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Journal Pre-proof

Use of a hybrid teledermatology model in an Australian tertiary hospital in the COVID-19 pandemic

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Title:

Use of a hybrid teledermatology model in an Australian tertiary hospital in the COVID-19 pandemic

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1 The COVID-19 pandemic has led to the adoption of teledermatology by health services

2 across the world. There is increasing support for the utility of teledermatology in the

3 outpatient setting, however the role in the inpatient and emergency setting is less

4 established. We report on the use of teledermatology in the inpatient and emergency

5 setting at St George Hospital Dermatology Department, a tertiary centre in Sydney,

- 6 Australia.
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8 Inpatient and emergency consultations are conducted in our institution by one of two staff 9 Dermatologists per day and one hospital-based Dermatology resident. A hybrid model of 10 inpatient teledermatology consults was established prior to the COVID-19 pandemic. All 11 referrals were seen face-to-face by the Dermatology resident to ensure a relevant history, 12 and high-quality clinical and dermatoscopic photographs were taken. Referrals would then 13 be summarised and sent to the on-call dermatologist who provided an impression and plan 14 for the resident to enact. For severe or life-threatening cases, the on-call dermatologist 15 would also attend for a face-to-face consultation. This system involved both synchronous and asynchronous models depending on the triaging of consults performed by the 16 17 Dermatology resident. To avoid COVID-19 exposure of the on-call Dermatologists, which 18 would subsequently shut down provision of dermatology services to both the outpatient 19 and the inpatient/emergency service, this hybrid-model of inpatient teledermatology was 20 maintained during the pandemic and outpatient clinics were converted to teledermatology 21 for large proportions of 2020 and 2021.

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Using this hybrid approach, our dermatology service avoided any shut down periods from 23 24 COVID-19 exposures to the two on-call dermatologists. The main exposure site for COVID-19 25 was in the emergency department and this was the main source of inpatient referrals 26 (Figure 1). There was no statistically significant difference (p > 0.05, Student *T*-Test) in the 27 number of inpatient consults seen between pre-COVID-19 2019 (n=295, mean 27 consults 28 per month(CPM), standard deviation (SD) 10.9), 2020 (n=305, mean 25 CPM, SD 6.3) or 2021 29 (n=323, mean 27 CPM, SD 8.1)¹. This may be due to the establishment of a hybrid model of 30 inpatient teledermatology. In 2021, 70% of inpatient consults had a treatment plan 31 provided to the referring team within the same day of referral.

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The role of teledermatology to increase efficiency of inpatient consults has been described prior to the COVID-19 pandemic with a reduction in the time taken for inpatient medical teams to receive advice from Dermatology consults². Concordance in investigations and treatment plans between tele-consults and face-to-face consults has also been described^{3,4}. The COVID-19 pandemic has seen the wider adoption of teledermatology services⁵. The experience of our department supports the use of teledermatology for efficient delivery of care that has been stable throughout the COVID-19 pandemic. Our experience supports use of a hybrid model of teledermatology rather than a virtual model and could be applied in other parts of the world.

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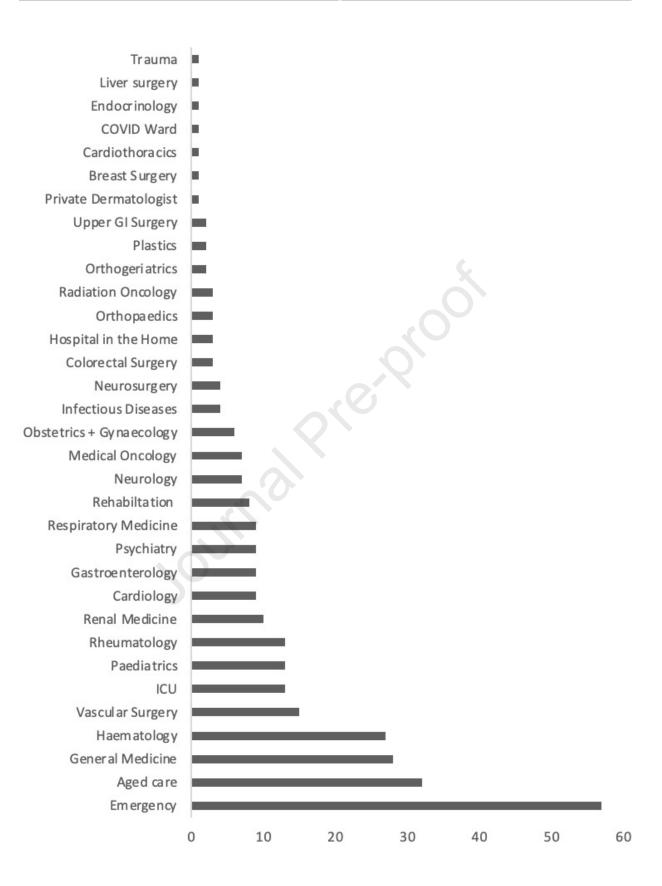


Figure 1. Spread of referring specialties to Dermatology in 2021

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