

UC Davis

Dermatology Online Journal

Title

Document by example: resident perception of SmartPhrases for inpatient dermatology consultations

Permalink

<https://escholarship.org/uc/item/26d180dw>

Journal

Dermatology Online Journal, 29(4)

Authors

Gold, Sarah
Mustin, Danielle E
Cheeley, Justin T

Publication Date

2023

DOI

10.5070/D329461914

Copyright Information

Copyright 2023 by the author(s). This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

Peer reviewed

Document by example: resident perception of SmartPhrases for inpatient dermatology consultations

Sarah Gold^{1*} BA, Danielle E Mustin^{1*} MEng, Justin T Cheeley^{1,2} MD

*Authors contributed equally

Affiliations: ¹Department of Dermatology, Emory University School of Medicine, Atlanta, Georgia, USA, ²Department of General Internal Medicine, Emory University School of Medicine, Atlanta, Georgia, USA

Corresponding Author: Justin T Cheeley MD, Department of Dermatology, Emory University School of Medicine, 1525 Clifton Road, Suite 100, Atlanta, GA 30322, Tel: 404-727-5106, Email: justin.cheeley@emory.edu

Keywords: dermatology, education, electronic, inpatient, residency, technology

To the Editor:

With the broad deployment of electronic health records (EHR), documentation is more standardized but creates administrative strain [1, 2]. The burden of documentation limits consulting physicians' time for patient and referring provider contact and education, contributing to burnout [3]. There exists relatively little published literature regarding the instruction of medical trainees in appropriate EHR communication, particularly for consult notes which serve as valuable communication and instruction to the primary provider [4].

At an academic inpatient consultative dermatology practice, a shared, cloud-based compendium of "SmartPhrases" or "auto-text" was created for use by dermatology residents. SmartPhrases include a concise explanation of encountered dermatologic conditions and enumerate the differential diagnosis, standard work-up, and treatment regimen with literature citation ([Appendix 1](#)). The residents create these auto-text with attending oversight and update the SmartPhrases according to newly encountered diagnoses and practice-changing research. SmartPhrases may be incorporated, partially or entirely, into the dermatology consult notes, serving as an example of evidence-based care and increasing efficiency and quality of written communication. We aimed to understand how dermatology residents viewed the utility and educational value of SmartPhrases.

Electronic surveys were administered over three weeks to current and former dermatology residents who were in residency while the SmartPhrases curriculum was employed. Responses were anonymous. Thirty-three providers completed the survey (73% response rate), including 19 (of 25) former and 14 (of 20) current residents. Most respondents were female (70%) and 79% were younger than 35.

All participants agreed that shared SmartPhrases were educational and improved efficiency of documentation ([Table 1](#)). All current residents agreed that SmartPhrases helped to recall information and enhanced the educational value of their consult notes. Only 15% of residents perceived SmartPhrases contributed to "note bloat" and 12% believed that SmartPhrases limited their own independent research of conditions. More former residents agreed that SmartPhrases taught them how to write better notes (84% versus 29% of current). Eighty-nine percent of former and 64% of current residents believed that SmartPhrases should be incorporated into all dermatology residency curricula.

These results suggest that shared SmartPhrases in inpatient consultative dermatology is appreciated by former and current residents as an educational tool and a means to increase note efficiency. Former residents, further into their practice, viewed the

Table 2. Potential advantages and disadvantages of shared smartphrases for dermatology resident notes.

Advantages	Disadvantages
Efficiency of consult note composition	Contributes to note length
Educational for the author, user, and referring provider	Learner may incorporate superfluous information not relevant to the patient
Serves as quality control for dermatology consult notes	Requires users to update the compendium with new literature
Recall information one may otherwise forget, especially complex work-up algorithms	May impair self-directed reading
Serves as an example of and sets expectations for dermatology consult notes	May be perceived by referring providers as derivative
Opportunity to incorporate literature into a practical use case	May engender resident feelings of obligation to use SmartPhrases and reduce personal creativity and style
Learner may contribute to the education and efficiency of peers who use the SmartPhrase(s) in the future	May reduce medical practice to algorithm

compendium as especially valuable for personal scholarship and medical communication. Former residents may also have contributed more to the SmartPhrases document because it was newer and abridged. A SmartPhrase curriculum such as ours requires frequent review of new literature, encouraging current evidence-based medical practice. Summarization of novel, practice-changing medical literature in a SmartPhrase may also enhance author understanding, while immortalizing the content for other users. See **Table 2** for

advantages and disadvantages of a SmartPhrase compendium generated by the authors. Dermatology programs should consider incorporating shared SmartPhrases to “document by example” for residents, while leveraging efficiencies of the EHR.

Potential conflicts of interest

The authors declare no conflicts of interest.

References

- Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clin Proc.* 2015;90:1600-13.[PMID: 26653297].
- Sinsky C, Colligan L, Li L, et al. Allocation of Physician Time in Ambulatory Practice: A Time and Motion Study in four Specialties. *Ann Intern Med.* 2016;165:753-60.[PMID: 27595430].
- Boulware DR, Dekarske AS, Filice GA. Physician preferences for elements of effective consultations. *J Gen Intern Med.* 2010;25:25-30. [PMID: 19898909].
- Kahn D, Stewart E, Duncan M, et al. A Prescription for Note Bloat: An Effective Progress Note Template. *J Hosp Med.* 2018;13:378-82.[PMID: 29350222].
- Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in Burnout and Satisfaction With Work-Life Balance in Physicians and the General US Working Population Between 2011 and 2014. *Mayo Clin Proc.* 2015;90:1600-13.[PMID: 26653297].
- Sinsky C, Colligan L, Li L, et al. Allocation of Physician Time in Ambulatory Practice: A Time and Motion Study in four Specialties. *Ann Intern Med.* 2016;165:753-60.[PMID: 27595430].
- Boulware DR, Dekarske AS, Filice GA. Physician preferences for elements of effective consultations. *J Gen Intern Med.* 2010;25:25-30. [PMID: 19898909].
- Kahn D, Stewart E, Duncan M, et al. A Prescription for Note Bloat: An Effective Progress Note Template. *J Hosp Med.* 2018;13:378-82.[PMID: 29350222].
- Cohen JS. Erythromelalgia: new theories and new therapies. *J Am Acad Dermatol.* 2000;43:841-7. [PMID: 11050591]
- Pagani-Estévez GL, Sandroni P, Davis MD, Watson JC. Erythromelalgia: Identification of a corticosteroid-responsive subset. *J Am Acad Dermatol.* 2017;76:506-511.e1. [PMID: 28413058]
- Ahronowitz I, Harp J, Shinkai K. Etiology and management of pyoderma gangrenosum: a comprehensive review. *Am J Clin Dermatol.* 2012;13:191-211. [PMID: 22356259]
- Xu A, Strunk A, Garg A, Alloo A. Prevalence of inflammatory bowel disease in patients with pyoderma gangrenosum: A population-based analysis. *J Am Acad Dermatol.* 2022;86:1351-1352. [PMID: 33971254]
- Reese GE, Constantinides VA, Simillis C, Darzi AW, Orchard TR, Fazio VW, Tekkis PP. Diagnostic precision of anti-Saccharomyces cerevisiae antibodies and perinuclear antineutrophil cytoplasmic antibodies in inflammatory bowel disease. *Am J Gastroenterol.* 2006;101:2410-22. [PMID: 16952282]
- Din RS, Tsiaras WG, Li DG, Mostaghimi A. Efficacy of Systemic Dapsone Treatment for Pyoderma Gangrenosum: A Retrospective Review. *J Drugs Dermatol.* 2018;17:1058-1060. [PMID: 30365585]
- Song H, Lahood N, Mostaghimi A. Intravenous immunoglobulin as adjunct therapy for refractory pyoderma gangrenosum: systematic review of cases and case series. *Br J Dermatol.*

2018;178:363-368. [PMID: 28742926]

Table 1. Perception of shared SmartPhrases for inpatient consultative dermatology rotations.

Survey Question	Survey response	Current residents (N=14)		Former residents (N=19)		All respondents (N= 33)	
		N	%	N	%	N	%
I create and utilize my own SmartPhrases in my clinical practice	Agree	13	93%	16	84%	29	88%
	Neutral	1	7%	2	11%	3	9%
	Disagree	0	0%	1	5%	1	3%
I utilize others' SmartPhrases in my clinical practice	Agree	14	100%	15	79%	29	88%
	Neutral	0	0%	1	5%	1	3%
	Disagree	0	0%	3	16%	3	9%
I find the composition of SmartPhrases helps my learning	Agree	14	100%	18	95%	32	97%
	Neutral	0	0%	1	5%	1	3%
	Disagree	0	0%	0	0%	0	0%
I find the implementation of SmartPhrases increases my note writing efficiency	Agree	14	100%	18	95%	32	97%
	Neutral	0	0%	1	5%	1	3%
	Disagree	0	0%	0	0%	0	0%
I think composing SmartPhrases is too time-consuming	Agree	3	21%	2	11%	5	15%
	Neutral	5	36%	5	26%	10	30%
	Disagree	6	43%	12	63%	18	55%
I think the incorporation of SmartPhrases adds to "note bloat"	Agree	3	21%	6	32%	9	27%
	Neutral	6	43%	5	26%	11	33%
	Disagree	5	36%	8	42%	13	39%
I cite medical literature in my notes as a justification for my medical decision-making	Agree	3	21%	11	58%	14	42%
	Neutral	10	71%	5	26%	15	45%
	Disagree	1	7%	3	16%	4	12%
SmartPhrases remind me of medical information I would otherwise forget	Agree	14	100%	18	95%	32	97%
	Neutral	0	0%	1	5%	1	3%
	Disagree	0	0%	0	0%	0	0%
The SmartPhrases limit(ed) my independent research into dermatologic conditions	Agree	2	14%	2	11%	4	12%
	Neutral	4	29%	4	21%	8	24%
	Disagree	8	57%	13	68%	21	64%
I often incorporate(d) the shared SmartPhrases into my consult notes	Agree	13	93%	15	79%	28	85%
	Neutral	1	7%	4	21%	5	15%
	Disagree	0	0%	0	0%	0	0%
I think incorporating SmartPhrases enhanced/enhances the educational value of my notes for other providers	Agree	14	100%	18	95%	32	97%
	Neutral	0	0%	1	5%	1	3%
	Disagree	0	0%	0	0%	0	0%
The information for a given SmartPhrases was/is insufficient and required more research on my part	Agree	0	0%	3	16%	3	9%
	Neutral	4	29%	5	26%	9	27%
	Disagree	10	71%	11	58%	21	64%
I edited or added to existing SmartPhrases	Agree	8	57%	14	74%	22	67%
	Neutral	1	7%	2	11%	3	9%
	Disagree	5	36%	3	16%	8	24%
I made new SmartPhrases to share with others	Agree	8	57%	14	74%	22	67%
	Neutral	2	14%	2	11%	4	12%
	Disagree	4	29%	3	16%	7	21%
The SmartPhrases taught me how to write better notes	Agree	4	29%	16	84%	20	61%
	Neutral	9	64%	2	11%	11	33%
	Disagree	1	7%	1	5%	2	6%
Shared SmartPhrases are valuable to dermatology resident education	Agree	14	100%	18	95%	32	97%
	Neutral	0	0%	1	5%	1	3%
	Disagree	0	0%	0	0%	0	0%

Shared SmartPhrases should be incorporated in all dermatology resident curriculum	Agree	9	64%	17	89%	26	79%
	Neutral	5	36%	1	5%	6	18%
	Disagree	0	0%	1	5%	1	3%

Appendix 1. Example of select entries from the inpatient consultative dermatology SmartPhrase compendium.

Erythromelalgia

Erythromelalgia is a rare disorder of unknown cause that results in intermittent episodes of erythema, pain, and swelling in the extremities. The most frequent precipitating factor for the episodes is heat exposure. The symptoms are usually symmetrical and affect the feet as well as occasionally the hands. The pathophysiology is poorly understood but is thought to be secondary to reversible vascular dysfunction and neuronal channelopathy. Erythromelalgia has been reported to occur in association with several drugs (verapamil, nicardipine, bromocriptine, pergolide, mercury poisoning), rheumatologic disease (SLE, Raynaud's syndrome), myeloproliferative disease, as well as other diseases (pernicious anemia, TTP, hereditary sensory neuropathy, infectious mononucleosis, acute diabetic neuropathy, vasculitis), and pregnancy.

The differential diagnosis for erythromelalgia includes reflex sympathetic dystrophy, angiodyskinesia, acrocyanosis, and lipodermatosclerosis. Skin biopsy is of little benefit in the delineation of erythromelalgia.

No single therapy has proved to be consistently effective, which supports the possibility that there are several subtypes of erythromelalgia. *J Am Acad Dermatol.* 2000; 841-847. [PMID: 11050591].

Consider a course of prednisone 40 mg daily for ~5 days as there is some evidence that a subset of patients with erythromelalgia may be corticosteroid responsive. Early intervention has effected improved outcomes in these responsive individuals, potentially preventing irreversible nociceptive damage. *J Am Acad Dermatol.* 2017;76:506-511. [PMID: 28413058].

Pyoderma Gangrenosum

Pyoderma gangrenosum (PG) is a systemic auto-inflammatory disease resulting from dysregulated innate immunity characterized by painful nodules, pustules, or plaques that enlarge and erode over a span of several days into a sharply marginated ulcer with undermined, violaceous borders and a surrounding zone of erythema. PG commonly occurs in areas of trauma, also known as pathergy. PG is associated with underlying systemic diseases in >50% patients (most commonly inflammatory bowel disease, seronegative and rheumatoid arthritis, monoclonal gammopathies (most frequently IgA), hematologic malignancies (most commonly MDS or AML). *Am J Clin Dermatol.* 2012:191-211. [PMID: 22356259].

The prevalence of IBD among a retrospective analysis of 1920 PG patients was 34.0% compared with 0.9% among 23,926,561 controls. In a subgroup analysis, the prevalence of IBD among PG patients aged 18-44 years was substantially higher than that of controls in the same age group (aPR 56.8 [95% CI 52.0-62.0]). *J Am Acad Dermatol.* 2022;86:1351-1352. [PMID: 33971254].

Pyoderma gangrenosum is a clinical diagnosis, lacking specific serologic or histologic markers. The diagnosis of PG is suggestive if the ulcer is rapidly progressive (50% increase in ulcer size within 1 month) and with characteristic morphology, history suggestive of pathergy or cribriform scarring, concomitant associated systemic diseases, histopathologic findings demonstrating dermal neutrophilia, appropriate treatment response to systemic immunomodulatory therapies, and reasonable exclusion of other causes of cutaneous ulceration.

The differential diagnosis of pyoderma gangrenosum is broad, including vascular occlusive or venous disease, malignancy, exogenous tissue injury, systemic vasculitis, other neutrophilic dermatoses (halogenoderma, Sweet's syndrome), and infectious etiologies (bacterial, viral, protozoal, and fungal).

Punch biopsy of the ulcer edge encompassing the subcutis. Will send for histopathology to aid in exclusion of other conditions. Will also send for tissue cultures, including mycobacterial and fungal cultures, as bacterial cultures are nearly universally positive and represent colonization rather than primary or secondary infection.

Obtain rheumatoid factor, anti-CCP antibodies, serum ANCA panel, SPEP with IFX, free light chains, quantitative IgG, IgM, IgA.

Check serum iron panel, ferritin, fecal occult blood, fecal calprotectin test to check for upper/lower GI disease and serum 25-OH vitamin D, INR, and vitamin B12 levels to evaluate for ileal disease.

Check anti-Saccharomyces cerevisiae (ASCA) IgG, IgA antibodies (+ASCA had 92.5% Sp for Crohns in meta-analysis of 13 studies with 4097 patients. *Am J Gastroenterol.* 2006;101:2410-22. [PMID: 16952282].

Given degree of suppuration, apply absorptive dressings such as hydrocolloids, films, or alginate fibrinous dressings to the wound itself, with petroleum gauze at the wound periphery. Adhere the dressing to the normal, surrounding skin utilizing paper tape.

Perform ILK 40mg/mL to the ulcer edge every 4-6 weeks.

Avoid surgical, non-surgical, or chemical debridement as this may cause pathergy and result in the worsening of PG.

Initiate dapsonsone 100 mg daily (led to improvement in 96.9% of a retrospective review of 27 patients with PG, attributable to its inhibition of neutrophil myeloperoxidase, respiratory burst, adhesion, and chemotaxis. *J Drugs Dermatol.* 2018;17:1058-1060. [PMID: 30365585].

Treatment refractory pyoderma gangrenosum may respond favorably to intravenous immunoglobulins (IVIG). The mechanism of IVIG in PG treatment most likely involves multiple anti-inflammatory actions including the following: binding FcRn, a crucial regulator of IgG half-life, and thereby decreasing half-life of circulating antibodies; inhibition of activating Fc receptors, which leads to antibody-mediated effector functions; and inhibition of complement-mediated tissue destruction. A retrospective chart review at two tertiary care hospitals and literature search disclosed 49 patients with PG treated with IVIG. Most patients (73.5%) received 2 g/kg or higher. Complete or partial response was seen in 88% of patients and complete response in 53% of patients. The mean time to initial response was 3.5 weeks. Ninety-two percent of patients were able to taper or cease systemic steroids. *Br J Dermatol.* 2018;178:363-368. [PMID: 28742926].