2400 mg, and 1200 mg every 8 h on day 1, and a maintenance dose of 1200 mg twice a day afterwards. Of note, this dose regimen is 50% greater than the one in the phase 3 trials of favipiravir for influenza in the USA (1800 mg twice a day on day 1, 800 mg twice a day on day 2–5). To reduce the chance of relapse in Ebola virus disease, we decided to give the treatment for 10 days, which corresponds to the time needed for an effective antibody response.[4]

Although modelling is a valuable method to optimise the search of a dosing regimen, it is not a substitute for clinical data. Tolerance, virological, and pharmacokinetic data will be obtained during the trial to help to refine the dose regimen.

We declare no competing interests. We thank Toyama Chemical for sharing with us detailed data on favipiravir pharmacokinetics. We also thank Caroline Semaille and Nathalie Morgensztejn from the French National Agency for the Safety of Medicine and Health Products for helpful discussions, and the REACTing network of Aviesan for scientific support.

*France Mentré, Anne-Marie Taburet, Jeremie Guedj, Xavier Anglaret, Sakoba Keïta, Xavier de Lamballerie, Denis Malvy

france.mentre@inserm.fr

INSERM, IAME, UMR 1137, F-75018 Paris, France (FM, JG); Université Paris Diderot, Sorbonne Paris Cité, Paris, France (FM, JG); Assistance-Publique Hôpitaux de Paris, Hôpital Bicêtre, Université Paris-Sud, Kremin Bicêtre, France (A-MT); INSERM U1012, Kremlin Bicêtre, France (A-MT); DHU Hepatinov, Kremlin Bicêtre, France (A-MT); UMR 897, INSERM, Bordeaux, France (XA, DM); Ministry of Health, Conakry, Guinea (SK); and UMR_D 190, Aix-Marseille Université, Institut de Recherche pour le Développement, Marseille, France (XdL)

1 Furuta Y, Gowen BB, Takahashi K, Shiraki K, Smee DF, Barnard DL. Favipiravir (T-705), a novel viral RNA polymerase inhibitor. *Antiviral Res* 2013; **100:** 446–54.

2 Smither SJ, Eastaugh LS, Steward JA, Nelson M, Lenk RP, Lever MS. Post-exposure efficacy of oral T-705 (favipiravir) against inhalational Ebola virus infection in a mouse model. *Antiviral Res* 2014; **104:** 153–55.

3 Oestereich L, Lüdtke A, Wurr S, Rieger T, Muñoz-Fontela C, Günther S. Successful treatment of advanced Ebola virus infection with T-705 (favipiravir) in a small animal model. *Antiviral Res* 2014; **105:** 17–21.

4 Ksiazek T, Rollin P, Williams A, et al. Clinical virology of Ebola hemorrhagic fever (EHF): virus, virus antigen, and IgG and IgM antibody findings among EHF patients in Kikwit, Democratic Republic of the Congo, 1995. *J Infect Dis* 1999; **179:** S177–87.

Community-based care of Ebola virus disease in west Africa

Although the numbers of patients contracting and dying from Ebola virus disease in the current outbreak are staggering, they are an underestimate since many patients are necessarily being cared for in the community by family and volunteers. This is the reality we have witnessed. Cumulative case numbers are about to exceed 20 000, but as the outbreak in reality consists of many smaller outbreaks across most districts and counties in the three most severely affected countries (Guinea, Liberia, and Sierra Leone), a mismatch often exists between cases and treatment unit bed availability. This reality necessitates the invention of novel and community-based case management strategies.

Although the ongoing west African Ebola virus disease epidemic is unprecedented in scale, the transmissibility and clinical course of infection is similar to that in previous Ebola outbreaks.[1–5] Conventional responses to an Ebola outbreak have centred on Ebola treatment units for isolation and case management, with concurrent community education and social mobilisation efforts. However, despite international response attempts, this outbreak has highlighted the difficulty in aligning the supply of treatment unit beds with demand. Difficulties in maintaining accurate and timely epidemiological data exacerbate the challenges of response planning. In Monrovia (Liberia), through September and October 2014, the number of Ebola treatment unit beds was perhaps a quarter of the actual need. It became routine to turn patients away. Now, although there are empty beds in the Liberian capital, patients are being infected in areas where there are no treatment units or else they are full. The inability to provide care universally

Figure: **Training of trainer session on how to use plastic bags to protect hands**
Photo credit: Yolanda Bayugo (WHO Headquarters, Geneva, Switzerland). Used with permission.

in formal treatment units aggravates social mobilisation difficulties and contradicts public health messages of the importance of early presentation for case management and infection prevention. When official advice conflicts with the service capacity, it creates confusion for the general public. The disconnect needed urgent alignment with a different public health strategy and, ultimately, more beds in Ebola treatment units.

At present, a substantial amount of care is provided at home and in spontaneously evolving community care centres, which are appearing in otherwise non-functioning hospitals, schools, and sporting arenas when family members or community leaders choose to not allow an affected person home with the inherent transmission risk now increasingly appreciated.[3,5,6] Community-based support for infection prevention and control and some form of clinical care was necessary.

Response efforts to acknowledge and support care being provided in the community were slow because of the fear of possibly exacerbating an already bad situation, but without the capacity to isolate thousands of individuals, community care was a reality. Non-governmental organisations aware of the need for

community care arranged for the distribution of around 400 000 home care packs in Liberia.

During September, 2014, and as requested by the Liberian Ministry of Health and Social Welfare, a community infection prevention and control strategy was created by a group formed of representatives of relevant non-governmental organisations and ministry staff. The strategy would identify community volunteers to go from house to house, providing education and checking for ill people. This estimated 10 000-strong workforce would need written or pictorial materials for dissemination, together with sufficient personal knowledge to minimise household transmission when an ill person was there. Adequate numbers of volunteers would allow for regular follow-up visits.

Around 250 trainers from various religious and non-government organisations were initially trained. They, in turn, trained and oversaw the community volunteers with the capacity of reaching the Liberian population at large. Training included practical and locally adapted sessions to demonstrate chlorine concentrations for disinfection, handwashing, and hand protection when gloves are unavailable (figure). To expect the community to use hospital-grade personal protective equipment is unrealistic. Wearing personal protective equipment can become dangerous because of dehydration and overheating in the community living environment in Liberia, and to remove it safely is difficult.[7]

Descriptions of the 1995 Ebola outbreak in Kikwit, Democratic Republic of the Congo, outlined care provided in homes and existing hospital facilities. Response efforts focused on education and minimisation of contact. Personal protective equipment used by family members was often limited to gloves and hand disinfection. The situation in west Africa necessitated a similar diversion away from the conventional infection prevention and control measures exercised in more recent Ebola virus disease outbreak responses. The precautions in Kikwit were instituted in mid-May, 1995, and the last case of Ebola virus disease occurred in mid-July of the same year.[7]

Outbreak response is about adapting to the realities of the situation. The outbreak continues to evolve with varying numbers in the various cities and towns of the affected countries. Naturally, there will often be inadequate numbers of local treatment unit beds so this need to provide innovative community-based case management options will persist. The community will be regularly called upon to provide frontline care. We must prepare, educate, and offer protection while we wait for the international response to catch up and provide conventional options, in the form of more beds in Ebola treatment units or innovative methods through drugs and vaccines.

We declare no competing interests.

*Sharon Salmon, Mary-Louise McLaws, Dale Fisher**

mdcfda@nus.edu.sg

Nursing Administration, National University Hospital, Singapore (SS); UNSW Medicine, The University of New South Wales, Sydney, NSW, Australia (SS, M-LC); Department of Medicine, Yong Loo Lin School of Medicine, National University of Singapore, Singapore (DF); and Division of Infectious Diseases, National University Hospital, Singapore (DF)

1 Borchert M, Mutyaba I, Van Kerkhove MD, et al. Ebola haemorrhagic fever outbreak in Masindi District, Uganda: outbreak description and lessons learned. *BMC Infect Dis* 2011; **11:** 357.

2 Bwaka MA, Bonnet MJ, Calain P, et al. Ebola hemorrhagic fever in Kikwit, Democratic Republic of the Congo: clinical observations in 103 patients. *J Infect Dis* 1999; **179** (suppl 1)**:** S1–S7.

3 Dowell SF, Mukunu R, Ksiazek TG, Khan AS, Rollin PE, Peters CJ. Transmission of Ebola hemorrhagic fever: a study of risk factors in family members, Kikwit, Democratic Republic of the Congo, 1995. *J Infect Dis* 1999; **179** (suppl 1)**:** S87–91.

4 Ndambi R, Akamituna P, Bonnet MJ, Tukadila AM, Muyembe-Tamfum JJ, Colebunders R. Epidemiologic and clinical aspects of the Ebola virus epidemic in Mosango, Democratic Republic of the Congo, 1995. *J Infect Dis* 1999; **179** (suppl 1)**:** S8–10.

5 Rowe AK, Bertolli J, Khan AS, et al. Clinical, virologic, and immunologic follow-up of convalescent Ebola hemorrhagic fever patients and their household contacts, Kikwit, Democratic Republic of the Congo. Commission de Lutte contre les Epidemies à Kikwit. *J Infect Dis* 1999; **179** (suppl 1)**:** S28–35.

6 Francesconi P, Yoti Z, Declich S, et al. Ebola hemorrhagic fever transmission and risk factors of contacts, Uganda. *Emerg Infect Dis* 2003; **9:** 1430–37.

7 Guimard Y, Bwaka MA, Colebunders R, et al. Organization of patient care during the Ebola hemorrhagic fever epidemic in Kikwit, Democratic Republic of the Congo, 1995. *J Infect Dis* 1999; **176** (suppl 1)**:** S268–73.