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NATIONAL DERMATOLOGY CORE CURRICULUM AND CORE COMPETENCIES

Officially adopted by the Canadian Professors of Dermatology, July 1, 2012, Ottawa, ON

Preamble

It has long been recognized that there is a deficit in the teaching of dermatology in undergraduate medical education. As a result many who Canadian medical school graduates find that they do not have sufficient knowledge and skills to diagnose and treat the common dermatological complaints which routinely present on a daily basis in clinical practice. Combine this with a shortage of dermatologists in all but the largest cities in Canada, and it is obvious that the public and our medical school graduates are not being well served by this practice. We are failing on our side of the social contract between Canadians and their medical schools to provide well-rounded generalist graduates (1).

Currently, many medical school dermatology curricula are based on the Medical Council of Canada examinations and objectives. Students who follow such an approach will achieve a passing grade on the LMCC examinations, but this does not necessarily produce a generalist physician who is comfortable and competent with the diagnosis and treatment of a patient presenting with a skin complaint.

The Canadian Professors of Dermatology (CPD), a group of dermatology educators from all Canadian medical schools believes that a national curriculum, supported and approved by this group can be a guide to what subjects should be incorporated into a medical school curriculum. After the CPD membership was canvassed through a modified Delphi method, a curriculum was developed to embody the minimum knowledge and competencies all graduating physicians should have on the subject of dermatology. Existing national dermatology curricula/objectives such as those of the Medical Council of Canada and the American Academy of Dermatology were reviewed during the development of our Canadian standard.

The curriculum has been organized around 34 core competencies identified by the education sub-committee. The core competencies reflect common dermatologic conditions encountered either directly or incidentally by most physicians regardless of practice focus, and also represent the clinical needs of the Canadians who deserve timely and proper care of their skin problems (2,3). Whenever possible, the curricula should be delivered using a variety of teaching methods including problem based tutorials, lectures, clinical skills, and direct patient encounters in clinical practice. This is strongly recommended (2,4). Proficiency in clinical dermatology relies extensively on the acquisition of visual literacy, and medical schools should ensure that appropriate resources and time are available to support visual literacy teaching and student evaluation thereof.

This guide is not meant to replace all existing curricula and each individual school should

choose how and when they wish to incorporate this material into the years of study for their students. Nevertheless the Canadian Professors of Dermatology believe that this tool represents the essential and minimum knowledge and skill set required for a graduating Canadian physician.

References:

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2. UGME, Faculty of Medicine, University of Manitoba, Version 7.0; FINAL; November 9, 2010; Undergraduate Medical Education Learning Objectives.
3. <http://dom.lhsc.on.ca/dom/divisions/geriatrics/CGS%20Core%20Comps.pdf>; Core Competencies (Learning Outcomes) for Medical Students in Canada. Canadian Geriatric Society Education Committee
4. Division of Development of Human Resources for Health, World Health Organization. Defining and Measuring the Social Accountability of Medical Schools: Geneva Switzerland. World Health Organization; 1995. Available at: http://whqlibdoc.who.int/hq/1995/WHO_HRH_95.7.pdf

DERMATOLOGY CORE COMPETENCIES

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When faced with a patient with a skin complaint, the graduating medical student will be able to:

Identify skin lesions

1. Use the basic language of dermatology to describe a skin lesion/eruption
2. Distinguish between the basic dermatology primary lesions and their secondary characteristics based upon their morphology
3. Recognize when a skin lesion could be a sign of underlying systemic disease

Recognize normal structure and function of skin so as to be able to identify disease.

4. Recognize the common normal benign skin tumors
5. Perform a complete skin exam and identify abnormal lesions
6. Be able to counsel a patient on how to perform a skin self exam
7. Recognize the serious nature and the possibility of disability due to a skin eruption

Skin Cancer Prevention

8. Recognize melanoma and non-melanoma skin cancer
9. Recognize normal from abnormal pigmented lesions
10. Recognize the difference between sun damaged skin, aging skin and normal skin
11. Understand and be able to counsel patients on the appropriate use of sunscreens and the need for sun avoidance and sun protection use
12. Demonstrate the ability to recognize the role of sun protection and skin surveillance in the immuno-compromised patient

Adolescent and Pediatric Dermatology

13. Counsel and treat atopic dermatitis in infants and children
14. Recognize and define a treatment ladder for viral warts/molluscum
15. Construct a treatment plan for patients with acne vulgaris
16. Recognize and know when to refer pediatric/congenital lesions such as hemangiomas, port wine stains, mastocytomas, the signs of neurofibromatosis and tuberous sclerosis
17. Differentiate visually between the common pediatric viral exanthems and the common clinical presentations of infections with *S. aureus* and *Strep.*

Diagnose and treat scaling eruptions

18. Define and distinguish between the classic and atypical clinical patterns of atopic dermatitis and other eczemas, psoriasis, lichen planus, seborrheic

- dermatitis, pityriasis rosea, dermatophyte infections of the skin, eruptions of collagen vascular disease and occupational/contact dermatitis.
19. Develop initial plans for the diagnosis and treatment of scaling lesions due to psoriasis, infections and dermatitis
 20. Understand the nature of skin disease and how it affects quality of life

Dermatology medications

21. Recognizing the side effects and potential complications of commonly used medications in dermatology
22. Become fully comfortable with prescribing topical therapy and in particular with the use and potential abuse of topically applied steroids

Drug Reactions

23. Be able to recognize the reaction patterns that can be due to oral and topical medications
24. State an approach to the diagnosis and treatment of reactions to medication

Dermatology Emergencies

25. Recognize a blistering disorder and through a history and physical exam, formulate a differential diagnosis as well as an investigation and treatment plan based upon that exam
26. Be familiar with the clinical presentation of necrotizing fasciitis, bullous pemphigoid, pemphigus vulgaris, toxic epidermal necrosis, and erythroderma
27. State a plan for diagnosis and treatment of the common dermatology emergencies

Dermatology Procedures

28. Know how to use a punch or excisional biopsy to help in the diagnosis of skin disease
29. Know how and when to do a skin/hair/nail scraping for KOH and fungal culture
30. Know how and the appropriate use of bacterial and viral cultures
31. Be able to decide which lesions can be safely treated with cryotherapy

Hair and Nails

32. Define and recognize, androgenic alopecia and alopecia areata, their natural history and initial treatment options
33. Be able to identify scarring alopecia and the need for prompt diagnosis and therapeutic intervention
34. Know common nail changes and their associated disease processes

NATIONAL DERMATOLOGY CORE CURRICULUM

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A. Morphology and Basic Clinical Skills

Goals: The goal of this topic is to give the student a basic vocabulary for describing dermatologic lesions and to explain how to do the basic skin exam

Topics:

- Morphology of 8 primary lesions
- Approach to describing a skin lesion
- The skin exam and common procedural techniques

Objectives:

- List the eight basic types of skin lesions and know 2 clinical examples of each
- Demonstrate an approach for describing a skin lesion
- Demonstrate how to do a skin exam
- Demonstrate how to do a punch, shave and excisional biopsy and when each choice is more appropriate
- Demonstrate the correct technique for cryotherapy

B. Basic Science of Skin

Goals: To introduce the student to the basic anatomy and function of the skin in order to be able to correlate disorders in function/anatomy with skin disease.

Topics:

- Function of the skin
- Basic skin anatomy

Objectives:

- List 3 functions of the skin as an organ and how dysfunction leads to disease (give examples)
- List the 3 layers of the skin
- List the 5 cellular layers of the epidermis.

C. Bacterial and Fungal Infections and Infestations

Goal: To give the student a basic knowledge of the common bacterial and fungal infections and infestations of the skin and how they are diagnosed and treated.

Topics:

- Bacterial infections caused by Staph. aureus and Strep. sp.
- Pityriasis versicolor, T. corporis and T. pedis
- Scabies and lice
- Necrotizing fasciitis

Objectives:

- List 3 presentations of Staph. infections
- Describe the morphology of cellulitis
- Know the morphology of Tinea corporis, P. versicolor and T. pedis
- Describe how to take a skin prep for scabies
- Describe how to take a skin scraping for KOH and fungal culture
- Name the causative organism for human scabies and recognize it on a microscopic exam
- List the options for treatment for the common infections and infestations of the skin
- Describe the clinical presentation of folliculitis, furuncle, carbuncle and erysipelas
- Describe the clinical presentation and treatment of necrotizing fasciitis

D. Viral Skin Infections

Goals: To give the student a generalist knowledge of common viral infections of the skin; to give a basic understanding of the role of immunocompetency in viruses and skin disease.

Topics:

- Herpes 1 and 2 and VZV
- Molluscum contagiosum
- Warts

Objectives:

- Describe the basic morphology of HSV 1, 2 and VZV
- Describe the clinical presentations of HSV 1 and 2
- Describe the clinical presentations of VZV: primary and reactivation
- Describe the morphology of molluscum contagiosum and warts
- Describe an approach to the treatment of molluscum contagiosum and warts
- List the appropriate treatment for HSV 1 and 2
- List appropriate treatment for VZV and zoster
- Know the significance of cutaneous viral infections in the immunocompromised and when to refer for specialist care.

E. Skin cancer

Goals: The goal of this topic is to give students the basic knowledge to be able to recognize the 3 basic forms of skin cancer and the precursor lesion of actinic keratosis as well as to be able to identify those patients at greatest risk for cutaneous malignancies and how to appropriately refer these patients for care. Students are also being taught the differential diagnosis of pigmented lesions to aid in the correct identification of malignant pigmented and non-pigmented lesions. As well, a basic knowledge and the role of sunscreens and sun protection are introduced.

Topics:

- Basal Cell Carcinoma (BCC)
- Squamous Cell Carcinoma (SCC)
- Actinic Keratoses (AK)
- Melanoma (MM)
- Common Pigmented Lesions
- Sunscreens and Sun Protection

Objectives:

- Identify and describe the morphology of BCC, SCC and AK's
- List 4 sub-types of BCC
- Know the ABCDE's of MM and how to apply them to identify a MM
- List the risk factors for developing skin cancer

- Know the guidelines for an appropriate referral
- List the prognostic factors for melanoma and understand how this applies to treatment
- Know the basics of how to prevent skin cancer
- Recognize the main differential diagnoses of a pigmented lesion
- Recognize the differences in morphology between benign and malignant pigmented lesions in a visual test
- Be able to list and explain the types and proper use of various forms of sun protection

F. Atopic dermatitis (AD)

Goals: To provide a generalist approach to the basic diagnosis and treatment of atopic dermatitis and the potential complications of the disease and its treatment; To give the student an appreciation for the differential diagnosis of atopic dermatitis; To give an understanding of the role of the generalist in the diagnosis and treatment of chronic hand dermatitis.

Topics:

- Morphology of AD and its variants
- Treatment of AD
- Chronic hand dermatitis

Objectives:

- Recognize the morphology of AD in infants and children
- List the potential complications of AD
- List the options for treatment of AD
- List the differential diagnosis of AD
- List the side effects (local and systemic) of topically applied corticosteroids
- Describe how to use a topical steroid
- Describe your treatment paradigm for an infant with AD: For an adult.
- List the differential diagnosis (DDx) for erythematous patches in children
- List the DDx for red scaling patches in adults
- Discuss the differential diagnosis, the significance (QOL issues), and treatment options of chronic hand dermatitis

G. Psoriasis and Other Papulosquamous Diseases

Goals: To provide an understanding of the impact of a diagnosis of psoriasis and to provide the student with a generalists approach to the diagnosis and treatment of chronic plaque psoriasis; To be able to recognize the other common variants of psoriasis and its complications and the entity of erythroderma; To provide the student with an overview of lichen planus (LP) and pityriasis rosea (PR).

Topics:

- Morphology
- Treatment
- Quality of Life (QOL) Issues and psoriasis co-morbidities

Objectives:

- Know the morphology of chronic plaque psoriasis (CPP)
- Understand the QOL issues of CPP
- List the treatment options for CPP and when to prescribe them
- Know when a patient with psoriasis should be referred for specialist care.
- Know the morphology of pustular, guttate and inverse psoriasis and appropriate treatment options
- List the important side effects of common psoriasis treatments both topical and systemic
- List the 4 commonest differential diagnoses of a patient who presents with erythroderma
- To provide the student with an overview of lichen planus (LP) and pityriasis rosea (PR).
- Be able to provide an approach to the work up of a patient who presents with erythroderma

H. Acne Vulgaris, Rosacea and Perioral Dermatitis

Goals: To provide the student with the knowledge to recognize and treat acne vulgaris (acne), rosacea and perioral dermatitis at the level of a generalist physician.

Topics:

- Diagnosis of acne, rosacea and perioral dermatitis
- Treatment of acne, rosacea and perioral dermatitis

Objectives:

- Know the morphology of acne, rosacea and perioral dermatitis
- Understand the basic patho-physiology of acne and rosacea and how this can be used to direct treatment choices
- Provide a basic treatment plan when presented with a patient with acne or rosacea
- Understand the 3 main causes of perioral dermatitis
- Describe your approach to treatment of perioral dermatitis
- Know when it is appropriate to refer a patient for specialist treatment

I. Vesico-bullous Disease

Goals: To provide the student with a basic understanding of blistering diseases of the skin and an approach to treatment

Topics:

- Bullous pemphigoid (BP)
- Pemphigus vulgaris (PV)
- Blistering Dermatitis
- Traumatic bulla
- Infectious blisters (HSV, blistering tinea, staph scalded skin syndrome (SSSS), and bullous impetigo)

Objectives:

- Know the basic pathology of PV and BP and how this related to clinical morphology
- Understand the need for prompt therapy and the sequelae of untreated BP/PV
- Describe an approach to treating BP/PV
- Discuss the difference between chronic, sub acute and acute dermatitis
- Describe an approach to the diagnosis of blistering disease
- Differentiate clinically between traumatic and other bulla
- List 3 allergens in allergic contact dermatitis
- Describe clinical presentation of infectious vesico-bullous disease

J. Drug Reactions/Reaction Patterns

Goals: To provide the student with a generalist's knowledge of the morphology of drug reactions as reaction patterns and an approach to diagnosis and treatment.

Topics:

- Morphology of maculopapular drug rash, urticaria, erythema nodosum (EN) and erythema multiforme (EM)
- Approach to diagnosis and treatment
- Morphology and clinical presentation of Steven Johnson Syndrome (SJS), Toxic Epidermal Necrolysis (TEN), and Fixed Drug Reactions (FDE) as other serious reaction patterns
- Drug-related eosinophilia with systemic symptoms (DRESS)/ Drug-induced hypersensitivity syndrome (DIHS)

Objectives:

- Describe the morphology of a maculopapular drug rash, urticaria, EN and EM
- Understand how to create a drug chart for the purpose of identifying the causative agent of a maculopapular drug rash
- List the 3 commonest drugs implicated in causing a maculopapular drug rash
- List 3 causes of EN other than drug
- Define acute, chronic and physical urticaria
- List 8 etiologies of urticaria
- Describe the clinical presentation and common etiologies of SJS, TEN, DRESS/DIHS and FDE
- List 6 dermatologic emergencies

K. Common Skin Lesions

Goals: To familiarize the student with the common skin lesions of infancy, childhood/adolescence and older adults.

Topics:

- Infancy- milia, sebaceous hyperplasia, erythema toxicum neonatorum, mongolian spots, congenital nevi, mastocytomas and hemangiomas/vascular malformations
- Childhood- acquired nevi, acne, becker's nevus, nevus sebaceous, epidermal nevus, keratosis pilaris, ichthyosis vulgaris and granuloma annulare

- Adults- neurofibromas, dermatofibromas, seborrheic keratoses, epidermal cyst, acrochordon and capillary angioma

Objectives:

- Describe the clinical presentation of each conditions
- Recognize lesions in a visual test
- Know accepted treatment options for each condition

L. Cutaneous Manifestations of Internal Disease

Goals: To give the student an overview of the most common cutaneous presentations of internal disease; to give a brief overview of genetic disease with significant cutaneous manifestations.

Topics:

- Lupus erythematosus (LE)
- Cutaneous signs of diabetes mellitus (DM)
- Neurofibromatosis (NF)
- Tuberous sclerosis (TS)
- Leukocytoclastic vasculitis (LCV)
- Xanthomas
- Vasculitis
- Metastatic disease to the skin
- Cutaneous signs of liver and renal disease
- Acanthosis nigricans (AN)

Objectives:

- Describe the clinical presentation of LE and its variants
- Describe the morphology of the cutaneous signs of DM
- Recognize the differences between TS and NF
- Describe the clinical presentation of LCV
- Know the potential systemic complications of LCV
- List the cutaneous types of xanthomas and the associated lipid abnormality
- Describe a classification for vasculitis

- Name the commonest malignancies which metastasize to skin
- What is a Sister Mary Joseph nodule and what is the commonest associated malignancy in a female? in a male?
- List 3 cutaneous signs each for liver and renal disease
- Give a classification of AN and the major etiologic factor in its development

M. Hair and Nails

Goals: To give the student an overview of the common causes and an approach to the diagnosis and treatment of alopecia; To give an understanding of nail biology and nail disease.

Topics:

- Classification scheme for alopecia
- Alopecia aerata (AA)
- Androgenic alopecia - male (MPB) and female pattern baldness (FPB)
- Telogen effluvium (TE) and anagen effluvium (AE)
- The hair cycle
- The nail unit

Objectives:

- Describe the hair cycle
- Define and classify alopecia
- Provide an example for each classification of alopecia
- Describe the natural history of AA and MBP
- Name the pathognomonic feature of AA
- List two differences between MPB and TE
- List the features of a scarring alopecia
- Name 5 common nail changes and give examples of associated disease

N. Contact Dermatitis and Occupational Disease

Goals: To provide the student with a basic knowledge of contact dermatitis and the importance of dermatology in occupational skin disease.

Topics:

- Allergic contact dermatitis (ACD) and Irritant contact dermatitis (ICD)
- The criteria for diagnosis of occupational disease

Objectives:

- Define ACD and ICD
- List the difference between ACD and ICD
- Describe how to perform epicutaneous testing for ACD
- List 5 of the 10 commonest allergens in North America causing ACD
- List the 6 criteria for proving a link between the occupation and a disease state