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Perspective

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Doing Today's Work Superbly Well — Treating Ebola with Current Tools

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The Ebola outbreak that is ravaging West Africa is a daily staple of the lay press and of scholarly medical publications. Ebola evokes fear among both the public and clinicians. It also evokes a sort of therapeutic nihilism — after all, if there is no treatment, what can be done? And without an Ebola-specific antiviral medication, of what use are infectious-disease clinicians? Without oxygen, let alone mechanical ventilators, how can acute and critical care clinicians possibly contribute?

We have traveled several times to West Africa and done primary patient care in treatment centers and hospitals in Guinea (Conakry and Guéckédou), Sierra Leone (Kenema, Bo, and Daru), and Liberia (Monrovia, Bong, and Foya). Before each trip, as we prepared to go to the front lines of Ebola medical care as part of World Health Organization and Médecins sans Frontières clinical teams, we, too, felt a certain unease about treating a highly transmissible infection for which there is no vaccine, no specific therapy, and a high mortality rate. Yet we also appreciated that most viral illnesses, and certainly most critical illnesses, have no specific therapy. And after spending much of the past 5 months treating patients with Ebola virus disease (EVD), we are convinced that it's possible to save many more patients. Our optimism is fueled by the observation that supportive care is also specific care for EVD — and in all likelihood reduces mortality. Unfortunately, many patients in West Africa continue to die for lack of the opportunity to receive such basic care.

EVD presents much as many other viral infections do, with nonspecific signs such as fever, asthenia, and body aches. After a few days, however, the predominant clinical syndrome is a severe gastrointestinal illness with vomiting and diarrhea. Volume depletion with a range of metabolic disorders ensues, and hypovolemic shock ultimately occurs.

A common assumption is that a lack of material resources constitutes the dominant barrier to clinical care. That is not the case.

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Intravenous catheters, fluids, and electrolyte replacement are readily available but thus far are being used much too sparingly. When patients can no longer drink, placement of an intravenous catheter and delivery of appropriate replacement solutions are required, but we have seen many critically ill patients die without adequate intravenous fluid resuscitation. On the occasions when we've been able to obtain basic biochemistry measurements, we have commonly found extreme serum sodium and potassium abnormalities. With the current focus on diagnosis of Ebola, we are routinely measuring Ebola viral loads in some of the world's most logistically challenged medical care environments using advanced polymerase-chain-reaction assays that are unavailable in most tertiary care centers. Yet we are not routinely deploying basic biochemical and hematologic diagnostic capabilities. We could do so. Simple interventions can prevent deaths attributable to hypovolemia and metabolic abnormalities. The high mortality from Ebola continues to reflect the natural history of the illness, not an inability to alter its course.

We believe we can and must do better in providing supportive care. There is a historical bias against aggressive interventions, including intravenous cannulation, for many transmissible illnesses. Percutaneous injury to health care workers does carry substantial risk, but such risks are not specific to Ebola. It is now ethically untenable and medically unjustifiable to deny life-supporting therapies to patients with human immunodeficiency virus (HIV) infection, but only a few decades ago, the fear of HIV and the perception that AIDS was uniformly fatal led to an approach similar to that currently being taken for EVD.

Another common assumption is that a lack of skilled personnel constitutes a barrier to clinical care; this assumption is in fact valid. There is an insufficient number of clinicians to meet the primary and routine care needs of the population. Yet the skills needed to care for patients with Ebola are fundamental acute care skills, not the privileged domain of tropical medicine, infectious disease, or critical care.

There has recently been immense media, public, and medical attention to specific treatments for Ebola virus infection. Although these experimental interventions represent important potential treatments, they also reflect our seemingly innate focus on developing magic bullets. It seems that focusing on reducing mortality in the existing "control group" by applying the current standard of care is less interesting, even if much more likely to be effective. Though we recognize the potential incremental value of new antiviral options, we believe that EVD requires a greater focus on available basic care. We recommend that experimental therapy be introduced on a foundation of very good supportive care; indeed, in assessing these therapies' effectiveness, it will be critical to consider the extent to which historical controls received such supportive care.

With nearly 5000 cases to date, more than half of them in the past month, there is a pressing need to gain control of this epidemic. As we mourn the loss of nearly 3000 victims thus far, there is an urgency to prevent new cases, but also to reduce the case fatality rate.

Public health interventions including characterizing the outbreak epidemiology, contact tracing, social mobilization, and public education are essential steps in stopping Ebola and will ultimately save many more lives than can be saved by individual patient care. The high mortality associated with Ebola, however, threatens the ability to perform many of these tasks. The public is reluctant to engage in contact tracing, infected persons are hesitant to present for treatment, and clinicians are frightened to provide care. Although infection prevention and outbreak control are essential components of the Ebola response, they need not be at odds with equally essential syndrome-specific therapy for people who are already infected. Excellent clinical care and improved outcomes will result in improved community compliance, will help to break transmission chains, and will lead to a greater willingness of health care workers to engage in care delivery. To quote William Osler, "The best preparation for tomorrow is to do today's work superbly well."

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

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