

# Analysis of costs of transrectal prostate biopsy.

Fandella A.

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Divisione urologica, Casa di Cura Giovanni XXIII Monastier (Treviso) - Italy.  
afandella@alice.it

## Abstract

### INTRODUCTION:

Literature reports mortality and morbidity data from prostatic carcinoma which permit a better use of some routine diagnostic tools such as transrectal ultrasound-guided biopsy. The aim of this work is to quantify the overall cost of transrectal ultrasound biopsy of the prostate (TRUSB) and to assess the economic impact of current procedures for diagnosing prostatic carcinoma.

### MATERIALS AND METHODS:

The total cost of TRUSB was calculated with reference to 247 procedures performed in 2008. The following cost factors were evaluated: personnel, materials, maintenance/depreciation of the equipment, energy consumption, and hospital overheads. A literature review was also carried out to check if our extrapolated costs corresponded to those of other authors worldwide, and to consider them in the wider framework of the economic effectiveness of strategies for early diagnosis of cancer of the prostate.

### RESULTS:

The overall cost of TRUSB (8 samples) was EUR 249,000, obtained by adding together the costs of: personnel (EUR 160,000); materials (EUR 59,000); equipment maintenance and depreciation (EUR 12,400); energy consumption (EUR 0,1); hospital overheads (EUR 17,500). With extended or saturation biopsies the cost increases for the more time needed by pathologists and can be calculated as EUR 300,000. The literature review points out TRUSB as an invasive tool for diagnosing prostatic carcinoma, clinically and economically controversial. Post-mortem data report the presence of cancer cells in the prostate of 50% of 70-year-old men, while extrapolations calculate a morbidity rate from prostatic carcinoma in 9.5% of 50-year-old men. It is therefore obvious that randomized prostatic biopsies, methods apart, have a good probability of being positive. This probability varies with the patient's age, the level of prostate specific antigen (PSA), the density of PSA/cm<sup>3</sup> of prostate volume (PSAD), and the detection by digital exploration and/or positive transrectal ultrasound. CONCLUSIONS. Despite the severe application of all these criteria and the critical assessment of the patient's general conditions, TRUSB is indicated for 16% of the male population over 50 years of age, with obvious economic consequences. Quite recently the clinical utility of assays of PSA derivatives (such as Pro-2PSA) has gained more and more importance. The Pro-2PSA seems to reduce the use of TRUSB.