

TUBERCULOSIS PREVENTION AND CONTROL IN A GLOBAL CONTEXT

1. INTRODUCTION

Mycobacterium tuberculosis, the bacterium that causes tuberculosis (TB), infects approximately a third of the global population (Pinet, 2001; Human resources development for TB control, 2003). *M. tuberculosis* is transmitted through the air via droplets when an infectious individual talks, sings (Task Analysis, 2011), or coughs (Emerging Infectious Diseases 2013; Hirsh *et al.*, 2004). Tuberculosis infections can be classified as either:

- a. Latent (non-transmissible TB infection) or
- b. Active” (generally symptomatic, transmissible TB disease).

Those with latent TB infections are asymptomatic and non-infectious (Rothschild *et al.*, 2001; Hershkovitz, 2008) approximately five to fifteen percent of these individuals will progress to active disease over the course of their lifetimes (News-medical.net). Active TB disease most often affects the lungs (known as “Pulmonary TB”), causing a constellation of symptoms including cough, fever, night sweats, weight loss, and lethargy. Extra-pulmonary TB can also occur, and may affect a range of body systems (Prasad *et al.*, 2005).

Untreated, up to two-thirds of those with active TB disease will die (WHO, 2015). On average, infectious individuals will transmit TB to between 10-15 susceptible individuals over the course of a year (Corbett *et al.*, 2003), though evidence suggests that so-called “super-spreaders” can infect many more (Loudon and Roberts, 1968; Turner, Bothamley, 2005). Close contact with an individual suffering from untreated, pulmonary TB is the predominant risk factor for infection with *M. tuberculosis*. As many as half of the household contacts of an infectious TB case will themselves become latently infected, especially if the infectious case has smear positive TB disease (Loudon and Roberts, 1967).

Quotient of frequency of tuberculosis entry to the country population is called TB incidence rate, that the distribution map of the world countries has been displayed. The tuberculosis incidence and prevalence rate in 2012 is estimated at 122 and 109 respectively in the world population at one hundred thousand people. Simultaneous HIV infection significantly increases TB disease risk. Countries with high HIV prevalence rate, especially those in sub-Saharan Africa have witnessed a dramatic increase in the number of tuberculosis patients and a significant increase in the number of TB patients and increase two to three times the rate of incidence reported in the 90s (WHO, 2015).

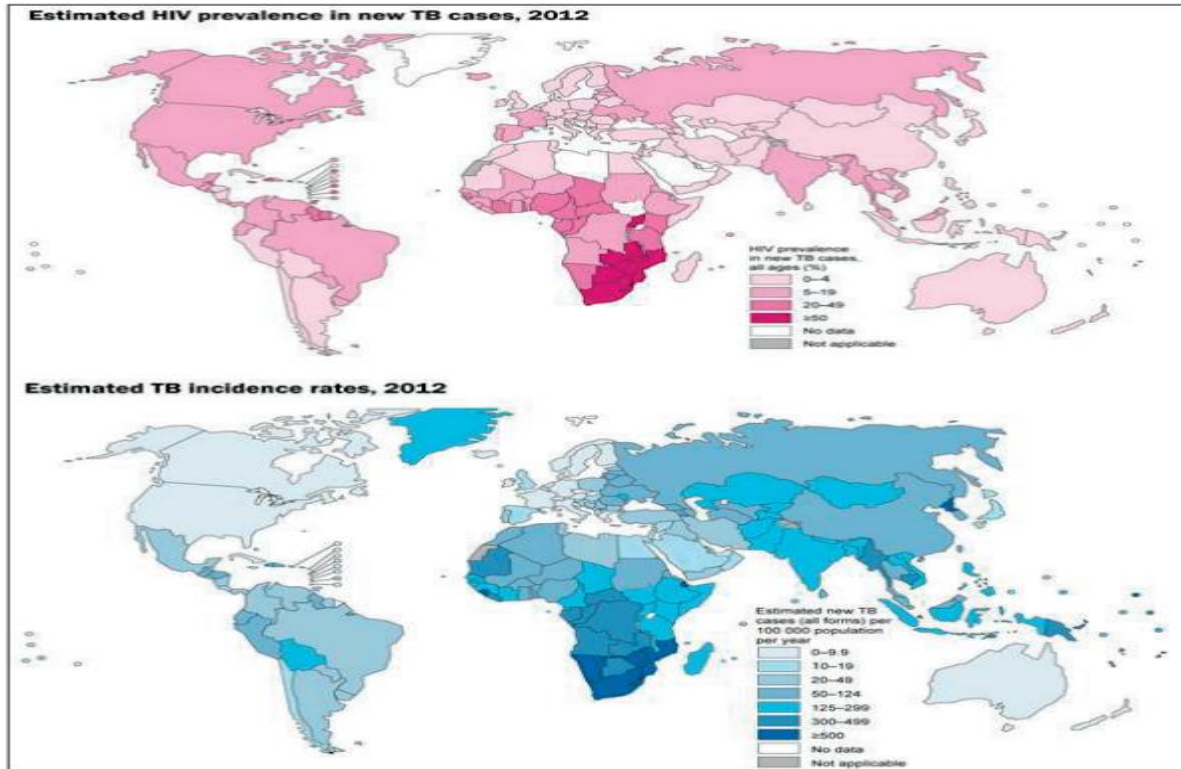


Figure 1. Estimated HIV Incidence/Prevalence in new TB cases
 Source: Fereshteh and Mahdokht, (2016)

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Amount: ₦15,000

Website: www.butyglobal.com

Email: butyglobalresearch@gmail.com

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