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In reply

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We agree with the excellent summary provided by Reves and Benjamin of the important, but insufficient, progress toward tuberculosis (TB) elimination (<1 case per million population) in the United States over the past two decades. Furthermore, we concur with the need to advance the argument in favor of additional investments required to eliminate TB by providing an estimate of future expected benefits.

While we did not model future projected savings in our report,[1] we have undertaken relatively simple retrospective modeling to estimate the reduction in TB cases and societal benefits had TB elimination been achieved in 1995 and sustained through 2014. From this we estimate that during 1995–2014 from 430 397 to 604 494 TB cases would have been averted (Figure 1), at estimated benefits of US $19.9 billion to $27.7 billion, including the value of deaths prevented and the costs to treat drug-resistant TB disease (Figure 2). Projected cases averted and cost savings for two decades into the future would also be anticipated to be substantial, although somewhat less, because even with a flat case rate the projected case counts for the next two decades would be less than those that actually occurred between 1995 and 2014.

To assist in the direction of US TB elimination efforts, a newly formed consortium funded by the US Centers for Disease Control and Prevention (The NCHHSTP Epidemiologic and Economic Modeling Agreement) is designing more detailed and robust models. This consortium includes collaborators from the Johns Hopkins University with Emory University, the Harvard University, and the University of California at San Francisco. These investigators' models will calibrate to historical TB data and estimate future TB incidence and costs according to changes in various programmatic efforts to achieve TB elimination.

The results of this effort are expected to inform and identify activities that could be prioritized and targeted to achieve TB elimination in the shortest period of time and using the least amount of resources. Such ongoing modeling results should be published within the next 2 years, if not sooner. Moreover, global collaborations are also taking place to implement clinical trials and data analyses to identify optimized regimens for the treatment of persons with drug-resistant disease and latent tuberculous infection caused by drug-resistant strains. These efforts have become indispensable to address the increasing global burden, challenge, and cost of drug-resistant TB—as well as its prevention.

References

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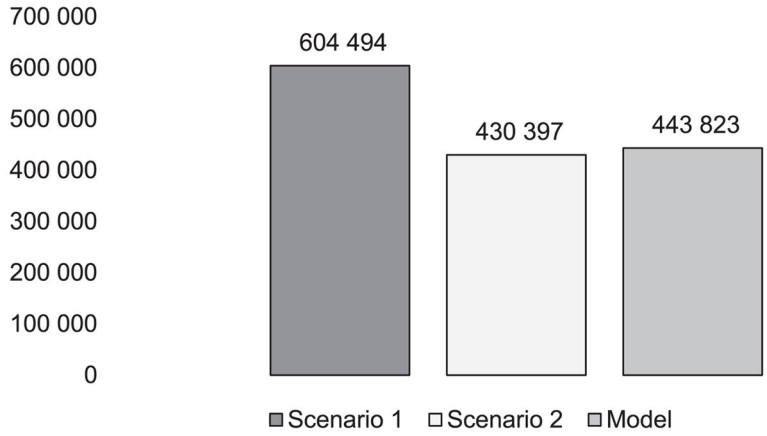

Figure 1.

TB cases averted in the United States, 1995–2014, if elimination (<1 case per million population) achieved and sustained 1995–2014, by scenarios and model.[1]

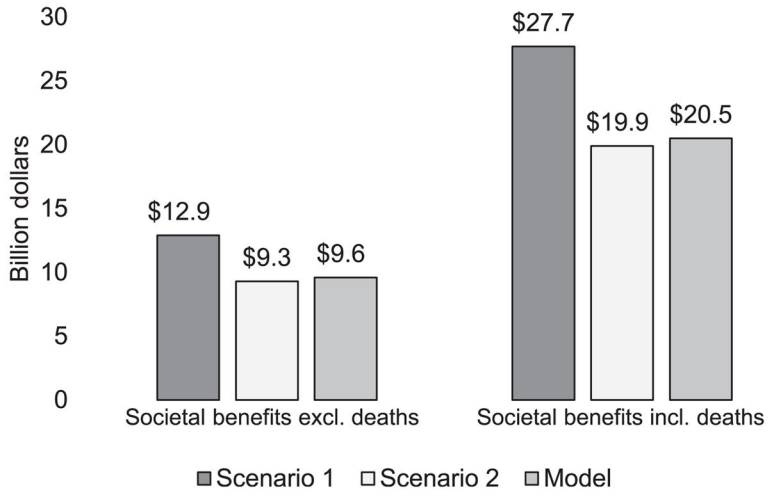

Figure 2.

TB costs averted in the United States, 1995–2014, if elimination (<1 case per million population) achieved and sustained 1995–2014, by scenarios and model.[1]