

RESEARCH LETTER

Retrospective analysis of management concordance between primary care providers and teledermatologists after electronic consultation

To the Editor: Management concordance after electronic consultation between primary care providers (PCPs) and dermatologists has been studied, but there is a large degree of variation in findings.^{1,2} While other studies have examined management concordance in the inpatient setting,^{3,4} our study addresses concordance across the spectrum from outpatient PCP to teledermatologist to face-to-face (FTF) dermatologist.

We performed a retrospective chart review of 785 e-consults from PCPs at Michigan Medicine between October 2020 and June 2021. Diagnoses and provisional management plans from the PCP, teledermatologist, and FTF dermatologist were recorded. Included were 360 e-consults that contained questions about management only or diagnosis and management. Descriptive statistics were performed to determine percent concordance, partial concordance, or discordance. To stratify results by diagnostic category (Table 1), the first diagnosis listed was assumed to be the primary diagnosis, and the e-consults with complete discordance were then characterized by reasons for management discordance.

Our analysis showed that most e-consult diagnoses were inflammatory (64%) (Table 1). The PCP and teledermatologist completely agreed on management plans 21% of the time (Fig 1), and concordance between teledermatologist and FTF dermatologist was 55% (Fig 1). Infectious diagnoses were most discordant (14/33, 42%), while neoplastic/premalignant diagnoses were most concordant (4/7, 57%) (Table 1). Discordance occurred most often because PCPs recommended a different medication choice (43%, 39/90) (Table 1). Of the 94 FTF visits, 38% (36/94) occurred because follow-up was part of the teledermatologist's plan. In the remaining 62% (58/94), the patients self-selected to follow up. Inflammatory diagnoses were seen in 51% of the FTF visits. Complete management discordance only occurred in 15 of these visits.

Our results demonstrate low management concordance between PCPs and teledermatologists. Concordance was also fairly low (55%) between teledermatologists and FTF dermatologists, which may be impacted by different dermatologists performing the e-consult versus the FTF visit.

Additionally, concordance rates are higher in studies that evaluated a narrower range of conditions or a single management decision, such as "biopsy or no biopsy."⁵ Many patients did not require FTF visits, further demonstrating the access to care that e-consults provide.²⁻⁴ However, our findings suggest that inflammatory conditions may benefit from FTF visits. Future research is needed to outline the most useful scenarios for outpatient dermatology e-consults. Discrepancy about medication choice was most common among the discordances, aligning with prior studies.³ We also found that teledermatologists erred on the side of conservative management more often than PCPs.² Partial concordance between PCPs and teledermatologists suggests that PCPs recommend some but not all elements of optimal care.

The limitations include small sample sizes and the lack of generalizability given a single institution data set. We assumed that a teledermatologist's first differential diagnosis was the top diagnosis, a common medical practice, but there may be variability in how recommendations are structured. Provisional management plans by the initial provider may bias recommendations by subsequent providers, and FTF providers may adjust plans after e-consult recommendations have been in place. Use of e-consults will likely continue to grow, especially with increased telemedicine, and our study demonstrates their value in fine-tuning management plans.

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Table I. Descriptive statistics of management concordance between primary care providers and teledermatologists and their reasons for discordance by diagnostic category

Diagnostic category	Management concordance				Reasons for discordance					
	Concordance	Discordance	Partial concordance	No. e-consults (%)	Inappropriate medication choice for diagnosis	Supportive care/ observation vs medication/procedure	Patient required further workup	Procedure vs medication treatment	Other	No. e-consults (%)
Inflammatory	41 (18)	46 (20)	142 (62)	229 (64)	30 (65)	7 (15)	0 (0)	5 (11)	4 (9)	46 (51)
Benign Tumor/ growth/proliferation	17 (47)	10 (28)	9 (25)	36 (10)	1 (10)	4 (40)	3 (30)	2 (20)	0 (0)	10 (11)
Infectious	5 (15)	14 (42)	14 (42)	33 (9)	7 (50)	3 (21)	3 (21)	0 (0)	1 (7)	14 (16)
Other	1 (4)	9 (32)	18 (64)	28 (8)	1 (11)	2 (22)	1 (11)	1 (11)	4 (44)	9 (10)
No diagnosis provided	3 (21)	9 (64)	2 (14)	14 (4)	0 (0)	0 (0)	4 (44)	4 (44)	1 (11)	9 (10)
Nail	4 (50)	0 (0)	4 (50)	8 (2)	-	-	-	-	-	-
Neoplastic/ pre-malignant	4 (57)	1 (14)	2 (29)	7 (2)	0 (0)	0 (0)	0 (0)	0 (0)	1 (100)	1 (1)
Hair	2 (40)	1 (20)	2 (40)	5 (1)	0 (0)	0 (0)	1 (100)	0 (0)	0 (0)	1 (1)
No. e-consults (%)	77 (21)	90 (25)	193 (54)	360 (100)	39 (43)	16 (18)	12 (13)	12 (13)	11 (12)	90 (100)

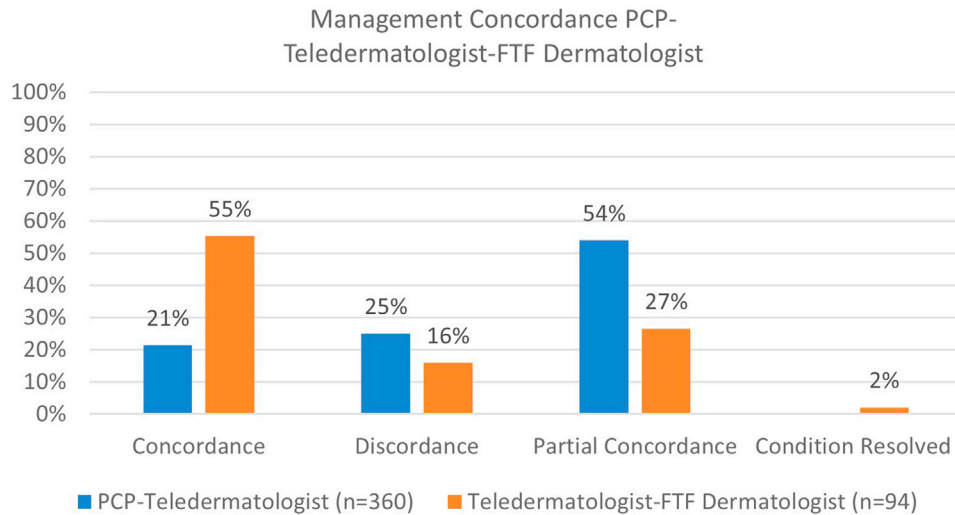


Fig 1. Management concordance between primary care provider, teledermatologist, and face-to-face dermatologist. The *blue bars* represent the percent management concordance between the primary care provider and the teledermatologist for 360 e-consults. The *orange bars* represent the percent management concordance between the teledermatologist and the face-to-face dermatologist for 94 in-office visits. *FTF*, Face-to-face; *PCP*, primary care provider.

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Conflicts of interest

None disclosed.

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