Ebola: Urgent need for early-response capability

The Ebola outbreak in West Africa, which is devastating many local communities, highlights the importance of host governments, industry and the international community having an immediate, first-response capability in place.

The absence of this capability in Guinea, Sierra Leone and Liberia has likely contributed greatly to the recent rapid spread of the disease.

Previous outbreaks of the viral haemorrhagic fevers Ebola and Marburg have generally been easier to contain because they have been in remote rural areas with lower population densities and lower population mobility. Under such circumstances, risk mitigation measures have been much easier to implement. Once the disease gets into higher population centres, which are more mobile, the disease can easily spread locally and to international destinations. The mortality rate for Ebola infections is 60-80%.

Mining companies often develop projects in relatively remote and undisturbed animal habitats. The deforestation that accompanies the building of new roads and power lines, the installation of processing plant and buildings and the inevitable expansion of the footprint of local communities and agriculture tend to fragment wildlife habitats and increase the chances of zoonotic disease transfer to humans. As more than 75% of emerging infectious diseases in tropical "hotspots" are known to have originated from animal reservoirs, the threat to human life in the vicinity of remote mining operations is obvious.

The animal groups considered most likely to spread new Ebola and Marburg infections to humans include bats and non-human primates (apes and monkeys). Eating infected game meat is the common transmission route for the local population. The common person-to-person transmission route is through blood, body fluids and tissues of an infected person. It is the potential for new outbreaks of Ebola and Marburg that resource companies are currently focussed on.

The issue of emerging infectious diseases in the tropical "hot spots" has attracted a great deal of research work in recent years under the Emerging Pandemic Threats Program funded by USAID, the aim of which is to identify and prevent at source, the spread of emerging infectious diseases. Under this program, a set of risk-mitigation toolkits has been co-developed by FHI 360 (a non-profit human development organisation) and Ecology & Environment (a global network of professionals and industry leaders).

These toolkits are an integral component of the IDRAM Initiative, a programme led by Chatham House, and again funded by USAID, that supports companies in the extractive industry in emerging infectious disease risk assessment and management. Field testing of the toolkits in the Katanga Copperbelt was undertaken in mid-2014, project managed by International SOS, and involved four copper mining companies; Freeport McMoRan Inc (Tenke Fungurume Mine), MMG Ltd (Kinsevere Mine), Tiger Resources Ltd (Kipoi Mine) and Mawson West Ltd (Dikulushi and Kipoi Mines).

Professor David Heymann, head of the Centre on Global Health Security at Chatham House and one of the experts overseeing the IDRAM Initiative, has many years field experience responding to Ebola outbreaks and as with previous outbreaks recommends a three-pronged response strategy.

Firstly, patients are identified and isolated; and protective clothing provided to health workers.

Secondly, contacts of all patients with Ebola are monitored, and their temperature taken twice a day for three weeks (the maximum incubation period). Those with fever are isolated until diagnosis can be confirmed and those with Ebola hospitalised.

Thirdly, individuals are informed on how to protect themselves and their families and a system for safe burials is instituted in communities that have been affected.

Unfortunately, local customs, particularly those associated with burial rites, are often responsible for the rapid transmission of disease. Had this three-pronged procedure been implemented at the first signs of the outbreak in Guinea, perhaps the current situation could have been largely avoided.

Resource companies operating in regions of Africa where emerging infectious diseases are known to be an issue need to work together and with local health authorities to minimise risk by engaging in preventive activity such as health education programmes and disease surveillance and alert networks, as well as in outbreak preparedness and response activities by jointly establishing an early-response capability with appropriate PPE (personal protective equipment), strategically located in-country, and a capable management team at-the-ready.

This team should include medical and paramedical people from the various mines within a mining region, as well as representatives from the provincial health authorities. The team should be capable of reacting within hours of the notification of an outbreak, not days or weeks. Regular simulation exercises held in collaboration between mining companies and health authorities can ensure that staff skill levels are maintained and management processes continually refined to optimise the response to a real outbreak when one occurs.

Directors and senior officers of resource companies have a duty-of-care responsibility to provide a safe working environment for employees, no matter where in the world they happen to be deployed. This becomes more of an issue when the deployment is to remote locations characterised by increased levels of health risk on the African continent.

Directors and senior officers of companies also have a responsibility to provide an appropriate level of guidance and training to employees before deployment to projects and mine sites in Africa. This training must be consistent with the employee's experience in dealing the risks likely to be encountered.

Rather than companies doing their "own thing in isolation" at individual mine sites, a coordinated industry approach which includes the host government health authorities is more likely to deliver a better result. Mining companies within a particular region could contribute to the cost of the PPE equipment and other prevention and response interventions deemed appropriate on the basis of company size or production level, so that costs are equitably shared. Such an approach is not only likely to be considerably more cost-effective, but more importantly, may be more effective at mitigating the devastating health risks associated with such disease outbreaks.

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Bill Turner is chairman of the Australian African Mining Industry Group (AAMIG). He has worked internationally at a senior level in Africa, the Middle East, the Former Soviet Union and South-East Asia for more than 30 years. He has been involved at all levels, from grass-roots exploration through to mine development and metal production and his most recent position was as chief executive of Anvil Mining Ltd.