Remaining Ebola free

Shima Gyoh suggests that it is time for some forward planning - and educating - to prevent another Ebola epidemic taking hold

It was great news when the World Health Organization declared the end of the Ebola Virus Disease (EVD) epidemic in Liberia. We look forward to Sierra Leone and Guinea being also declared free. Since the discovery of the virus in 1976, the medical profession has regarded the dangerous malady as 'endemic' in the tropical rainforests of the Congo. Infections with the virus tended to occur in the small, relatively isolated villages of the forest, associated with the handling of the flesh of forest primates whose unexplained multiple deaths sometimes preceded human epidemics. This partly explains the slow reaction from the rest of the world when Médecins Sans Frontières were struggling to control an outbreak in Guinea. Once it entered the environment with better communications, the virus rapidly spread. Soon, Sierra Leone and Liberia were infected, and Nigeria got it from an air traveller. Although fear of a pandemic was on the cards, the manner of spread indicated that countries with strong health systems could contain the disease and prevent epidemics, and this happened in the USA, Spain and the UK. Nigeria's health system is nowhere near as advanced, but the efficient application of isolation and contract tracing quickly stopped the epidemic, giving much hope that the same could be done in the other West African states.

The statistics indicate that the epidemic will soon end in Sierra Leone and Guinea. Though the virus does not perpetuate itself in the human community in the true sense of the word 'endemic', the region itself will become liable to reintroduction from the zoonotic reservoir, and recurrence can no longer be excluded. The countries must therefore take certain steps to prevent it, and to quickly contain it should it occur. We must strengthen our health systems by providing the basic infrastructure, from abundant potable running water, environmental sanitation with efficient sewage disposal to robust, and functioning primary healthcare accessible to all citizens with no village being in a blind spot. The population would be educated on the dangerous traditional practices detrimental to health. As hand-washing becomes established after the epidemic, shaking of hands, the much loved sign of friendship discouraged during the epidemic, will return. Such developments are affordable to all countries in Africa if their governments get their priorities right.

EVD is extremely dangerous to study, requiring the highest level of biosafety for the laboratory and totally occlusive protective clothing and top skills for the researcher. Its zoonotic reservoir and cycle are not known for sure. Primates and other animals that transmit it to man are themselves highly susceptible and cannot be the true reservoirs. Bats are known to be the zoonotic reservoir for its cousin, the Marburg virus, and certain species of fruit bats have been found to harbour the virus. They have been linked to primary human infection, though largely on circumstantial evidence. The entire West African epidemic was traced to one index case in Guinea, but the story of how the primary infection occurred, published in *Nature*,[1] seems rather speculative. A two year old child 'playing' with bats under a large hollow kola tree hosting thousands of one species of bat got the primary infection. The tree was subsequently burnt down, but all the bats also died in the fire as if they were glued to the presumably dry, burning tree.

'…there were no other representatives of the same bat species in the area, says Fabian Leendertz, lead author of the research team from Robert Koch Institute, Berlin'.[1]

Genetic study shows that the virus has made only one genetic change which enabled it to jump from animal to man. Despite the distance, the virus causing the West African epidemic was found to be of the same clad as the one in the Congo infections. The genetic drift resulting from the massive propagation in the West African epidemic has not adapted it for endemicity in the human host. The unprecedented spread is due to the better communications in the area combined with the weak health structures of the region.

The epidemic spurned accelerated research for treatment and vaccines, and it is hoped that one with a long period of protection, like in yellow fever, would be found. With a mortality rate of about 70%, drug and vaccine trials face huge ethical dilemmas of running controls. Early diagnosis and containment are presently the best means of dealing with the Ebola challenge. It requires upgrading the microbiological laboratories and the handling of investigation for viral infections. Each country should maintain at least one biosafety laboratory of the highest grade (4) strategically located to investigate suspected viral haemorrhagic fevers, of which EVD is only one, and well-equipped isolation hospitals with a core of well-trained staff that can immediately swing into action at short notice.

Shima Gyoh has held many posts ranging from village doctor to DG of Nigeria's Federal Ministry of Health and Chair of the Medical and Dental Council of Nigeria.

Reference

1. Maron D F. New Clues to where Ebola Started. *Nature* 2014; doi:10.1038/nature.2014.16651.

SIEMENS

Siemens adds three new Haematology Systems to its portfolio of scalable Solutions.

The Diagnostics Division of Siemens Healthcare has announced the launch of three new scalable haematology systems: the ADVIA 360 System, ADVIA 560 System, and ADVIA 560 AL System. These lower capacity systems offer state-of-the-art haematology testing capabilities for small to mid-sized laboratories and may also be used as back-up systems for larger laboratories.

Engineered for safety and ease-of-operation, the new ADVIA haematology systems help optimize and manage workflow through several convenient features, such as the choice of open- or closed-tube sampling and customizable result printing. Automatic anti-clogging and cleaning procedures are employed to ensure results reliability. Along with automated maintenance, this reduces manual procedures and biohazard exposure.

The systems offer fast, high quality CBC testing, running up to 60 samples per hour. Other system features include: the option for manual or automatic calibration procedures, a cap-piercing function for accurate and safer sampling, a multilingual operating menu and bidirectional LIS communication for easy patient data transfer between laboratories and minimized paper-based work lists.
"With major differences in haematology testing volumes from laboratory to laboratory and network to network, Siemens' scalable options are critical to meet the needs of our customers," says Stefan Wolf, CEO, Haemostasis, Haematology and Specialty Business Unit, Diagnostics Division, Siemens Healthcare. "We are proud to add these new feature-rich ADVIA haematology systems to our portfolio of analyzers to enable laboratories of all sizes to benefit from reliable, easy-to-use, cost efficient haematology solutions."

With a compact footprint, the ADVIA 360 System allows smaller laboratories to efficiently generate reliable and accurate results while conserving precious benchtop space. This system provides a three-part white cell differential and storage capacity for 10,000 results. An integrated ticket printer streamlines results reporting.
The ADVIA 560 System can serve as the primary haematology analyzer in small to mid-sized laboratories and as a backup for the company's ADVIA 2120i System in larger laboratories. It provides a five-part white cell differential and storage capacity of 100,000 results. Also, two scattergrams and two histograms per result help aid interpreting disease-state information. The ADVIA 560 AL System offers automatic sampling with an optional autoloader that simply plugs into the side of the system for even greater workflow efficiency and true "walk-away" capability.

For further information about Siemens entire family of scalable haematology systems, please visit: www.healthcare.siemens.com/hematology.

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