



How Burdensome is Tuberculosis in Regions of Ethiopia?

- Tuberculosis (TB) is the leading cause of death among infectious diseases.
- Despite numerous national and international attempts to prevent and control TB, the disease remains a major global public health concern, particularly in low- and middle-income countries.
- To devise tailored preventive and curative interventions and targets, clear evidence about the burden and trends of different types of TB and its regional distribution is needed.
- Therefore, this evidence brief aims to estimate the burden of TB among HIV-negative individuals in Ethiopia from 1990 to 2019 by sex, age group, drug resistance status, and regions using data from the Global Burden of Disease Study (GBD) 2019.

Key Finding

- Nationally, among HIV-negative individuals, 212,220 new TB cases and 29,874 deaths due to TB occurred in 2019.
- TB affected more men than women in most age groups.
- In both sexes, the majority of incident cases (93%) and deaths (69%) occurred in people under the age of 65.
- Annualized Rate of Change (ARC) in age-standardized TB incidence decreased by 2.2% from 1990 to 2015, but a 0.05% decrement was observed from 2016 to 2019.
- The ARC in age-standardized TB mortality dropped by 5.5% from 1990 to 2015, and by 4.2% from 2016 to 2019.
- The annualized rate of change in the age-standardized incidence of multidrug-resistant tuberculosis (MDR-TB) has increased by only 1.3% from 2016 to 2019, nationally, relative to the timeframe from 1990 to 2015 which increased by 12.7%.

- However, the ARC in mortality of MDR-TB declined by 3.1% from 2016-2019 which is a great improvement from its initial increase of 9.2% between 1990-2015.
- The ARC in the age-standardized incidence of extensively drug-resistant tuberculosis (XDR-TB) increased by 4.2% from 2016 to 2019, and by 22% from 1990 to 2015, ARC seen.
- The ARC in mortality from XDR-TB was 0.23%, from 2016 to 2019, which is a relatively higher rate of decrement than the rate of change observed from 1990 to 2015 which increased by 16.8%.

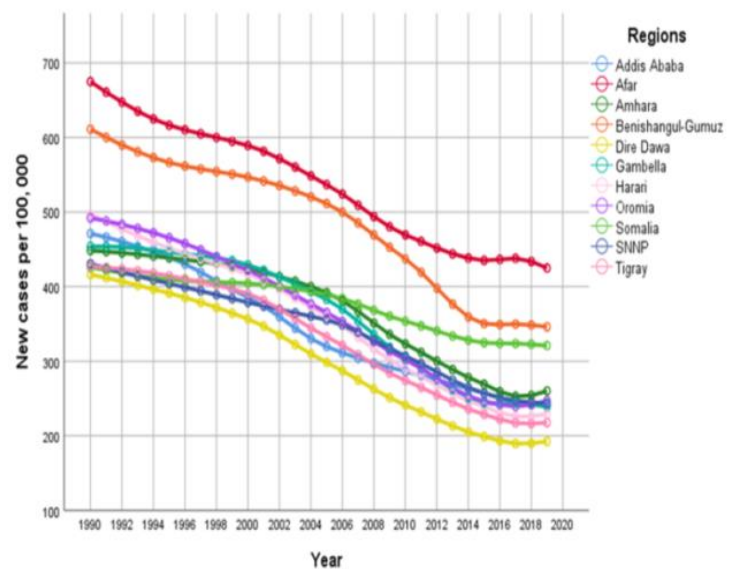


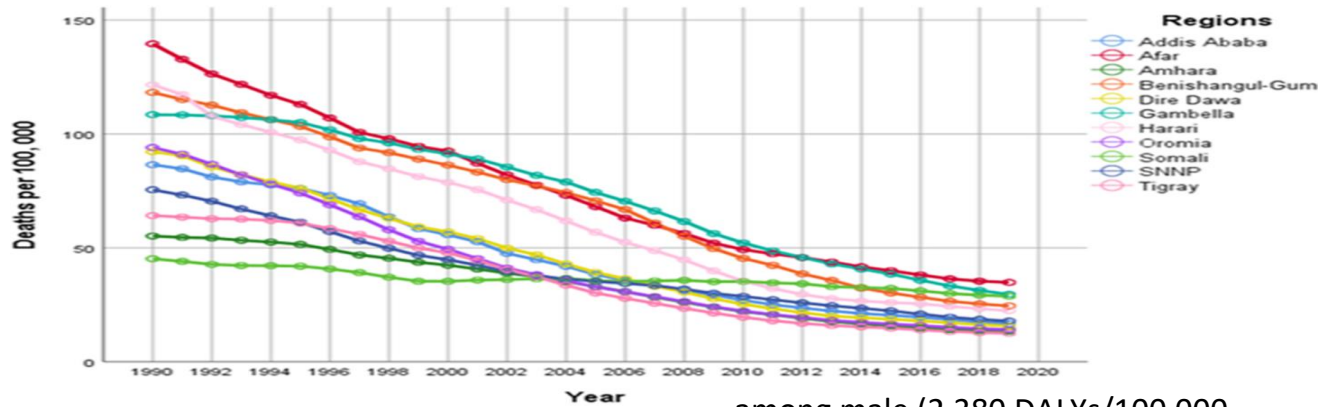
Figure 1 Age-standardized TB incidence rate

- In 2019, Dire Dawa reported the lowest age-standardized TB incidence rate of 192 per 100,000 population while Afar reported the highest 425 per 100,000 (**Figure 1**).
- All regions except Somali, Gambella, and SSNPs show a slow decline in ARC in mortality between 1990-2015.





- The ARC in age-standardised TB mortality rates has decreased at varying rates across the regions from 2016 to 2019. The highest annual decreases of 5.1% was observed in Gambella and the lowest in Somalia of 3.1% as indicated in figure below.



- In 2019, of the TB cases, 6,762 were MDR-TB and 2,052 of deaths were due to MDR-TB.
- The age-standardized incidence (per 100,000 population) of MDR-TB range from 7.4 in SNNPR to 15.9 in Afar.
- The age-standardized mortality rate (per 100,000 population) for MDR-TB was increased by 10.3 in Afar to 3.5 in Oromia in the same year.
- In 2019, XDR-TB caused an estimated 44 new cases and 28 deaths in Ethiopia.
- In 2019, Afar (had the highest age-standardized incident rate (per 100,000 population) of 0.10 and SNNPR had the lowest of 0.05.
- In the same year, the age-standardized mortality rate (per 100k people) attributed to XDR-TB varied from 0.15 in Afar to 0.05 in Oromia.
- Among the variant of TB, drug-susceptible TB was the most common, followed by MDR-TB in 2019.
- The age-standardized DALY rate due to TB has declined by 80% from 10,326 per 100,000 populations in 1990 to 1,853 per 100,000 populations in 2019.
- Similar to the death rates and incidence rate, the DALY rate was much higher for males than for females.
- In 2019, the age-standardized DALY rate

among male (2,380 DALYs/100,000 populations) was 1.8 times higher than female counterparts. (1,321 DALYs/100,000 populations).

Conclusion

- The study shows a declining trend in TB burden among HIV-negative individuals in Ethiopia from 1990 to 2019.
- This improvement could be attributed to the significant progress that occurred in TB prevention and control, with resources and decentralized primary health care actions.
- Despite this progress, this study suggests that additional efforts are still needed to ensure that Ethiopia is not left behind in the current global move to end TB disease.
- The findings reinforce the importance of strengthening TB control strategies in Ethiopia through integrated and multisectoral actions that enable access to prevention, early diagnosis, and timely treatment, with emphasis on high-risk groups and populations most vulnerable to the disease in the country.
- Targeted interventions are needed to engage more men in TB care with social protections while underscoring the importance of early diagnosis.

Acknowledgment

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