linear distances ranging from 47 to 80 km. All positive samples were confirmed by partial polymerase basic 1 gene sequencing and submitted to viral isolation in cell cultures as previously described (*5*,*6*). The virus was isolated on CACO-2 and HRT18 cell cultures only from the sow sample (D/swine/Italy/199723-3/2015). Cell cultures were tested by using reverse transcription quantitative PCR. Viral RNA was isolated from clinical samples or cell culture by using One-For-All Vet Kit (QIAGEN, Milan, Italy). Full-genome amplification from influenza D virus–positive samples was achieved as previously described (*3*). A sequencing library of the purified amplicons was prepared by using NEXTERA-XT kit and

[1]These authors contributed equally to this article.

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Initial Costs of Ebola Treatment Centers in the United States

Technical Appendix

A.1 General Aspects. The facility addressed in this checklist:

A.1.a) Please indicate the name of the EVD/Special Pathogens Care Treatment sponsoring hospital and location:

Hospital: _____ City/State: _____

A.1.b) Is the hospital applying to be the regional center? ☐YES ☐NO

A.1.c) EVD inpatient care facility is located within:

i) Main Hospital Building(s) ☐YES ☐NO

If yes: Located within

☐Academic/teaching hospital

☐Referral / regional hospital (but not Academic Medical Center)

☐Other (Armed Forces/Infectious Disease Center): _____

ii) Independent facility (stand alone facility) ☐YES ☐NO

If yes, is facility located on the same campus as main hospital building(s)? ☐YES ☐NO

No information / other (please specify):

_____

A.2. High level isolation Capacity:

A.2.a) Number of Ebola or Highly Infectious Disease ISOLATION ROOMS AND BEDS

i) Maximum number of high level patient isolation rooms and beds that can be used simultaneously

number of rooms: _____ number of beds (total): _____

ii) Bed capacity for adult patients n = _____

Critical care capable? ☐YES ☐NO

iii) Bed capacity for pediatric patients n = _____

Critical care capable? ☐YES ☐NO

No information / other (please specify):

_____

A.3. Location of isolation rooms

A.3.a) Where are the isolation rooms specifically located?

i) In a separate ward, but within the same building as other main hospital facilities ☐YES ☐NO

If yes, is the air handling for the ward separate from the air handling for the rest of the building? ☐YES ☐NO

ii) In separate rooms, but in the same ward as other hospital facilities ☐YES ☐NO

(e.g. Inf. Diseases Ward, or ICU)

If yes, is there a physical barrier (wall or other) separating the isolation rooms from the rest of the ward? ☐YES ☐NO

If yes, please describe the barrier: _____

If yes, is the air handling for the rooms separate from the air handling for the rest of the ward?

YES NO

iii) No information / other (please specify):

_____

B.1 Infrastructure features for infection control available

B.1.a) Use of Ante room/area adjacent to patient *isolation room* for doffing PPE YES NO

If yes, please specify:

i) Are the "Clean" entrance and "dirty" exit separated? (2 doors) YES NO

ii) Is the entrance/exit via same pathway (door) YES NO

No information / other (please specify):

_____

B.1.b) *Isolation unit* layout

Are the entrance and exits to the unit separated (2 doors/paths) YES NO

i) Do the staff enter/exit via same pathway/door YES NO

ii) No information / other (please specify):

_____

B.1.c) Are all of the EVD isolation rooms negative pressure patient isolation rooms YES NO

If yes, please specify

i) Number of air changes per hour _____ Quantity:_____

No information / other (please specify):

_____

B.1.c) HEPA filtration YES NO

If yes, filtration of: intake air exhausted air both

No information / other (please specify):

_____

B.1.d) On-site sterilization of medical waste YES NO

If yes, please specify

i) sterilization method: autoclave incinerator other

If yes, please specify

In the isolation unit itself In the hospital elsewhere

If no, process identified for Category A Infectious Substance disposal YES NO

No information / other (please specify):

_____

B.2 Laboratory capabilities of isolation facility

B.2.a) Location of laboratory support (Check all that apply)

i) Located within the patient care room	YES	NO
ii) Located within the isolation unit	YES	NO
iii) Located within the same campus	YES	NO
iv) Located within the same city	YES	NO

No information / other (please specify):

_____

B.3.b) Classification of laboratory support (Check all that apply)

i) Bedside Point of Care Testing	YES	NO
ii) Clinical laboratory	YES	NO
iii) Public Health laboratory	YES	NO

No information / other (please specify):

_____

B.3.c) Biosafety designation of hospital laboratory

i) BSL-2

ii) BSL-3

iii) BSL-4

No information / other (please specify):

_____

B.3.c) Biosafety designation of public health laboratory

i) BSL-2

ii) BSL-3

iii) BSL-4

No information / other (please specify):

_____

C.1 Cost of establishing high-level isolation capability

C.1.a) Approximate total cost incurred to establish ETC capacity since June, 2014: $_____

Construction/facility modifications: $_____

PPE purchases: $_____

Staff training: $_____

Unit planning: $_____

Acquisition of lab testing equipment: $_____

Other unit equipment purchases (not PPE or lab equipment): $_____

D.1. Ebola treatment center consortium participation

D.1.a) Would your facility participate as a member in a consensus network of isolation units to establish infection control metrics, competencies, and peer review for high-level patient isolation centers? YES NO

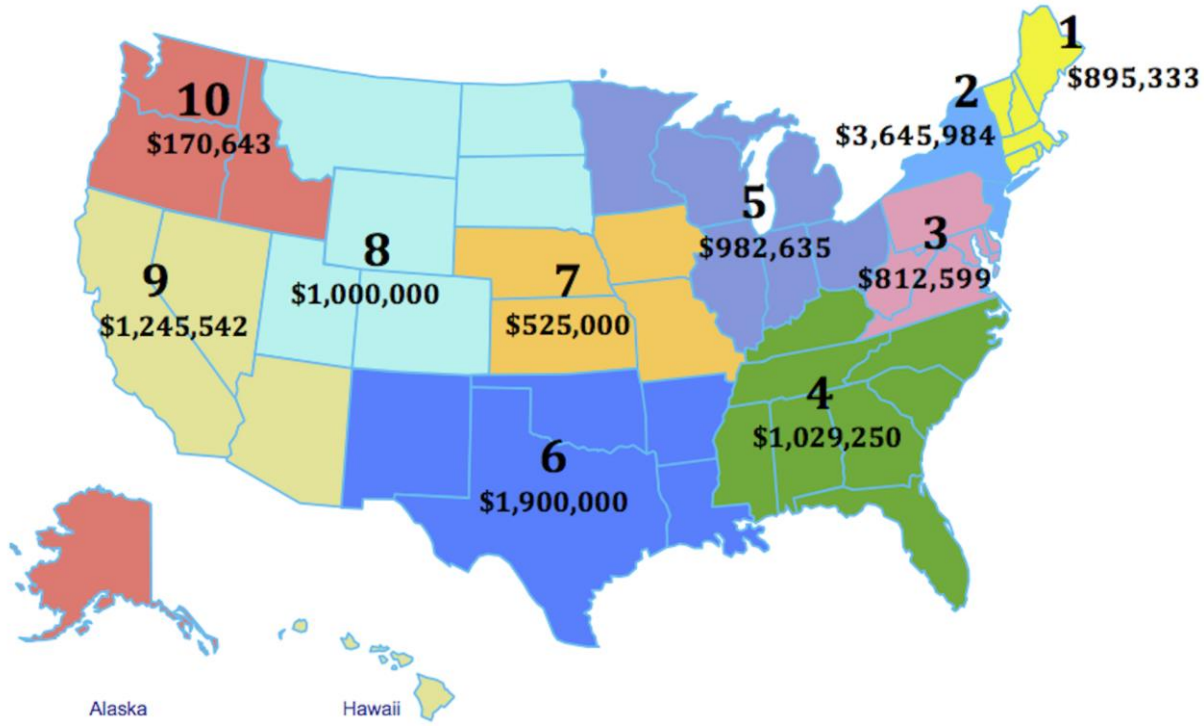
If yes, please specify

Point of contact for consortium participation:

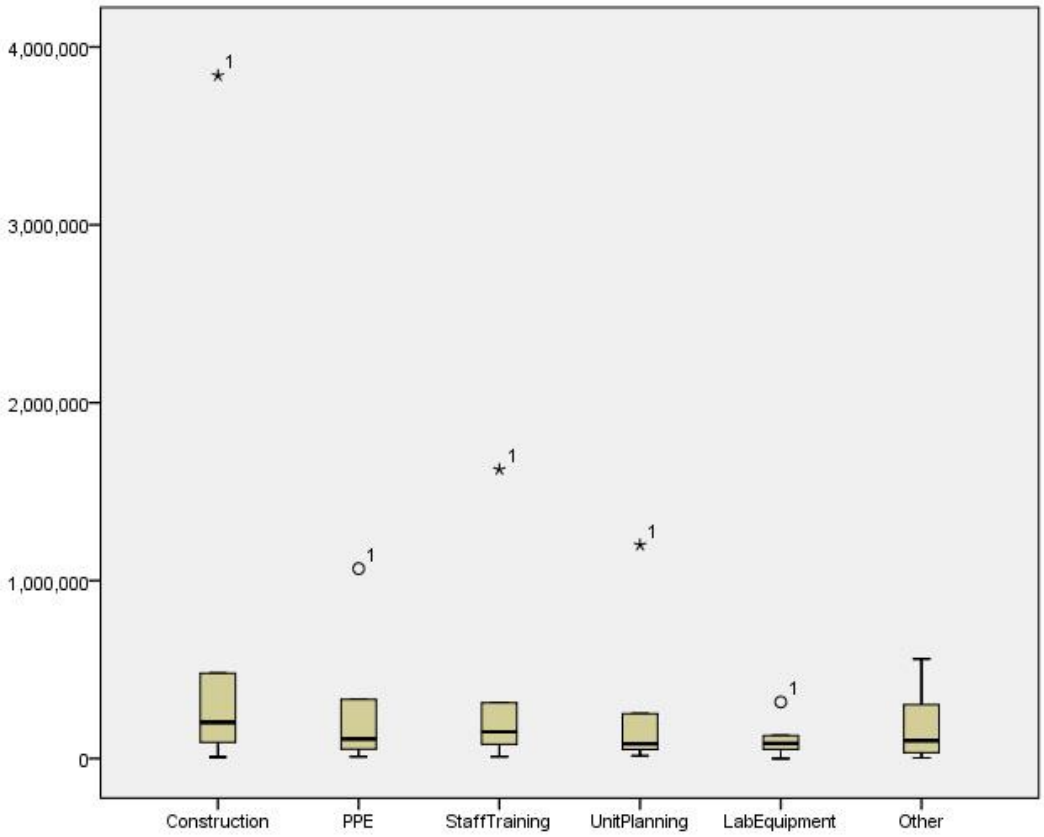
Name:_____

E-mail:_____

Survey sent to all Ebola Treatment Centers.



Technical Appendix Figure 1. Average total costs incurred in each of the 10 US Health and Human Services regions. Summarized data was collected through self-report by individual treatment centers through an electronically administered survey. [1]All Region 8 Ebola treatment centers provided estimates



Technical Appendix Figure 2. Interquartile ranges of the distribution of costs of 45 Ebola treatment centers (US $). Data were collected through self-report by individual ETCs through an electronically-administered survey.