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Evolution and challenges of store-and-forward teledermatology for skin diseases of elderly in long-term care facilities: results of a five-year analysis

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4 of elderly in long-term care facilities: results of a five-year analysis

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53 Store-and-forward teledermatology (TD)

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62 By 2030, 20% of the population will be > 65 years¹, with an eventual increase in admissions to
63 long-term care facilities(LTCF).In parallel, the incidence of skin conditions is rising, with >27
64 million visits to dermatologists and >5 million new skin cancers each year, mostly in older
65 adults.¹While store-and-forward teledermatology(SFTD) helps overcome travel burden among
66 elderly, it is important for geriatricians to avoid overexploiting its usage and recognize its
67 limitations. The purpose of our study was to assess SFTD usage by LTCF geriatricians over a 5-
68 year period.

69 We prospectively collected all SFTD requests(clinical images with medical information on
70 ORTIF platform®)sent by LTCF geriatricians to our university hospital TD program since its
71 implementation in January 2016 until December 2020. We collected:patients' demographic
72 characteristics, urgency of the case according to requesters, qualitative rating of supplied
73 information from 1 to 4, suspected diagnosis, management plan, median time to complete final
74 response, and number of no-shows to scheduled procedures.Results are presented in Table 1. In
75 total, 27/115(23%) of scheduled patients for biopsies/excisions failed to show up.

76 Satisfaction with SFTD on one hand, and shortage of dermatologists on another hand, explain the
77 increased requests over years. In 2020, COVID-19 caused a decrease in requests number and an
78 increase in time for response completion. During the pandemic, LTCF physicians seemed more
79 concerned about COVID-19 than other health issues.² Unexpectedly, even though access to
80 teledermatology expertise was possible, studies show decrease in SFTD requests from LTCF for
81 dermatological reasons other than COVID-19 cutaneous signs.² An increase in infections in 2018
82 was due to an outbreak of scabies. The proportion of urgent cases didn't increase over time,
83 showing no unnecessary use of SFTD by geriatricians. In SFTD, quality of supplied information

84 depends on the type of dermatosis and the category of patients.³ For example, SFTD requests for
85 lower limb infections frequently have low quality of information that limit STFD usage in these
86 cases.³ In contrast, teledermatologists highly rated the quality of supplied information by
87 geriatricians. In fact, skin cancer is the commonest cause of LTCF requests by SFTD, and it is
88 the perfect model for a spot-diagnosis in teledermatology.³ Geriatricians are also well-exposed to
89 skin diseases compared to other physicians, as the prevalence of skin conditions is high among
90 elderly.⁵ This optimizes outcomes of SFTD since less exchanges are needed to supply patient
91 information. As a quarter of patients didn't need a follow-up with a dermatologist, unnecessary
92 travel for patients in LTCF was limited³. However, around a quarter of patients for whom a
93 biopsy or excision was scheduled did not show up. Unexpectedly, the proportion did not
94 decrease over the years. This issue needs to be addressed because it creates a limitation for SFTD
95 use in elderly. Many studies have focused on the accuracy of SFTD in making skin diagnoses in
96 elderly. But, the impact of integrating an innovation in a conventional process should not only
97 evaluate the diagnosis outcome compared to standard care, but also key performance indicators,
98 such as time, cost and resources.⁴ In fact, SFTD is supposed to be time-saving and cost-effective,
99 but no-shows waste system performance. While several studies have demonstrated a sustained
100 decrease in no-show rates after implementation of teledermatology,^{6,7} this does not seem to be
101 the case for SFTD used in elderly.

102 In conclusion, adopting SFTD in the practice of LTCF is an effective tool⁸⁻¹⁰ to meet skin needs
103 of elderly. SFTD was able to avoid unnecessary travels, with a fast time response. It also
104 provided direct treatments to patients who don't require follow-ups and referred those who need
105 further assessment or interventions to a specialized department. Nevertheless, it is essential to
106 conduct future studies to investigate the causes of no-shows post-SFTD in this population. This

107 would help us design a specific geriatric pathway that ensures access to care, while mitigating
108 no-shows that result in wasting of considerable time, manpower, and resources.

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