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## 2015: review of the year

The year, progress was made for Ebola virus disease, genetic disorders, and the health of the planet and its population, with two new global agendas agreed. Farhat Yaqub reports.

**Ebola: beginning of the end** International agencies, notably WHO, were criticised over their inadequate surveillance and slow response to the Ebola outbreak in west Africa in several reports this year. Good news, however, came in July: the interim results were reported from a cluster-randomised trial of ring vaccination with a novel Ebola virus vaccine in Guinea. From 6 days after vaccination, no new cases of Ebola virus disease were diagnosed in contacts of suspected cases given immediate or delayed vaccination. Positive developments were also noted in countries: Guinea reported its last case of Ebola on Oct 29, and, on Nov 7, WHO declared that transmission had stopped in Sierra Leone. In Liberia, however, Ebola virus disease re-emerged in a cluster of three confirmed cases in the week ending Nov 22, after WHO had declared that virus transmission had ended on Sept 3.

**MERS in Asia** The first cases of Middle East respiratory syndrome (MERS) in South Korea and China—the largest cluster outside of the Middle East—drew attention to the shortcomings in the surveillance system for the prevention of importing infectious diseases. 1621 laboratory-confirmed cases of infection with the MERS coronavirus (including 584 deaths) in 26 countries have been reported to WHO since September, 2012. More than 85% of cases were reported in Saudi Arabia. This year, 185 laboratory-confirmed MERS cases were reported in South Korea. The index case, diagnosed on May 20, had travelled in the Middle East before returning to South Korea. The other patients in South Korea were the high-risk contacts of this index case. China also reported its only laboratory-confirmed

case of MERS; this case was the son of a South Korean patient.

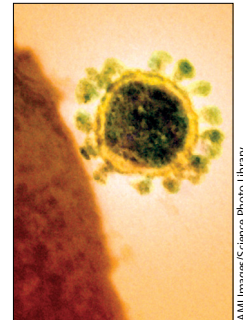
**Nepal's crises** An earthquake of magnitude 7.8 struck Nepal on April 25, killing more than 8700 people and injuring more than 22 300. 2 weeks later, on May 12, another earthquake of 7.3 magnitude occurred. An estimated 8 million people (about a third of Nepal's population) were affected by the earthquakes and more than 300 aftershocks. More than 160 000 homes were destroyed and vital infrastructure was severely damaged; 765 health facilities needed to be reconstructed after the earthquakes. Nepal faced another humanitarian crisis at the end of the year with a blockade at its border with India that caused severe shortages of fuel, food, and medicines. As *The Lancet* went to press, the blockade was still in place.

**Europe's refugee crisis** According to the Office of the UN High Commissioner for Refugees (UNHCR), more than 411 000 refugees and migrants travelled to Europe by sea this year. The Italian Government and Ministry of Health hosted a WHO high-level meeting in Rome on Nov 23–24 about the health of refugees and migrants. The attending ministers and representatives of the member states of the WHO European Region (EURO), Office of the UNHCR, UNICEF, European Commission, European Centre for Disease Prevention and Control, and International Organization for Migration discussed the challenges to public health from the movements of large numbers of refugees and migrants to transit and destination countries. To help address some of the issues, the goals of the Public Health

Aspects of Migration in Europe project by WHO EURO include the avoidance of disparities in health status and access, and ensuring the rights of refugees and migrants to health care.

**Greek tragedy** Greece's financial crisis and imposed austerity measures continued to harm its health system and the health of its people. Only 4% of the gross domestic product is expected to be spent on health care this year, compared with 10% in 2009. 2.5 million of 11 million people in the country are unemployed and do not have health-care coverage. There are severe shortages of medical staff and medicines, including insulin and drugs for cancer. Screening for some cancers has also been reduced. Rates of depression, suicide attempts, and death by suicide in adults have increased.

**Financing development** At the Third International Conference on Financing for Development in Addis Ababa, Ethiopia, during July 13–16, the UN, World Bank Group, the Canadian, Norwegian, and US Governments, and country and global health leaders launched the Global Financing Facility



MERS coronavirus

See [Editorial](#) page 2445  
See [World Report](#) page 2461

For the ring vaccination trial see [Articles](#) *Lancet* 2015; **386**: 857–66

For more on MERS in Asia see [Editorial](#) *Lancet* 2015; **385**: 2324

For more on Europe's refugee crisis see [World Report](#) *Lancet* 2015; **386**: 2042–43

For more on the Greek health crisis see [Editorial](#) *Lancet* 2015; **386**: 104

For more on financing for development see [http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA\\_Outcome.pdf](http://www.un.org/esa/ffd/wp-content/uploads/2015/08/AAAA_Outcome.pdf)



8 million Nepalese people were affected by earthquakes in April and May this year



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For the **TRANSPORT and TRAFFIC** trials see *N Engl J Med* 2015; **373**: 220–31

For the **cystic fibrosis gene therapy** study see *Articles Lancet Respir Med* 2015; **3**: 684–91

For more on the **meningitis B vaccine** see <http://www.meningitis.org/menb-vaccine>

For the **US mitochondrial study** see *Nature* 2015; **524**: 234–38

For the **2030 agenda for sustainable development** see <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

For **COP21** see <http://www.cop21.gouv.fr/en>

For more on **IARC's results** see *News Lancet Oncol* 2015; **16**: 1599–1600

For more on **polio** see *World Report Lancet* 2015; **386**: 1521–22

(GFF). The GFF is a financing platform to support the UN Secretary-General's Global Strategy for Women's, Children's and Adolescents' Health and the Sustainable Development Goals. The goal of the partners of the GFF is to support 62 high-burden low-income and lower-middle-income countries. During the next 5 years, US\$12 billion will be used from domestic, international, private, and public resources for the health of women, children, and adolescents in the first round of countries to benefit from the GFF: Democratic Republic of the Congo, Ethiopia, Kenya, and Tanzania.

**Cystic fibrosis** Two very different, promising treatments for patients with cystic fibrosis were reported this year. Pooled analyses of 1108 patients who were homozygous for Phe508del (the most common *CFTR* mutation) in the TRANSPORT and TRAFFIC randomised, placebo-controlled trials in Australia, Europe, and the USA, showed that the combination of lumacaftor and ivacaftor at all doses tested significantly improved the mean absolute change from baseline in the percentage predicted forced expiratory volume in 1 s (FEV<sub>1</sub>) at 24 weeks. On July 2, the US Food and Drug Administration approved the combination treatment lumacaftor 200 mg plus ivacaftor 125 mg (Orkambi, Vertex Pharmaceuticals, Cambridge, MA, USA). However, the high cost of the treatment—US\$259 000 per year—has been criticised. Gene therapy for cystic fibrosis was also in the news. In a randomised, phase 2b study in the UK in patients with any combination of *CFTR* mutations, repeated nebulisation with non-viral *CFTR* gene-liposome complex pGM169/GL67A slightly improved the change in percentage predicted FEV<sub>1</sub> versus placebo at the 12-month follow-up.

**Vaccine roll-out** In March, after long negotiations between the

UK Government and Glaxo-SmithKline about the costs of the meningitis B vaccine (Bexsero), the Health Secretary Jeremy Hunt announced plans to roll out meningitis B vaccinations for babies. Since September, parents have been offered meningitis B vaccination for their babies if born on or after July 1, as part of a routine National Health Service (NHS) programme. The vaccine is recommended for babies aged 2 months, with a second dose at age 4 months, and a booster dose at age 12–13 months. It has also been offered on the NHS to parents for children born on or after May 1, as a one-off catch up.

**Three-person IVF** Mitochondria were in the spotlight this year. In the UK, a new law for mitochondrial replacement (three-person in-vitro fertilisation) came into effect on Oct 29, after the House of Commons and the House of Lords voted in favour of it. Mitochondrial replacement will only be allowed for the avoidance of serious mitochondrial diseases in children. Meanwhile, in the USA, investigators reported the generation of genetically corrected pluripotent stem cells from patients with common heteroplasmic mutations implicated in mitochondrial diseases.

**Global agreements** This year was an important one for global health. On Sept 25, the UN General Assembly announced the new agenda for sustainable development for 2016–30. 17 Sustainable Development Goals and 169 targets have been designed to build on the Millennium Development Goals. The health goal (number 3) calls on countries to ensure healthy lives and promote wellbeing for all individuals at all ages. At the end of November, in Paris, France, about 50 000 participants gathered for the 21st Conference of the Parties to the UN Framework Convention on Climate Change (COP21). At COP21, a legally binding and universal agreement was

made on climate, with the aim to keep global warming to less than 2°C. See World Report p 2461.

**Meaty issue** One health story received widespread coverage—and criticism. On Oct 26, WHO's International Agency for Research on Cancer (IARC) Monograph Working Group reported some of the results of its assessments of the carcinogenicity of processed meat. According to the group's findings, processed meat was classified as "carcinogenic to humans" (IARC group 1) based on evidence from studies linking consumption of 50 g/day with an 18% increase (95% CI 1.10–1.28) in the risk of colorectal cancer. Also, a positive association was noted between the consumption of processed meat and stomach cancer. However, the classification received criticism because it put processed meat in the same IARC group as formaldehyde, tobacco, and all forms of asbestos. Also, the working group only reviewed existing evidence and did not gather new evidence. Some researchers have called for a retraction of the results.

**Polio worldwide** Europe reported its first cases of polio since 2010. On Sept 1, Ukraine reported two cases of circulating vaccine-derived poliovirus in children aged 10 months and 4 years in Zakarpatskaya oblast. Because of the low coverage with the polio vaccine in Ukraine, the risk of transmission was high. After a delay that was criticised by WHO, in October, Ukraine began a response to the outbreak and, as of Nov 7, more than 1 million of more than 2 million children younger than 6 years old have been given the first dose of the polio vaccine. On Sept 25, WHO announced that Nigeria was not endemic for wild poliovirus type 1; the country has not reported any cases since July 24, 2014. Only Afghanistan and Pakistan remain endemic for polio.

Farhat Yaqub