

## Patients' Out-Of-Pocket Expenses-Effectiveness Analysis of Presurgical Tele dermatology

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**Abstract :** Background: The aim of this study is to undertake, from a patient perspective, an economic analysis of presurgical tele dermatology, comparing it with a conventional referral system. Store-and-forward tele dermatology allows surgical planning, saving both time and number of visits involving travel, thereby reducing patients' out-of-pocket expenses, i.e., costs that patients incur when traveling to and from health providers for treatment, visits' fees, and the opportunity cost of time spent in visits. Method: Patients' out-of-pocket expenses-effectiveness of presurgical tele dermatology were analyzed in the setting of a public hospital during two years. The mean delay in surgery was used to measure effectiveness. The tele dermatology network covering the area served by the Hospital Garcia da Horta (HGO), Portugal, linked the primary care centers of 24 health districts with the hospital's dermatology department. The patients' opportunity cost of visits, travel costs, and visits' fee of each presurgical modality (tele dermatology and conventional referral), the cost ratio between the most and least expensive alternative, and the incremental cost-effectiveness ratio were calculated from initial primary care visit until surgical intervention. Two groups of patients: those with squamous cell carcinoma and those with basal cell carcinoma were distinguished in order to compare the effectiveness according to the dermatoses. Results: From a patient perspective, the conventional system was 2.15 times more expensive than presurgical tele dermatology. Tele dermatology had an incremental out-of-pocket expenses-effectiveness ratio of €1.22 per patient and per day of delay avoided. This saving was greater in patients with squamous cell carcinoma than in patients with basal cell carcinoma. Conclusion: From a patient economic perspective, tele dermatology used for presurgical planning and preparation is the dominant strategy in terms of out-of-pocket expenses-effectiveness than the conventional referral system, especially for patients with severe dermatoses.

**Keywords :** economic analysis, out-of-pocket expenses, opportunity cost, tele dermatology, waiting time

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