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**Abstract**

# Accuracy of Store-and-Forward Teledermatology for the Diagnosis of Skin Cancer: The Nouvelle-Aquitaine Experience

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**Abstract**

**Background:** In Nouvelle-Aquitaine (a French region with a population of almost 6 million), the density of dermatologists is less than 3.8/100,000 inhabitants. This lack of dermatological care is delaying diagnosis and management, especially for skin cancer. The SmartDerm Project is a store-and-forward (SAF) teledermatology platform for primary care in Nouvelle-Aquitaine providing dermatological counselling to general practitioners (GPs).

**Objective:** The main objective was to determine the concordance between the diagnosis of skin cancer made by dermatologists and the pathologists' diagnosis.

**Methods:** GPs in 3 pilot departments of Nouvelle-Aquitaine (Lot-Et-Garonne, Deux-Sèvres, Creuse) sent their dermatology requests using their smartphone, via an app called PAACO/Globule; dermatologists at the University Hospital of Bordeaux answered within 48-72 hours. Consecutive cases of skin cancer suspected by the referent dermatologists during the intervention were included, if the result of biopsy interpreted by a certified pathologist was available at the time of the study.

**Results:** Among the 1727 requests, 163 (9%) concerned a possible diagnosis of skin cancer and were eligible. For 61 cases, the histopathological findings were not available. Eventually, 93 patients with a total of 102 skin lesions were included. Median age was 75 years (range 26-97 years), with 53% women. The skin lesions had progressed for 8 months on average (range 0.5-36 months). The median response time was 1 day (range 0-61 days); 65 days (range 1-667 days) elapsed on average between the SAF opinion and the histological sample. Histopathology diagnosed 83 malignant lesions (57 basal cell carcinomas, 69%; 18 squamous cell carcinomas, 22%; 6 melanomas, 7%; 1 cutaneous lymphoma, 1%; 1 secondary location of a primary cancer, 1%), 1 precancerous lesion, and 18 benign lesions. The concordance between the opinion of the referent dermatologist and the final pathological finding was 83% for nonmelanocytic lesions and 67% for melanocytic lesions.

**Conclusions:** This study showed the reliability of SAF teledermatology in the diagnosis of skin cancer, comparable to literature data in the absence of dermatoscopy. The median delay of about two months between request and histology was an improvement compared to the delay of usual appointments in the intervention area. The lack of data for 61 patients showed that SAF telemedicine requires better coordination and follow-up, especially for the management of skin cancer. With this reservation in mind, teledermatology offers an alternative answer for the triage of patients with skin cancer residing in areas with low medical density.

**Conflicts of Interest:** None declared.

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**KEYWORDS**

store-and-forward; teledermatology; telemedicine; skin cancer

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