definition of Marburg virus disease. Evidence on the efficacy and safety of therapeutics for the disease, including remdesivir, should be gathered through well-designed trials during future epidemic responses.

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Sudan Virus Disease among Health Care Workers, Uganda, 2022

TO THE EDITOR: Infections among health care workers represented a high proportion of cases during the first weeks of the 2022 Ebola outbreak in Uganda.[1] This Ebola outbreak, which was caused by Sudan virus, resulted in 19 infections in health care workers among 142 confirmed cases.[1] Not only are health care workers vulnerable to infection, but cases that occur early after detection of an Ebola outbreak carry an increased risk of death[2] as health systems scramble to set up well-functioning Ebola treatment units. Ethical priority for immediate and quality care of infected health care workers is buttressed by the need to minimize fear, burnout, and strikes among these workers, since such complications could ultimately lead to deaths among patients with or without Ebola disease.[3]

On September 20, 2022, Uganda declared an Ebola outbreak due to Sudan virus in the Mubende district. We report on seven health care workers who contracted Sudan virus disease, most likely through two nosocomial transmission events that occurred before the identification of the outbreak. On September 15, 2022, an exposure event occurred during an emergency exploratory laparotomy that was performed in a patient who was thought to have a perforated bowel (Figs. S1 through S3 in the Supplementary Appendix, available with the full text of this letter at NEJM.org). Unfortunately, this patient died during the procedure and is considered to have had a probable case of Sudan virus disease. The patient was found to be a member of the same household as the patient with the first confirmed case of Sudan virus disease in this outbreak. All five of the providers in the operating room were infected (Patients A1 through A5 in Table 1) and were subsequently admitted to the Fort Portal Regional Referral Hospital (FPRRH) Isolation Unit in western Uganda.

The FPRRH Isolation Unit was established in 2017 to support therapeutic trials against filoviruses and continues to be used for clinical research focused on sepsis.[4] The symptoms and complications among the health care workers with Sudan virus disease were similar to those described for Ebola virus disease (Table 1 and Figs. S4 and S5). Influenza-like illness was followed by severe diarrheal disease and multiorgan failure among the patients with severe cases. Lung and cardiac ultrasonography informed the choice of fluid resuscitation volumes among the patients with respiratory failure (Fig. S6). Six of the seven infected health care workers received remdesivir on a compassionate-use basis at 5 to 13 days after symptom onset. One of the infected health care workers received a combination of the investigational antibody product MBP134[5] with remdesivir at 5 days after symptom onset, had abatement of symptoms and improvement in laboratory measures, and survived. No cases of secondary transmission occurred at the FPRRH Isolation Unit. Five of the seven infected health care workers survived to discharge.

Table 1. Epidemiologic and Clinical Characteristics of the Patients.*

Patient No.	Age in Yr (Sex)	Suspected Exposure	Incubation Period	Initial Symptoms	Diagnostic Plasma Ct	Clinical Laboratory Abnormalities during Hospitalization				Ultrasound Abnormalities	Complications	Outcome
						Peak Creatinine	Peak Proteinuria	Peak Liver AST/ALT	Platelet-Count Nadir			
			days			*mg/dl*		*U/liter*	$\times 10^{-3}/\mu l$			
A1	37 (M)	Exploratory laparotomy	2	Myalgias, arthralgias, and subjective fever	22.6	NA	NA	NA	NA	NA	Respiratory failure	Death
A2	27 (M)	Exploratory laparotomy	3	Malaise and subjective fever	29.1	1.2	Severe	528/175	84.3	Discrete and thick B lines with irregular pleural lines, small pericardial effusion	Low oxygen saturation leading to provision of supplemental oxygen	Discharge
A3	58 (F)	Exploratory laparotomy	3	Generalized weakness, back pain, and arthralgias	22.9	10.4	Severe	>2000/461	148.4	Discrete B lines, hyperdynamic LV function, >50% IVC collapsibility	Respiratory failure, renal failure, liver failure, encephalopathy	Death
A4	39 (M)	Exploratory laparotomy	2	Back pain and progressive generalized weakness	28.1	1.0	Trace	97/65	183.5	Small subpleural consolidation	Low oxygen saturation leading to provision of supplemental oxygen	Discharge
A5	39 (M)	Exploratory laparotomy	3	Loose stools, subjective fevers, and diaphoresis	21.5	15.3	Moderate	227/53	139.9	Discrete B lines	Renal failure	Discharge
B1	25 (M)	Care of child with probable SVD	2	Mild headache, generalized weakness, and subjective fever	38.1	0.8	NA	41/49	293.8	Discrete B lines with one area with an irregular pleural line	None	Discharge
C1	34 (M)	Care of Patient B1	4–7	Mild headache and generalized weakness	23.0	0.8	Trace	759/375	72.3	Discrete B lines with one area with an irregular pleural line	None	Discharge

* The seven health care workers included two medical students, two assistant surgeons, two house officers, and an anesthetist. ALT denotes alanine aminotransferase, AST aspartate aminotransferase, Ct cycle threshold, IVC inferior vena cava, LV left ventricular, NA not available, and SVD Sudan virus disease.

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FFR-Guided Complete or Culprit-Only PCI in Patients with Myocardial Infarction

TO THE EDITOR: Böhm et al. (April 25 issue)[1] explored the effectiveness of fractional flow reserve (FFR)–guided complete revascularization as compared with culprit-only percutaneous coronary intervention (PCI) in patients with ST-segment myocardial infarction (STEMI) or very-high-risk non-STEMI with multivessel disease. Their trial, FULL REVASC (FFR-Guidance for Complete Nonculprit Revascularization), showed that the use of FFR for complete revascularization did not lead to a lower risk of unplanned revascularization procedures than culprit-only PCI. However, this finding is in contrast with results from the COMPLETE (Complete versus Culprit-Only Revascularization Strategies to Treat Multivessel Disease after Early PCI for STEMI) and FIRE (Functional Assessment in Elderly MI Patients with Multivessel Disease) trials.[2,3] In addition, a meta-analysis showed lower risks of major adverse cardiac events and unplanned revascularization procedures with both FFR-guided and angiography-guided complete revascularization than with culprit-only PCI.[4]

The discrepant findings may stem from the differences in how unplanned revascularization was defined in the trials. The definition of unplanned revascularization in the FULL REVASC trial — any revascularization not scheduled at discharge — may underestimate actual events as compared with the broader definitions that were used in other trials, which considered any ischemia-driven revascularization as being unplanned.[5] The definition that was used in this trial could skew results. Revisiting the data set of this trial with the definition used in other trials could clarify the outcomes, potentially enhancing insights into the real-world effectiveness of FFR-guided coronary interventions.

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THE AUTHORS REPLY: We agree with Li that the definition of unplanned revascularization that