Dermatology elective curriculum: introduction to a dermatology birdwatching list

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To the Editor:

Dermatologic conditions account for approximately 12.4% of diseases seen by primary care physicians. However, dermatology rotations are often sparse and not required by many medical schools [1]. We discuss an innovative means to address the minimal dermatologic training in medical education through a virtual dermatology curriculum. In March 2022, an elective dermatology course was created for twenty-four third-year medical school students interested in various specialties focused on dermatology diagnosis and skills. The learning objectives of the curriculum are to develop differential diagnoses for skin conditions, perform a self-skin exam, and become a better physician by enhancing visual skills and utilizing health information technology through a focused independent study of dermatologic conditions.

The four-week virtual dermatology elective curriculum utilized the American Academy of Dermatology (AAD) Basic Dermatology Curriculum augmented by *The Dermatology Birdwatching List and Travel Guide* and VisualDx [2]. Although the AAD curriculum is structured, the intent is that this supplemental birdwatching list will guide students in navigating the modules and inspire focus and curiosity to enhance the modules. The *Dermatology "Birdwatching" List* is a compiled list of dermatologic conditions commonly seen in primary care settings and foundations of skin anatomy (**Appendix**). The medical student inputs a description and notes for each listed condition. The concept evolved from birdwatchers tracking and learning species through a birdwatching list, which has been applied to students recording encountered dermatologic diagnoses in a dermatology *birdwatching* list. It engages students in active learning through self-guided research on diagnoses utilizing VisualDx and serves as a study guide and future reference. Although this curriculum did not include an in-person clinical experience, the dermatology birdwatching list has been utilized within inpatient and outpatient clinical teaching environments over the past 20 years to direct medical students' clinical experiences and orient clinical preceptors to students' learning needs. Additionally, VisualDx exposes students to quality reading materials and a wide array of visuals, including those representing skin of color. At the conclusion of the four-week curriculum, students created a presentation integrating a dermatologic topic with their specialty interest. The students were encouraged to reflect their specialty interests within these presentations. Presentation topics included obstetrics and gynecology (2 students), radiology (1 student), internal medicine sub-specialties (5 students), pediatrics (3 students), psychiatry (2 students), emergency medicine (3 students), and dermatology (8 students). Weekly class zoom meetings with

instructors were scheduled to answer students' questions and complete quizzes on the weekly topics.

Implementation of this virtual curriculum substantially increased the total number of students able to participate in a dermatology elective at this medical university from eight in academic year 2020-2021 to 37 in academic year 2021-2022. Of the 24 students enrolled in the described elective, 16 students completed the routine university end-of-course evaluation. From this survey, 100% of students *strongly agree* and *agree* that this course accomplished its stated goals and that they would recommend the elective to future M3 students. Eleven students left narrative feedback on their overall experience including that "assignments [birdwatching list] were helpful and reinforced the learning from the online modules" and that students "learned a lot…[dermatology] isn't a huge part of our curriculum". In agreement with multiple students' suggestions, future implementations of this curriculum should strive to include at least one in-person clinic day per student.

Although the AAD curriculum provides strong baseline knowledge for medical students, the *Dermatology Birdwatching List* is a valuable supplement through contributing an active learning component, promoting curiosity in learning and providing a future reference guide for students. This structured curriculum, including the AAD Basic Dermatology Curriculum, *Dermatology Birdwatching List*, VisualDx, and a final presentation, can better prepare students entering any specialty for dermatologic encounters. It is hoped that the described curriculum and the *Dermatology Birdwatching List* can be integrated seamlessly into medical education to increase learners' baseline dermatologic knowledge, guide clinical dermatology experiences, and train well-rounded physicians.

Potential conflicts of interest

The authors declare no conflicts of interest.

References

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Appendix. *Dermatology birdwatching list for learners.*

Foundations of Skin Anatomy	Description	Notes
Anatomy of epidermis		
Anatomy of dermis		
Subcutaneous fat		
Basement membrane components		
Keratinocytes		
Melanocytes		
Merkel cells		
Fibroblasts		
Langerhans cells		
Sebaceous glands		
Eccrine glands		
Apocrine glands		
Collagen protein		
Elastin protein		
Keratin protein		
Hyaluronic acid		
Hair follicle unit		
Nail anatomy		

Top 12 to know	Description	Notes
Acne vulgaris		
Verruca vulgaris		
Psoriasis		
Atopic dermatitis		
Basal cell carcinoma		
Squamous cell carcinoma		
Melanoma		
Benign and atypical nevi		
Seborrheic keratosis		
Seborrheic dermatitis		
Cherry angioma		
Lentigo including premalignant and malignant lesions		

Clinical care

Common Lesions	*Pathognomonic Description	**Categorization	Notes
Acrochordon			
Actinic keratosis			
Allergic contact dermatitis			
Androgenic alopecia			
Asteatotic eczema/Eczema craquelé			
Atypical nevi			
Bacterial folliculitis			
Candidiasis			
Compound nevi			
Cutis rhomboidalis nuchae			
Dermal nevi			
Dermatofibroma			
Dermatosis papulosa nigra			
Dyshidrotic eczema			
Epidermal inclusion cyst			
Herpes simplex virus			
Herpes zoster			
Hidradenitis suppurativa			
Hypertrophic actinic keratosis			
Impetigo			
Junctional nevi			
Keloid versus hypertrophic scar versus scar			
Keratosis pilaris			
Lentigines			
Lichen simplex chronicus			
Lipoma			
Melasma			
Milium			
Molluscum contagiosum			
Necrobiosis lipoidica			
Nevus spilus			
Notalgia paresthetica			
Nummular eczema			
Onychodystrophy			
Phytophotodermatitis			
Pigmented purpuric dermatosis			
Pityrosporum folliculitis			
Poikiloderma			
Porokeratosis			
Post-inflammatory hyperpigmentation and hypopigmentation			
Prurigo nodularis			
Rosacea			
Scabies			
Sebaceous hyperplasia			
Solar lentigo			
Stasis dermatitis			
Stucco keratosis			

Telangiectasia			
Telogen effluvium			
Tinea (know common dermatophyte for each type- based on anatomic location)			
Tinea versicolor			
Venous ulcer versus arterial ulcer			
Viral exanthem			

Good to know; rarer to see	*Pathognomonic description	**Categorization	Notes
Acute generalized exanthematous pustulosis (AGEP)			
Alopecia areata			
Bullous pemphigoid			
Blue nevi			
Cutaneous lupus erythematosus (3 major subtypes)			
Dermatomyositis			
Dermatofibrosarcoma protuberans			
Drug reaction with eosinophilia and systemic symptoms (DRESS)			
Erythema ab igne			
Erythema nodosum			
Fixed drug eruption			
Granuloma annulare			
Hyperhidrosis			
Keratoacanthoma			
Kerion			
Leukocytoclastic vasculitis			
Lichen planus			
Lichen sclerosis			
Merkel cell carcinoma			
Morbilliform drug eruption			
Morphea			
Mycosis fungoides			
Perioral dermatitis			
Pemphigus vulgaris			
Pityriasis rosea			
Pyoderma gangrenosum			
Scleroderma			
Stevens-Johnson syndrome/Toxic epidermal necrolysis (SJS/TEN)			
Toxic shock syndrome			
Urticaria			

Dermatology signs to know (link here)	**Associated diagnosis**
ABCDEs of melanoma	
Auspitz sign	
Breakfast, lunch, and dinner sign	
Butterfly sign	
Dimple sign	
Gottron papules versus Gottron sign	
Hair pull test	
Koebner phenomenon	
Leser-Trelat sign	
Nikolsky sign	
Prominent skin lines	
Shawl sign	
Thrombosed capillaries with disruption of skin lines	
Tyndall effect	

Dermatologic therapies/procedures to know	**Notes**
Acne therapies (including isotretinoin)	
Anti-fungal therapy; topical versus systemic	
Antibiotics for infection versus for anti-inflammatory effects	
Corticosteroid therapy; know potency levels	
Cryotherapy	
Electrodessication	
KOH wet mount	
Punch biopsy	
Shave biopsy	
Wide local excision	

Good resources: Lookingbill and Mark's Principles of Dermatology; Habif's Clinical Dermatology: A Color Guide to Diagnosis and Therapy; Free AAD dermatology modules; VisualDx; AccessMedicine

*Meaning characteristic of the disease

**Categorize based on 1 or more of the following: tumor, inflammatory, infectious, dermal versus epidermal rash, vascular, autoimmune, ulcer, hair, nails.

Learner, please use these categories or any additional categorizations that are helpful to your understanding and learning of these dermatologic conditions.