



# Economic evaluation of Quantiferon TB for the detection of Micobacterium Tuberculosis infection: an analysis for the Italian health system

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## PURPOSE

To estimate the economic impact due to the use of Quantiferon (IGRA) as a screening for healthcare care workers (HCW), compared with the standard of care for the diagnosis of tuberculosis infection (TBI), a budget impact analysis (BIA) from the perspective of the Italian National Health Service (INHS) was developed.

## METHODS

- A budget impact analysis was conducted with Microsoft Excel® to compare the Mantoux test (TST) followed by IGRA if the first was positive for all HCW, vs IGRA alone, according to the sensitivity and specificity of tests.
- Both scenarios considered the following costs: tests, health visit, treatment of latent tuberculosis infection and active tuberculosis.

## RESULTS

- The BIA conducted highlight the economic advantage obtainable thanks to IGRA strategy, given the large number of patients and the consequent impact on the health care system.
- The use of IGRA alone leads to savings for NHS of 2 € per patient, for a total of 2,250,364 €, considering 1,404,037 healthcare workers in Italy; the difference in the costs of the tests is largely absorbed by the advantage that can be obtained from the use of IGRA.
- The analysis underlines, in addition to the economic advantage, the clinical and organizational advantages of IGRA for healthcare services in identifying (and treating) a greater number of infected persons, detecting a higher number of HCW with TBI resulting in a lower risk of developing active tuberculosis.
- The results were validated by the sensitivity analysis.

Figure 1. Study design



Figure 2. Sensitivity analysis results

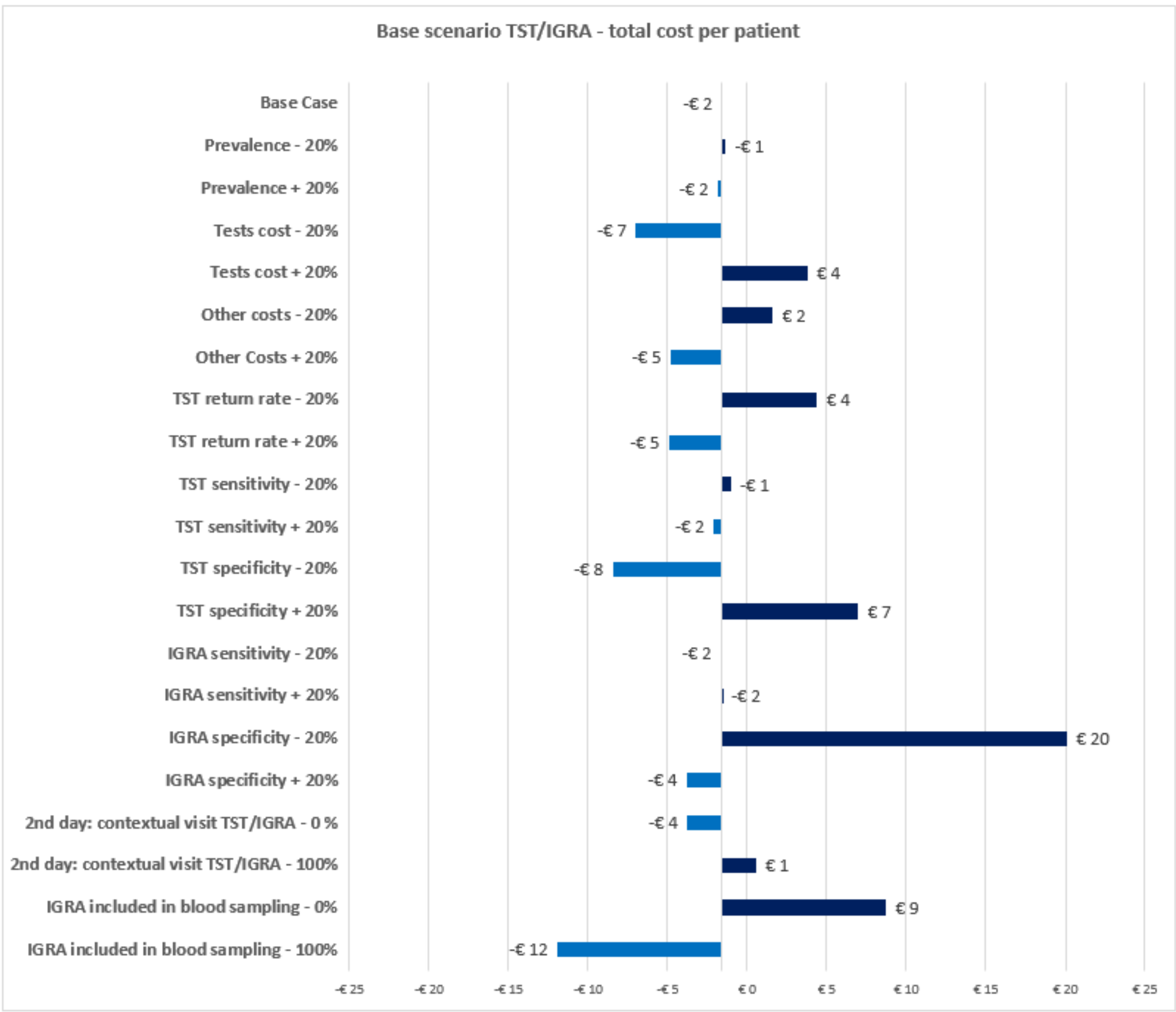


Table 1. Efficacy input of the pharmacoeconomic model

Input	%
TST return rate	90 %
TST sensitivity	85 %
TST specificity	80 %
IGRA sensitivity	95 %
IGRA specificity	98 %
Start of treatment	80 %
Development of adverse events	1,5 %
LTBI cured	65 %
Post-exposure TB	3 %

Table 2. Budget Impact Analysis Results

	TST/IGRA	IGRA	Delta	TST/IGRA (€)	IGRA (€)	Delta (€)
Visits	2.814.567	702.019	-2.112.548	58.148.968 €	14.503.702 €	-43.645.266 €
Test	1.697.832	1.404.037	-293.795	14.099.690 €	51.949.369 €	37.849.679 €
Latent TB	42.580	34.634	-7.946	0 €	0 €	0 €
Post-exposure TB	1.092	888	-204	9.588.159 €	7.798.885 €	-1.789.274 €
Adverse events	681	1.139	458	22.798 €	38.134 €	15.336 €
Treatments	44.657	74.695	30.038	7.907.884 €	13.227.047 €	5.319.163 €
TOTAL cost				89.767.500 €	87.517.136 €	-2.250.364 €
TOTAL cost per patient				64 €	62 €	-2 €

## SUMMARY – CONCLUSIONS

The analysis carried out showed how the use of IGRA as a diagnostic strategy for surveillance of TBI in HCW, could have a saving impact on the optimization of resource consumption for the INHS, representing an effective and safe diagnostic option. Moreover, it should be noted that the price of the test, being subject to tender dynamics, will tend to decrease in perspective, increasing the savings highlighted above.

## DECLARATION OF INTEREST

Diasorin provided funding for this study.

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## REFERENCES

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