Rural populations exposed to Ebola Virus Disease respond positively to localised case handling: evidence from Sierra Leone

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Abstract

At the height of the Ebola epidemic in Sierra Leone in November 2014, a new decentralized approach to ending infection chains was adopted. This approach was based on building local, small-scale Community Care Centres (CCC) intended to serve as triage units for safe handling of patients waiting for test results, with subsequent transfer to Ebola Treatment Centers (ETC) for those who tested positive for Ebola. This paper deals with local response to the CCC, and explores, through qualitative analysis of focus group data sets, why communities see CCC in a positive light. The responses of 562 focus group participants in seven villages with CCC and seven neighbouring control villages without CCC are assessed. These data confirm that CCC are compatible with community values concerning access to, and family care for, the sick. Mixed reactions are reported in the case of “safe burial”, a process that directly challenged ritual activity seen as vital to maintaining good relations between socially-enclaved rural families. Land acquisitions to build CCC prompted divided responses. This reflects problems about land ownership unresolved since colonial times between communities and government. The study

provides insights into how gaps in understanding between international Ebola responders and local communities can be bridged.

Author Summary

Control of Ebola Virus Disease requires facilities where patients can be isolated and treated safely, without risk to medical personnel or family members. In the 2014-15 Ebola epidemic in Sierra Leone emphasis was at first placed on large field hospitals known as Ebola Treatment Centers (ETC). These were often located far from areas where new cases were being discovered. Patients were distrustful of their purpose and slow to report, and the disease continued to spread. Six months into the epidemic a new approach was tried, based on much smaller and more rapidly constructed centres (Community Care Centres (CCC) located where new cases were occurring. This paper examines community reactions to the CCC. There was a much greater sense of community ownership of these small, localised centres, and reporting times improved. Families were able easily to visit and observe activities, even though restricted from crossing red lines. The staff were often local and provided trustworthy information on the progress of patients. Families were able to prepare home food for patients, and this was thought to improve their morale and chances of survival. CCC were also appreciated for treating other disease, and not only Ebola. Referral of patients to ETC was easier to accept when the outcome of an Ebola blood test was known. There were some differences of opinion over “safe burial” procedures and acquisition of sites for the CCC, but on balance CCC were well accepted by communities, and were seen locally as a positive development in Ebola control.

Introduction

In the epidemic of 2014-15 Sierra Leone had a total of 8630 laboratory confirmed cases of Ebola Virus Disease (EVD) [1]. The international community constructed Ebola Treatment Centers (ETC) as a key part of the epidemic response. These were facilities with very strict biosafety control, capable of handling 100 or more cases at a time. The International Federation of Red Cross and Red Crescent Societies (IFRC) opened such a facility at Nganyahun, about ten miles north of

Kenema, in September 2014, followed by other units in Bo, Freetown and Makeni (all urban locations).

ETC were initially viewed by communities as distant, hostile places where patients went to die. Families feared patients would be forcibly carried to such a facility. Lack of sufficient bed capacity as the epidemic peaked, and community unease, led to a modified approach – the building of a series of 55 small-scale Community Care Centres (CCC), beginning in November 2014. Average build time was about two weeks, and CCC were staffed with local medical and non-medical staff and with some international volunteers.

Although the best strategy might be to isolate and test all suspect cases in ETC as quickly as possible (within the first three days of onset of high fever symptoms) this was undermined, in Sierra Leone, by patient resistance and lack of capacity. Fear of ETC led to hiding of patients [1]. Shortage of beds also hampered Ebola response. By October 2014 there were only 287 beds in four ETC, all located in urban centres [2]. Locations (notably Bo and Kenema) were far from the places where new cases were occurring (in Freetown, Kono and the north). Care *in situ* was considered but rejected. Giving families Personal Protective Equipment (PPE) to minimize transmission while nursing patients at home would be problematic. Safe use of PPE was difficult even for professionals, and the country lacked enough trainers to instruct families in relevant nursing skills [3].

At the request of the government and with endorsement from WHO, leaders of the response to EVD in Sierra Leone decided to support another approach – passive case finding with community isolation. Those with suspected EVD would be encouraged to gather in units where they would receive basic care, and avoid infecting their families [3]. It was reasoned that many small units would be better than a few large ones, since they could be placed closer to emergent hotspots of a disease that moved in complex, non-linear jumps [4]. The original plan was to build up to 200 CCCs though in the end only 55 units were needed, in 5 districts in Sierra Leone, due to downturn

in numbers of cases from January 2015. These smaller units could be placed closer to communities with new infections than the ETC they supplemented.

Incentives to self-reporting – patient feeding, and provision of good medical care for those triaged as Ebola-negative – were adopted on the basis of advice provided by social scientists [3, 5]. The fundamental aims and objective of the CCC was to isolate patients in places where there were no ETC. A news report in the British Medical Journal from the 12 November 2014 [6] summarises the controversy the CCC plan provoked. A representative of *Medecins sans Frontieres* (MSF) went before the UK parliamentary international development committee to argue "the way the CCC are operating, the way they are putting responsibilities on the community, and the way they are designed, is not something MSF is behind at this point". An MSF official with experience in Sierra Leone added that "existing holding centres are close to the patients already". This view was contradicted by an epidemiologist who stated: "we need to have facilities closer to the patients (…) transporting patients for hours in the back of uncomfortable ambulances is (…) not conducive to patients coming forward to getting early treatment" [6]. After weighing the arguments the authorities in Sierra Leone and UK gave a green light to proceed.

CCC were intended to serve as accessible triage units in areas where numbers of cases were rising. They provided for safe handling of patients waiting for test results, with subsequent transfer to ETC for those with a positive diagnosis, and treatment for those found to have other conditions. This paper documents community responses to CCC, and explains why this development was seen, locally, in a positive light. These new Ebola response centres were viewed with scepticism by some international responders, who feared they would spread infection, but were seen in a more positive light by local communities. It is shown that a major factor was that CCC accommodated local cultural expectations regarding the role of the family in care for the sick. Loved ones, both living and dead, were treated with respect, and other diseases were also treated. Built to a partially open design, CCC allowed families some possibility to monitor a patient's progress [5].

The present paper documents the local response, and explores, through qualitative analysis of focus group data sets, why communities saw CCC in a positive light. A major factor – it is shown – was ease of access; families could more easily visit and gain information on the fate of patients. Secondly, the CCCs matched cultural expectations regarding the role of family and in-laws in care for the sick that are widely encountered in rural Sierra Leone. It is argued that both responses reflect social ordering in village communities in rural Sierra Leone. There was local controversy, however, concerning provision of land for CCC. In rural Sierra Leone the family descent group (or patrilineage) owns a portion of village land, and guards it fiercely as a family birth-right. But families cooperate in exchanging both marriage partners and farm labour [7]. To visit the sick, especially members of your own family, or families with which you are allied by marriage, and to defend family land rights, are important among the ways in which local cultural values are expressed.

Materials and methods

Data for the present study were collected via focus group methods as part of an assessment of the impact of CCC conducted in February 2015 in 14 villages (seven with CCC and seven controls, one each per chiefdom section in seven chiefdoms in northern and eastern Sierra Leone). The seven villages with CCC and the seven controls (villages without CCC but sending cases to the village with a CCC) were purposively selected as matched pairs. Each control village belonged to the same chiefdom section as its matching CCC village. A section is the lowest administrative unit in provincial Sierra Leone, typically grouping a handful of villages within a 4-5 km radius.

Focus group discussions, lasting typically between one and two hours, were held in all 14 villages. Four focus group meetings (for elders, men, women and youths) per village were held simultaneously to ensure independent responses. All villagers were invited to participate, and gave informed consent. They self-sorted into the focus group session to which they felt they

136 belonged. There were 56 meetings in all. A total of 1051 people participated and 3399
137 statements were recorded.
138
139 A single question was used to start discussion: what (good or bad) changes have there been in
140 your community in the last year? In all groups the topic of Ebola was quickly reached. At this
141 point facilitators used a standard list of topic prompts to guide discussion further. In some cases,
142 topic prompts were used sparingly because there was a natural flow to the discussion. Speakers
143 were guaranteed anonymity as part of an informed consent procedure. A card system was used
144 to keep account of the type of speaker, when they joined the conversation, and how many times
145 they spoke, without having to record names. Two sequences of numbered cards known as "run
146 order" (labelling respondents as A, B, C, etc.) and "speaking order" cards (numbering the times
147 each respondent spoke – A1 A2, A3, etc.) were distributed and cashed in each time a participant
148 raised a hand to speak. Run order and speaking order details were attached to statements as
149 facilitators wrote them down. Each group made its own rules(e.g. to speak in a moderate voice)
150 and to encourage as many persons as possible to contribute to the discussions.
151
152 Each focus group was run by two facilitators. Facilitator One led the discussion, asking a start-up
153 question about diseases affecting the community. The facilitator confirmed that groups could
154 talk about Ebola response once discussants had first raised it, and specifically about the CCC, as
155 they wished. The prompt list was used to ensure a degree of consistency across groups.
156 Facilitator Two managed the run order and speaking order card tracking system and transcribed
157 the discussion.
158
159 The 3399 recorded statements were grouped into twelve broad themes. Statements were then
160 classed as descriptive (type-1) or evaluative (type-2). This resulted in 1367 (40%) type-1 and 2032
161 (60%) type-2 statements. Four of the twelve themes are used in this paper, covering about a
162 third of the total data (table 1). We have chosen these four topics as they reveal differences
163 between villagers and (inter)national health agencies most prominently. The four themes are i)

164 access to Ebola treatment facilities, ii) visiting and feeding patients, iii) burial, funeral ceremonies,
165 and reporting death of patients visiting, and iv) acquiring land to set up a CCC.
166
167 **Table 1: Overview of the data subset**

Topic	Speakers	Type-2 Statements
Distance	89	96
Visits	195	227
Burial	147	150
Land	131	144
Total	**562**	**617**

168
169 Type 2 statements were analysed according to framing assumptions derived from Mary Douglas'
170 theory of social ordering [8-12]. Douglas recognizes four forms of social ordering – isolate,
171 hierarchical, enclave and individualistic ordering – derived from two universal dimensions of all
172 social life (social integration and social regulation). Enclave and hierarchical ordering are of
173 particular relevance to Ebola response in Sierra Leone. Villages in Sierra Leone operate as
174 political enclaves[9]. They are largely self-governing. For example, a survey of village dispute
175 resolution [7] showed that only 4 per cent of disputes were settled in (government-supervised)
176 local courts - 96 per cent of cases involved reference to family heads or other trusted elders. The
177 decision making process follows the patterns of village social structure. By contrast, a large part
178 of the Ebola response involved hierarchical ordering. An example would be the front-line medical
179 staff such as nurses and Community Health Officers under the direct command of District
180 Medical Officers and senior officials of the Ministry of Health and Sanitation. The decision making
181 process follows the patterns of state governance structure.
182
183 **Ethics statement**
184 The data were gathered as part of an independent review of CCCs undertaken by a team
185 recruited by the Institute of Development Studies at University of Sussex at the height of the

Ebola crisis in in Sierra Leone in February 2015. IDS considered the work to be "impact assessment" and not primary research, so did not require a full ethical review. The team was required, however, to apply institutional ethical guidelines. These ensured that all participation by villagers was voluntary, that data collection was undertaken under a protocol guaranteeing participant confidentiality, and that community leaders gave consent for the holding of consultative focus groups. All human subjects were adult. Informed consent was oral because only a minority of participants could read and write. The process involved the reading out of a statement of informed consent after which participants took time to reach collective agreement. This was reported to the Paramount Chief, who served as custodian of the community interest. No patient samples or experimental procedures were involved.

Results

Before presenting the results of our analysis of evaluative statements on the four main themes as listed in the methods section, we first provide a brief description of the way CCC functioned in the villages.

The basic design of a CCC is described in [13]. The CCC was typically an 8-10 bed facility in tents (tarpaulin) or a repurposed local building (such as a school), staffed by “volunteers”, mostly professionals with medical training, but lacking a Ministry of Health payroll number, and various manual workers, such as guards, cleaners and cooks. Some of the volunteers and most of the manual workers were hired from within the local community, a factor important in gaining trust of patients and their families. All CCC had a water supply, latrines, and security. The layout was divided into “red” and “green” zones [13]. Entry to the “red” zone was barred to all except staff correctly attired in PPE. Some CCC had light at night, supplied by generators. Carers could not attend to suspect EVD patients during the night unless a CCC had electricity [13]. The ICAP study reports that “no sites (visited by the team) were aware of any HCWs (Health Care Workers) who had contracted EVD from their work at the site” [13].

Nursing staff triaged sick persons when they reported. Those without signs of Ebola were treated for malaria, or other diseases and sent home, under observation. Blood samples were taken from those admitted. The aim was to have a laboratory-confirmed result within two days [2, 13] . Confirmed cases of Ebola were transferred by ambulance to an ETC. Some died before diagnosis could be confirmed and were buried by a CCC "safe burial" team. Others – due to lack of availability of ambulances – were cared for in the CCC and discharged if they survived.

i. Access to Ebola treatment facilities

Of the evaluative comments grouped under this theme, it was found that 74 statements (77%) directly referred to expectations concerning distance and family/inter-family involvement in care for the sick, 47 from males, and 27 from females. The distance of ETC was mentioned 35 times. Statements expressed specific obstacles such as the cost of transport, the hazard of a long journey for a seriously sick patient, and the difficulties families faced in maintaining contact with the patient in a distant location.

The advantages of a local Ebola treatment facility (CCC) were mentioned 39 times. Reasons included the ability to maintain contact with the patient, and opportunities to fulfil expected duties of care. Local values are specifically evident in the following comment on the community's role in the decision of a sick person to report for diagnosis. As one respondent put it: "We the community members monitor each other's health issues and can easily advise anyone sick to go to the CCC."

Exclusion from the group is one of the most severe social sanctions that the enclaved community possesses [9]. It was important that patients did not feel abandoned by their families, even if visitors could only gather at the margins of the "red zone" and converse at a distance. This, of course, was more feasible in the small-scale CCC than in the much larger "gated", highly secure ETC.

ii. Visiting and feeding patients

Visiting and food sharing is an important way in which enclaved community social bonds are expressed in the Sierra Leone countryside. Villagers are committed to a lifetime of visits. These can be for a wide variety of social reasons. Sick visiting is always a high priority, especially for family members and in-laws. A visit to the sick involves offering prayers and good wishes, consoling and encouraging the sick person, and giving a helping hand to the carers. Food is often brought and shared.

Ebola disrupted normal patterns of sick visiting, and this threatened the expression of community solidarities. Initially, communities resisted the changes that were required. Patients were sometimes hidden, and burials were carried out in secret. But the disease is very dramatic, and quickly reveals, through the way it spreads from the first victim to close family carers, that it is spread by direct bodily contact. Faced with the losing a family member to a distant ETC or attempting home care, villagers experimented with ways of protecting themselves, while continuing to care for victims of the disease. Evidence concerning the use of improvised protective measures, such as plastic bags to cover the hands and face when nursing patients has been reported [1].

Families also continued to emphasise the importance of home feeding as necessary to recovery. Any such help was impossible in a distant ETC, but it became possible in a local CCC, where many of the kitchen staff were recruited from the village, and willing to accommodate the wishes of villagers who brought home-cooked food for Ebola victims. In all, 227 statements by 195 people were made in response to prompts about whether the sick could be visited in CCC, and under what conditions; control villages were always sampled in chiefdom administrative sections within which a CCC was located, so people in these villages were also asked what they knew and felt about the CCC, even though it was not located in their village. A substantial proportion (56%) of all responses concerned whether or not families were permitted to visit and help care for patients in the CCC.

Statements were often carefully qualified – for example, that centres allowed families to visit and communicate with patients, but not to enter "red zones", or that home food was accepted, but families could not, themselves, serve it to patients, etc. About half of all discussants insisted that family visits and care were not permitted or encouraged. Discussants from villages with CCC were more likely to state that there was a possibility to visit patients, although this was also mentioned frequently in statements from the control villages. A smaller number of responses commented that CCC provided free treatment, treatment for other diseases, and rapid testing for EVD. Feeding for patients was mentioned in ten per cent of statements. CCC care in non-Ebola cases was also sometimes highlighted. One man reported that "my woman had a severe stomach ache, and she was treated, and given food at the centre, free of charge."

iii. Burial, funeral ceremonies, and reporting death of patients

Focus groups were asked to discuss the impact of burial regulations introduced to break Ebola infection chains. Official procedures required that corpses were routinely swabbed to assess whether the deceased had died of EVD. From August 2014 all burials had to be carried out by a trained "safe burial" team, whether the swab was positive or not. The team would spray the corpse with chlorine and place it in a body bag. It would then be buried in a hastily prepared grave with only a minimum of ceremony. Initially, the family was excluded, but from November 2014 families were allowed to participate at a distance. All contact with the body was forbidden.

Burial teams also operated from CCC. But here it was more feasible to notify families, and to arrange burial in the victim's own community, since this was now near at hand. Families were allowed to attend burials and observe at a distance. But repeated calls by communities to be given the training and protective equipment to carry out their own safe burials were ignored or rejected by the international response. Given the importance of funerals as ways of cementing social relations in enclave ordered communities it was expected that many focus group comments would focus on the importance of involvement of families in burial. But since "safe

298 burial" during the Ebola crisis involved new regulations imposed by the state it was also expected
299 that some comments might reflect the hierarchical ordering under which village chiefs and elders
300 administer rural Sierra Leone 's system of "customary" local government.
301
302 In all there were 150 comments from focus groups pertaining to burial, funeral ceremonies, and
303 reporting the death of Ebola patients. Of the evaluative statements, 71 (47%) were classed as
304 being aligned with enclave-ordered perspectives and 33 (22%) were classed as being aligned with
305 hierarchically ordered perspectives. Instances of "enclave" statements included demands or
306 suggestions that families be trained or empowered. "We will wear protective gear and do the
307 burial ourselves" was one statement. Another confirmed: "Let the CCC give [us] protective gear
308 (gloves, and PPE) and hand over the corpse to the family members, who will wash and dress [it]
309 and pray on the corpse. " Apparently people were not adverse to protective measures for the
310 mere act of burial. Most important was to maintain family intimacy for the funeral: "The CCC
311 [staff] should bring the corpse to the family and give the family protective gear to bury their
312 dead."
313
314 Other comments requested burial teams to permit family members to attend burials, wanted
315 teams to bury victims on family land or in the victim's village, or hoped that "safe burials" by CCC
316 staff would follow village ritual practices. Hinting at a stand-off, one commentator remarked:
317 "the government will bury them; the family will never see the corpse." A second, less extensive
318 set of 34 statements, contained items reflecting or endorsing the government-mandated Ebola
319 bye-laws. Based on rules first developed by chiefs in Kailahun District (the epicentre of the
320 disease in Sierra Leone) these requirements were promulgated as a national set of bye-laws for
321 Ebola control in August 2014 [16]. Typical statements repeat bye-laws or refer to epidemiological
322 issues. For example: "The burial team will bury the way authorities (require), (supervised) by
323 health officers" or "let the burial team continue to do the burial, as they have been doing" and "I
324 will advise (that] we call the burial team to come and do the burial, to avoid the spread of the
325 sickness."

Thirdly, enclave ordering imposes a strong emphasis on the manner of reporting death. It requires it to be done in a timely but formal manner, by those with direct knowledge of the circumstances, reporting heads of the affected families. Anything casual, approaching rumour or gossip, is frowned upon. In the case of an elder, a word out of place may attract a fine. This is because the enclaved rural community in Sierra Leone is a self-monitoring entity. Families must inform each other; reliance on state machinery for reporting births and deaths is not yet accepted as a matter of course.

Focus group members were asked to discuss their preferred ways to be informed about the deaths of Ebola victims. As expected, many comments stressed the importance of face-to-face reports from the case handling centre to the appropriate family head. Sometimes it was stated that a chief could be the proxy for the family. It was not entirely clear what actual practices were followed. CCC may not have had an agreed policy in this area. But it was seen as helpful that centres were close enough to permit visits, and some deaths seem to have been reported in the required face-to-face manner, perhaps because centres employed local people. Perhaps more surprising is the number of people who considered a phone call or radio announcement to be acceptable. These are, in fact, widely used media in funeral practice in Sierra Leone. Such announcements allow scattered family members to be fully and quickly informed. The key feature is that the message goes in a timely manner to the correct recipient.

iv. Acquiring land to set up a CCC

A potentially troublesome of clash of institutional values between communities and responders concerned the acquisition of sites for CCC. Land is a controversial issue in rural Sierra Leone because it brings up a compromise made by the British colonial power at the beginning of the 20th century over the authority of the state versus land-owning families. The Paramount Chief is "custodian" of the land but brokers the competing interests of families and government. International Ebola responders wanted land for CCC quickly. For this they turned to Paramount

Chiefs for rapid action, but there was often a push-back from families, who pointed out that the ultimate decision rested with them. CCC were welcome, but not necessarily on "our" land. In this respect, there was a clash of interest between responders and communities.

Names of landowning families are well known to the communities though people tend not to advertise ownership openly. In any land decision both landowning families and chiefs must be involved. A participant in one focus group discussion put the point neatly, when stating that "The chief should be approached for him to lead you to the landowner. The land owner will now negotiate with the person who wants the land."

Some families offered land free as a gesture of community solidarity. Other landholding families demanded acknowledgement for use of their land: "We were consulted by the Chief and we accepted to give the land even though they did not pay for it, but we were respected in the process of gaining the land." This demand for respect served to reinforce the basic local stance that land is family land, and cannot be expropriated, even in an emergency. Family sovereignty is apparent in the focus group extracts speaking of disgruntlement and compromise over land. Some statement expressed dissatisfaction and conciliation together: "We were not happy (with) how we were treated. We had wanted to cause confusion [create trouble] but [we did not because] we were thinking of the Ebola disease."

Discussion and conclusion

The present study has analysed family responses to Ebola community care centres. Some of the ways CCC opened pathways to community participation in Ebola care, e.g. through family involvement in food preparation and in inclusion in burial processes, have been traced. The evidence suggests that CCC were well received by communities and led to improved relationships of trust between communities and responders.

Location of case-handling facilities proved to be a crucial issue. Some responders felt that in a small country with good road accessibility to case-handling centres was not a major problem. This was to misunderstand the obligations placed upon family members to be present in helping care for the sick. Accessibility is not to be measured in miles by ambulance but in terms of the logistical challenges associated the family accompanying the patient. For example, people in Kambia were reluctant to allow their loved ones to be taken to the ETC in Port Loko, only twenty miles away on a very good road, because they did not have the connections and resources needed for family attendance. Who would prepare food and be on hand when the patient needed encouragement?

CCC helped address this issue by bringing case-handling closer to families. When the only option was referral to an ETC, families hid patients with high fevers, but once the CCC option was available families were more forthcoming in bringing cases for assessment. Most diagnoses were of malaria, and this was treated, and the patient discharged, to the relief of the family. If the diagnosis was of EVD, the CCC helped cushion the shock for both patient and families. Where before there was panic, and an ambulance driving to Bo or Kenema at high speed with sirens wailing, there was now a more calm and considerate process. It would be explained to the family that the best chance of survival was transfer to an ETC. But the CCC was equipped to accommodate an EVD patient if it was too late to arrange safe transport. The carers at the CCC were often themselves members of the local community, and their advice was trusted. CCC were small enough, and the structures were physically open enough, to allow family members to communicate directly with the patients from the perimeter of the facility. Messages would be sent to patients to hang in there, and not to lose heart; community expectations for family support were audibly maintained.

Directly caring for the sick and sharing of family food are important ways in which families reinforce social solidarity. Focus group discussants insisted that this expression of solidarity helps patients survive a devastating disease. Home cooking encourages the will to live. They view it as

409 an essential part of treatment. This insistence provides, in turn, some lessons for the
410 improvement of ETC, modified to function more like CCC in social terms. For instance, transport
411 could be hired to allow family members to follow referrals. Camps could have been built for their
412 accommodation next to each ETC. Equipping such camps with kitchens stocked with firewood,
413 water and other supplies to facilitate preparation of familiar food would be no more complex
414 than building and equipping the kitchens already part of standard ETC design. Members of
415 families would then be able to continue to take part in the monitoring and feeding of the patient,
416 even if visiting the "red zone" remained out of bounds.
417
418 The focus group material brought out the enormous significance of the issue of safe and dignified
419 burial. Some patients died in CCC, either from non-EVD diseases or because it was not possible to
420 transfer them to an ETC. CCC were built at a time when the problem of safe and dignified burial
421 had been recognised by the authorities. Although "safe burial" crews did the actual internments
422 staff encouraged families to attend, and this was appreciated by discussants. Attendance was
423 feasible because the families lived locally. This threw into contrast a major problem with the ETC,
424 that family members were often many miles distant with poor communications and did not know
425 when their loved ones had died or where they were buried.
426
427 Discussants were divided about the role of the family in Ebola burial. Some accepted burial by
428 trained teams as necessity, both for biosafety and in respect of national byelaws on "safe burial".
429 Others argued strongly that families could and should have been equipped and trained to do safe
430 burial for themselves, because it was said (for example) that burial team were never on time,
431 that corpses were not washed and dressed in *kasankei* (grave clothes), that there was no final
432 farewell and prayers for the dead, and that burial team members were strangers to the
433 deceased.
434
435 The issue of the land acquisition for building CCC proved somewhat controversial. Land belongs
436 to families, and not to government or the chiefs. Focus group materials evidenced difference

437 between those who believed the government or chiefs had a right to acquire land to build CCC
438 and a greater number of discussants who insisted that the land belonged to land-owning families,
439 who should have been consulted, despite the urgency of the epidemic. Examples of "good
440 practice" – CCC going through the right channels, for example - were also noted. Some families
441 offered land specifically to help communities fight EVD. But disgruntlements over land
442 sometimes surfaced, even though generally set on one side because of the epidemic emergency.
443 Given the small amount of land needed for both CCC and ETC it is perhaps surprising that
444 acquisitions of temporary leases proved so contentious. The more general point needs to be
445 taken that an improper approach to land acquisition is seen as a threat to community cohesion.
446
447 The CCC intervention threw light on the importance of local knowledge brokers in the process of
448 community adaptation to the risks of Ebola. The shift to a policy of "safe and dignified burial" in
449 November 2014 brought out the role played by Imams and Pastors in gaining acceptability for
450 changes in burial practice. Herbalists and Traditional Birth Assistants (TBAs) are equally influential
451 in rural communities. They are trusted in because they are resident in communities, and
452 accessible when needed. During the EVD epidemic in the Sierra Leone they were deliberately by-
453 passed. This was because of a fear that incautious handling of Ebola patients. Early on in the
454 epidemic stories circulated about "witch doctors" pretending to cure Ebola but instead spreading
455 the disease. The government then banned herbalists from practising for the duration of the
456 epidemic.
457
458 From the perspective of communities this was a wrong turn. Herbalists spread the disease in a
459 few early instances because they did not at that stage know what they were dealing with. They
460 became agents of infection not through wilfulness, but because they were the helpers of last
461 resort. Professionally trained medical practitioners also spread the disease in the earliest stages
462 of the epidemic, when it remained unidentified, because they lacked the training and resources
463 to deal with it. Like doctors and nurses, TBAs and herbalists quickly learned about the dangers of

464 EVD and modified their practices. As highly respected authorities, they could have been used to
465 spread correct knowledge of the disease.
466
467 Home care is another salient point for debate. CCC helped to get people to report EVD cases
468 earlier in Sierra Leone, and so contributed to epidemic downturn. Some communities were still
469 too remote for patients to be moved quickly. In such a case a hammock might be needed. This is
470 an expensive process and takes time to arrange. Moving the patient in the “wet” phase could be
471 highly hazardous to the carriers. Guidance and supplies to permit safe home care were needed
472 for such extreme cases. A protocol for coping with an Ebola patient at home was released by the
473 US Centers for Disease Control in November 2014 [1]. Some, if not all this knowledge, was known
474 by communities, from an era in which smallpox was still a scourge.
475
476 In sum, then, the policy of offering care for Ebola victims in small, quickly constructed handling
477 units placed where EVD case numbers were rising, to complement large-scale ETC, received
478 largely positive endorsement from rural communities in Sierra Leone. This applied both to CCC
479 locations and to neighbouring communities. Evaluation, accessed through focus group
480 discussions, confirms that CCC were compatible with community values concerning access to and
481 family care for the sick. “Safe burial” was more controversial. This directly challenged a ritual
482 activity seen as vital to maintaining good relations within and between rural families. Focus
483 groups also found land acquisition to build CCC a controversial topic, but this can be interpreted
484 as reflecting a larger problem of relations between communities and central government
485 unresolved since the colonial era. This was not an institutional clash specifically related to EVD.
486
487 It is not advocated that CCC should replace the ETC in future Ebola outbreaks, such as that
488 currently threatening parts the Democratic Republic of Congo. The main conclusion of this study
489 is that evidence for the social acceptability of CCC in rural communities in Sierra Leone reinforces
490 the case for a combined strategy, in which CCC are deployed as triage centres to screen out and
491 treat malaria and other diseases, while directing EVD cases towards further specialist care in ETC.

492 CCC also serve as effective learning sites through which communities can come to terms with the
493 biological challenges of EVD without local norms of community support in sickness being
494 undermined. In this respect, the experience of localised case handling in Sierra Leone offers
495 lessons that can be usefully disseminated throughout the wider field of Ebola response.
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