The greatest new challenge to recent progress in global control of TB has been the continuing emergence of multi-drug resistant (MDR) and extensively drug resistant (XDR) strains of TB. Such strains can be particularly lethal in individuals with advanced HIV disease. MDR and XDR strains are increasingly prevalent in many regions of the world, though they still remain relatively rare in the United States. Treatment of drug resistant TB involves use of more prolonged, more toxic and less effective therapies and significantly increases the cost of TB care. The emergence of drug-resistant TB has spurred development and deployment of new, rapid tools for simultaneous identification of both TB disease and drug resistance, and has also sparked the development of new drugs for treatment of MDR strains.

**TB and TB-HIV co-infection: Where are we now?**

The global incidence of TB, as well as TB-associated mortality, has continued to decline every year since 2006. In 2011, the last year for which there is complete reporting data from the World Health Organization (WHO), there were an estimated 8.7 million new cases of TB and 1.4 million TB-related deaths, an ongoing decrease from prior years (see Figure 1). Due to tremendous efforts by WHO and its many governmental and philanthropic partners, rates are now falling in most developing countries, including the many countries in sub-Saharan Africa that for the past 2 decades have had the highest burden of TB and HIV-TB co-infection.

Despite these successes, the global burden of TB, and of TB-HIV co-infection remains staggering. Thirteen percent of new TB cases in 2011 were in people who were co-infected with HIV; this figure is as high as 80% in the high TB/high HIV burden countries of southern Africa. One quarter of global HIV deaths are attributable to TB, and mortality rates for those with TB disease are 4-fold higher for HIV-infected than uninfected individuals. HIV infection and TB act synergistically to increase the burden of disease in co-infected populations.

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**Figure 1: Estimated absolute numbers of global TB cases and deaths (in millions) 1990–2011**

- **TB incidence**
  - All TB cases
  - HIV-positive TB cases

- **TB deaths**
  - TB deaths among HIV-negative people
  - HIV-associated TB deaths

* HIV-associated TB deaths are classified as HIV deaths according to ICD-10.