



Body System: Integumentary		
Session Topic: Skin Cancer Update		
Educational Format		Faculty Expertise Required
REQUIRED	Interactive Lecture	Expertise in the field of study. Experience teaching in the field of study is desired. Preferred experience with audience response systems (ARS). Utilizing polling questions and engaging the learners in Q&A during the final 15 minutes of the session are required.
OPTIONAL	Problem-Based Learning (PBL)	Expertise teaching highly interactive, small group learning environments. Case-based, with experience developing and teaching case scenarios for simulation labs preferred. Other workshop-oriented designs may be accommodated. A typical PBL room is set for 50-100 participants, with 7-8 each per round table. <u>Please describe your interest and plan for teaching a PBL on your proposal form.</u>
Professional Practice Gap	Learning Objective(s) that will close the gap and meet the need	Outcome Being Measured
<ul style="list-style-type: none"> • Suboptimal adherence to skin cancer screening recommendations. • Knowledge gaps with regard to the evaluation of suspicious moles or growths. • Physicians have knowledge and practice gaps with regard to efficacious use of a dermascope • As rates of skin cancer are increasing, family physicians should educate their patients on methods of skin cancer prevention, including appropriate sun protection and skin self-examination. • Knowledge gaps distinguishing basal cell carcinoma, squamous cell carcinoma and melanoma, which may indicate a need for hands-on training to maintain a level of proficiency in skin biopsy techniques. • Knowledge gaps selecting 	<ol style="list-style-type: none"> 1. Use appearance-oriented and motivational interviewing (MI) strategies to educate patients on the importance of skin cancer prevention, appropriate sun protection and methods of early detection and diagnosis. 2. Use evidence-based recommendations to screen and diagnose patients at risk for skin cancer. 3. Apply recommended evidence-based skin biopsy techniques to verify skin cancer diagnosis and determine most appropriate surgical or pharmacologic treatment. 4. Determine appropriate treatment therapy, or coordinate surgical referral as necessary. 	Learners will submit written commitment to change statements on the session evaluation, indicating how they plan to implement presented practice recommendations.



<p>the appropriate biopsy procedure based on the suspected diagnosis.</p> <ul style="list-style-type: none"> • Poor patient adherence to lifestyle modifications to prevent skin cancer. • As new treatment options become available, family physicians need to be able to select the most appropriate treatment option based on individual evaluation. 		
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ACGME Core Competencies Addressed (select all that apply)

X	Medical Knowledge		Patient Care
X	Interpersonal and Communication Skills		Practice-Based Learning and Improvement
	Professionalism		Systems-Based Practice

Faculty Instructional Goals

Faculty play a vital role in assisting the AAFP to achieve its mission by providing high-quality, innovative education for physicians, residents and medical students that will encompass the art, science, evidence and socio-economics of family medicine and to support the pursuit of lifelong learning. By achieving the instructional goals provided, faculty will facilitate the application of new knowledge and skills gained by learners to practice, so that they may optimize care provided to their patients.

- Provide up to 3 evidence-based recommended practice changes that can be immediately implemented, at the conclusion of the session; including SORT taxonomy & reference citations
- Facilitate learner engagement during the session
- Address related practice barriers to foster optimal patient management
- Provide recommended journal resources and tools, during the session, from the American Family Physician (AFP), Family Practice Management (FPM), and Familydoctor.org patient resources; those listed in the References section below are a good place to start
 - Visit <http://www.aafp.org/journals> for additional resources
 - Visit <http://familydoctor.org> for patient education and resources
- Provide specific examples of how to apply evidence-based recommendations and guidelines for screening and diagnosis of skin cancer
- Provide specific strategies and examples to illustrate using behavioral change techniques (e.g. appearance-oriented, motivational interviewing) to counsel parents and pediatric patients about minimizing their exposure to ultraviolet radiation to reduce risk of skin cancer
- Provide updates on recent surgical and pharmacologic treatment options for skin cancer
- Provide recommendations regarding guidelines for Medicare reimbursement.
- Provide recommendations to maximize office efficiency and guideline adherence to the diagnosis and management of skin cancer
- Provide an overview of newly available treatments, including efficacy, safety, contraindications, and cost/benefit relative to existing treatments.



Needs Assessment

Skin cancer is the most common form of cancer in the U.S, with more than 61,646 people in the U.S. diagnosed and 9,199 people dying from melanoma skin cancer in 2009.¹ These statistics also do not include data for basal cell (BCC) and squamous cell carcinomas (SCC), which are not tracked by central cancer registries. The Centers for Disease Control and Prevention (CDC) reports that melanoma incidence rates have doubled in the U.S. between 1982 and 2011; and expects cases of melanoma to double over the next 15 years.² This suggests a need for physicians to raise awareness with their patient populations.

It is estimated that more than one million cases of non-melanoma skin cancer (also called keratinocyte cancers) are diagnosed each year, but they are highly curable if detected early. However, melanoma, which is considered the most dangerous form of skin cancer (especially among young people), accounts for more deaths than BCC and SCC.¹ Basal cell carcinomas present differently in persons with skin of color; therefore, leading to inaccurate diagnoses.³ A review of the literature suggests that physicians are often non-adherent to skin cancer screening recommendations.^{4,5}

The number of persons living with melanoma in the United States is rapidly increasing, driven in part by increased numbers of skin biopsies.³⁹ Between 4% and 8% of melanoma survivors develop a second primary melanoma in their lifetime, and recurrence has been documented decades after initial treatment.⁶ Survivors need to be counseled about recognizing the characteristics of potentially malignant skin lesions and using sun protection. This can be especially challenging as patients patient compliance with physician recommended follow-up regimens is generally poor.⁷

Recent AAFP Needs Assessment Survey data indicate that the management of skin cancer is one of the top 5 practice gaps among integumentary topics for family physicians. The survey data indicates that the topic of skin cancer is statistically significantly higher than average and physician skill level to manage the condition is statistically significantly lower than average.⁸ More specifically, CME outcomes data from 2012-2015 AAFP FMX (formerly Assembly): *Skin Cancer* sessions suggest that family physicians have a knowledge and competence gap related to screening; performing biopsies and dermoscopy for diagnosis; awareness of new treatment options; and timely and necessary referrals.⁹⁻¹²

As the most common symptom of skin cancer is a physical change of the skin, such as a new growth, change in an old growth (such as a mole), or development of a sore that doesn't heal, patients should be educated on how to evaluate changes in their skin, which can be done through a proper skin self-examination.¹³ Physicians should be aware of current AAFP and U.S. Preventive Services Task Force (USPSTF) evidence-based recommendations regarding skin cancer. AAFP Clinical Preventive Service Recommendations for skin cancer are summarized as follows:^{14,15}

Behavioral Counseling to Prevent Skin Cancer

- The AAFP recommends counseling children, adolescents, and young adults ages 10 to 24 years who have fair skin about minimizing their exposure to ultraviolet radiation to reduce risk for skin cancer. (2012) (Grade: B recommendation)



Behavioral Counseling to Prevent Skin Cancer

- The AAFP concludes that the current evidence is insufficient to assess the balance of benefits and harms of counseling adults older than age 24 years about minimizing risks to prevent skin cancer. (2012) (Grade: I recommendation)

Screening for Skin Cancer

- The AAFP concludes that the current evidence is insufficient to assess the balance of benefits and harms of using a whole-body skin examination by a primary care clinician or patient skin self-examination for the early detection of cutaneous melanoma, basal cell cancer, or squamous cell skin cancer in the adult general population. (2009) (Grade: I recommendation)

The American Academy of Family Physicians (AAFP) and the U.S. Preventive Services Task Force (USPSTF) has concluded, however, that “evidence is insufficient to assess the balance of benefits and harms of using a whole-body skin examination by a primary care clinician or patient skin self-examination for the early detection of cutaneous melanoma (CMM), basal cell cancer, or squamous cell skin cancer in the adult population.”^{15,16} However, this recommendation applies to the adult general population without history of premalignant or malignant lesions. Physicians should remain alert for skin lesions with malignant features noted in the context of physical exam, and be able to assess level of risk in patients that are fair-skinned men and women older than 65 years, patients with atypical moles, and those with more than 50 moles, those with a family history and a considerable history of sun exposure and sunburns.¹⁵ It is believed that some people may be more susceptible to sun damage than others, so family physicians should have a heightened index of suspicion in individuals who:¹⁷

- Have previously been treated for a form of skin cancer
- Have a family history of skin cancer – particularly melanoma
- Have many irregular or large moles
- Have freckles, fair skin or burn before tanning
- Live or frequently vacation at high altitude or tropical or subtropical climates
- Spend a lot of time outdoors
- Take certain medications, such as birth control pills, tetracyclines, sulfa drugs, certain antibiotics, non-steroidal anti-inflammatory drugs (NSAIDs), tricyclic antidepressants, thiazide diuretics, phenothiazines or sulfonylureas
- Have certain autoimmune diseases, such as lupus, or have had an organ transplant

The AAFP and the USPSTF recommend counseling children, adolescents, and young adults ages 10 to 24 years who have fair skin about minimizing their exposure to ultraviolet radiation to reduce risk of skin cancer.^{16,18} Physicians do not often receiving formal training related to behavioral change, and are often ill-equipped to provide adequate motivation to change patient UV risk behaviors.¹⁹ There is some evidence suggesting that effective counseling involves getting parents to have a realistic perception of skin cancer risk, utilizing appearance-oriented interventions (e.g. ultraviolet (UV) light photos showing skin damage) or motivational interviewing (MI); therefore, family physicians need additional education and training using these techniques to successfully implement this recommendation into practice.^{20,21}

In addition to inquiring about patients’ sun exposure and prevention habits, family physicians should also carefully examine areas of the skin that are suspicious. Using the “ABCDE” warning



signs – asymmetry, border irregularity, color variation, diameter (larger than 6 mm), and evolving – can help both family physicians and patients identify suspicious moles or skin lesions.²² According to one study, the most accurate finding was enlargement; moles can often be evaluated by using dermoscopy to examine deeper structures of the epidermis and superficial dermis that are not visible to the naked eye but can allow for better recognition of potential melanoma.²³

Actinic keratosis is the principal precursor to squamous cell carcinoma.²⁴ Family physicians should be able to recognize actinic keratosis, as well as other risk factors for cutaneous squamous cell carcinoma such as diseased or injured skin (e.g., ulcers, sinus tracts), exposure to ionizing or UV radiation, immunosuppression, and xeroderma pigmentosa. A skin biopsy is often necessary to make an accurate diagnosis; techniques include punch biopsy, incisional biopsy, and excisional biopsy or shave biopsy, all of which can be performed by a family physician. Family physicians should consider using a skin care encounter form to ensure appropriate coding and billing for diagnosing and treating skin lesions.²⁵

Surgical removal is the primary treatment for CMM, and Mohs micrographic surgery has the lowest recurrence rate.^{22,24} There are several treatment options for melanoma, including surgery, chemoimmunotherapy, targeted therapy and vaccine therapy. Chemoimmunotherapy uses anticancer drugs combined with biologic therapy to boost the immune system to kill cancer cells. Targeted therapy uses drugs or other modalities to identify and attack specific cancer cells without harming normal cells. Monoclonal antibody therapy is a type of targeted therapy being studied for the treatment of melanoma.

Physicians should also be kept up to date on new treatment therapies, changes to therapies, or warnings associated with existing therapies. Provide recommendations regarding new FDA approved medications for the treatment of skin cancer; including safety, efficacy, tolerance, and cost considerations relative to currently available options. Recent examples include, but are not limited to:²⁶

- Lmlytic (talimogene laherparepvec), the first FDA-approved oncolytic virus therapy, for the treatment of melanoma lesions in the skin and lymph nodes. October 2015
- Odomzo (sonidegib); Novartis; For the treatment of locally advanced basal cell carcinoma, July 2015
- On May 29, 2013 the FDA approved two new drugs, Tafinlar (dabrafenib) and Mekinist (trametinib), for patients with advanced (metastatic) or unresectable (cannot be removed by surgery) melanoma, the most dangerous type of skin cancer
- In January 2012, the FDA approved Erivedge (vismodegib) to treat adult patients with basal cell carcinoma, the most common type of skin cancer. The drug is intended for use in patients with locally advanced basal cell cancer who are not candidates for surgery or radiation and for patients whose cancer has spread to other parts of the body (metastatic).^{27,28}

Drugs Approved for Basal Cell Carcinoma²⁹

- Aldara (Imiquimod)
- Efudex (Fluorouracil--Topical)
- Erivedge (Vismodegib)



- 5-FU (Fluorouracil--Topical)
- Fluorouracil--Topical
- Imiquimod
- Sonidegib

Drugs Approved for Melanoma²⁹

- Aldesleukin
- Cobimetinib
- Cotellic (Cobimetinib)
- Dabrafenib
- Dacarbazine
- DTIC-Dome (Dacarbazine)
- IL-2 (Aldesleukin)
- Imlygic (Talimogene Laherparepvec)
- Interleukin-2 (Aldesleukin)
- Intron A (Recombinant Interferon Alfa-2b)
- Ipilimumab
- Keytruda (Pembrolizumab)
- Mekinist (Trametinib)
- Nivolumab
- Opdivo (Nivolumab)
- Peginterferon Alfa-2b
- Pembrolizumab
- Proleukin (Aldesleukin)
- Recombinant Interferon Alfa-2b
- Sylatron (Peginterferon Alfa-2b)
- Vemurafenib
- Yervoy (Ipilimumab)
- Zelboraf (Vemurafenib)

Family physicians can provide follow-up care for patients after surgery or other therapeutic options are offered and help to ensure patient compliance with treatment. Family physicians are also uniquely positioned to offer patients and their families/caregivers information and resources about navigation of the health system, palliative care options and ongoing support that may be needed during and after treatment.³⁰

To remain up to date on current best practices, family physicians require additional training and education on evidence-based guidelines in the prevention and management of skin cancer. Physicians may improve their screening and care of patients with skin cancer by engaging in continuing medical education that provides practical integration of current evidence-based guidelines and recommendations into their standards of care, including, but not limited to the following:^{6,22,24,31,32}

- Dermoscopy aids clinical examination in differentiating melanoma and basal cell carcinoma from benign skin lesions.



- The first step in the two-step algorithm for dermoscopy is intended to help differentiate melanocytic lesions from nonmelanocytic lesions; however, its main objective is to prevent clinicians from missing melanomas.
- The second step in the two-step algorithm for dermoscopy is intended to help differentiate nevi from melanoma.
- Because of the increased risk of melanoma, patients with atypical moles should be screened for melanoma, typically yearly, although the optimal methods and timing have not been determined.
- Biopsy of all atypical moles is neither clinically valuable nor cost-effective.
- Total excision of atypical moles with narrow margins is the preferable biopsy method when feasible.
- Treatment of basal cell carcinoma with Mohs micrographic surgery has the lowest recurrence rate, although it is best considered for tumors greater than 2 cm in size, for more invasive histologic subtypes (micronodular, infiltrative, and morpheaform), or for tumors at sites with higher risk of recurrence.
- Systematic review of recurrence rates of basal cell carcinoma with different therapies; review with multiple sources
- Because it is more difficult to control recurrent basal cell carcinoma, incomplete excision of the primary tumor, with pathology demonstrating tumor at the surgical margin, should be followed by immediate reexcision or Mohs micrographic surgery.
- Cryotherapy is an appropriate treatment for nodular and superficial basal cell carcinoma, but is not indicated for tumors more than 3 mm deep.
- Use of topical imiquimod (Aldara) or fluorouracil for the treatment of basal cell carcinoma should be limited to patients with small tumors in low-risk locations who are unwilling or unable to undergo treatment with better-established therapies.
- There is no statistically significant difference in survival for narrow vs. wide surgical margins for treatment of cutaneous malignant melanoma.
- Sentinel node biopsy in persons with melanoma with a Breslow depth of 1.0 mm or greater is useful for determining staging and prognosis.
- Melanoma survivors should receive annual clinical skin examinations and be counseled about using sun protection and recognizing potentially malignant skin lesions.

These recommendations are provided only as assistance for physicians making clinical decisions regarding the care of their patients. As such, they cannot substitute for the individual judgment brought to each clinical situation by the patient's family physician. As with all clinical reference resources, they reflect the best understanding of the science of medicine at the time of publication, but they should be used with the clear understanding that continued research may result in new knowledge and recommendations. These recommendations are only one element in the complex process of improving the health of America. To be effective, the recommendations must be implemented. As such, physicians require continuing medical education to assist them with making decisions about specific clinical considerations.

Resources: Evidence-Based Practice Recommendations/Guidelines/Performance Measures

- AAFP Clinical Preventive Services Recommendations: Skin Cancer Screening¹⁶
- AAFP Behavioral counseling to prevent skin cancer: recommendation statement¹⁸



- Cutaneous malignant melanoma: a primary care perspective²²
- Clinical diagnosis of melanoma²³
- Atypical moles: diagnosis and management³²
- Dermoscopy for the Family Physician³¹
- Diagnosis and treatment of Basal cell and squamous cell carcinoma²⁴
- Dermatologic Conditions in Skin of Color: Part I. Special Considerations for Common Skin Disorders³
- Guidelines of care for the management of primary cutaneous melanoma. American Academy of Dermatology³³
- NCCN Melanoma Clinical Guidelines³⁴
- Surveillance of the Adult Cancer Survivor⁶
- 12 errors to avoid in coding skin procedures²⁵
- Health Coaching: Teaching Patients to Fish³⁵
- Simple tools to increase patient satisfaction with the referral process³⁶
- Engaging Patients in Collaborative Care Plans³⁷
- Encouraging patients to change unhealthy behaviors with motivational interviewing³⁸
- FamilyDoctor.org. Skin Cancer | Overview (patient resource)³⁹

References

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