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Creating an Effective Education Pamphlet on Sun Protection and Skin Cancer Prevention

Alexandra Brown

Danbury, CT: Brookfield Family Practice

July 2015

Dr. Cornelius Ferreira

Problem Identification and Description of Need

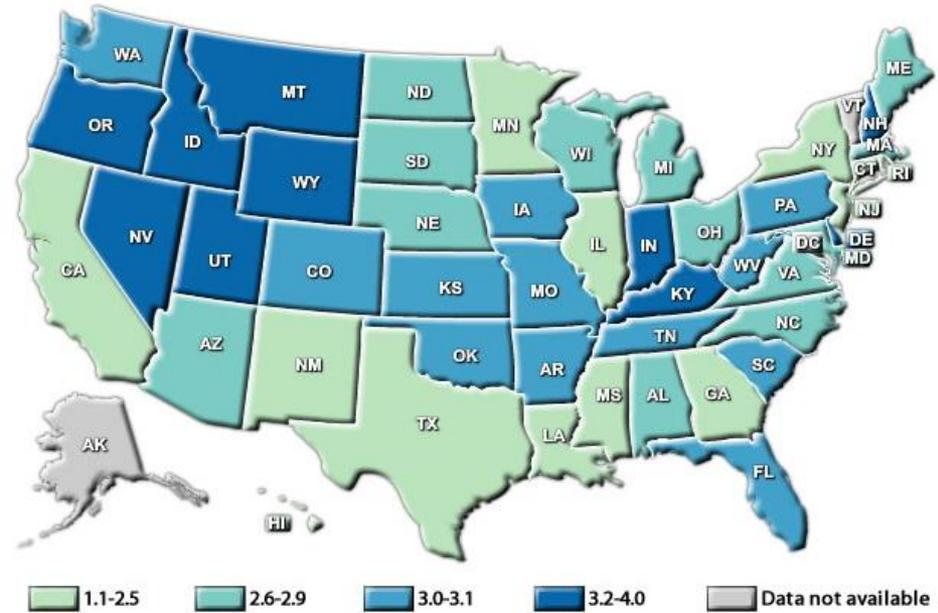
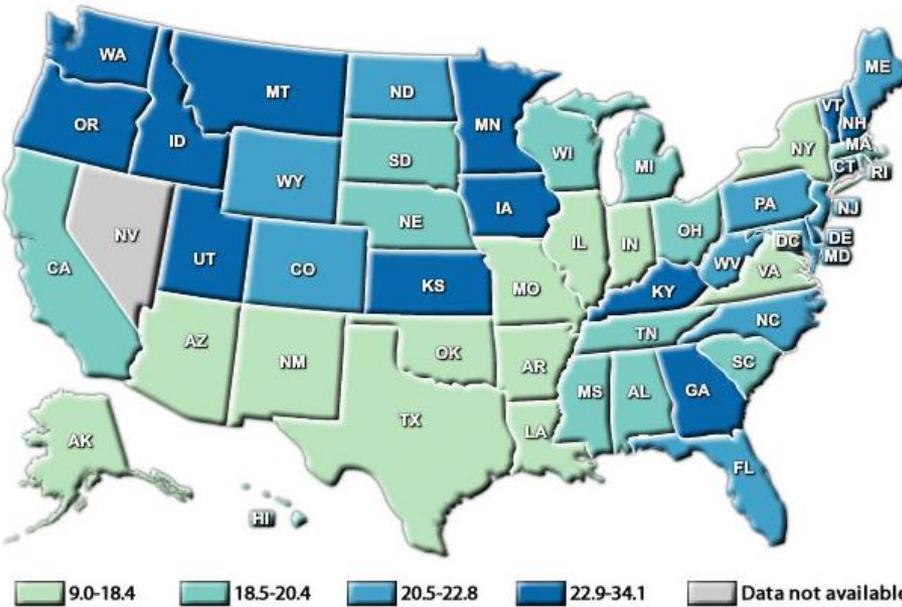
- Melanoma and other **skin cancers are increasing in incidence** in the US.
 - One American dies of melanoma almost every hour³
 - In Connecticut (CT), incidence of melanoma is higher than the national average¹²
- **In CT, there are 20.5 - 22.8 new cases of melanoma annually**, with 1.1-2.5 deaths, per 100,000 people.¹²
 - This equals approximately **820 new cases and 90 deaths annually***
- The use of sun protection and prevention skills are the only ways to prevent sun damage and subsequent skin cancers.
- **Dr. Cornelius Ferreira reported that his office** sees many patients with evidence of sun damage and/or skin cancer and the office **lacks an educational pamphlet for patients** on the risks of sun exposure and skin cancer.
- **The distribution of an educational pamphlet to patients in the spring and summer could address sun damage prevention**, even if the topic were not covered in the appointment. Additionally, if prevention is discussed with doctor, the pamphlet could reinforce this message.

* based on 2014 CT population census

Melanoma Incidence and Death Rates

Melanoma of the Skin
Incidence Rates* by State, 2011†

Melanoma of the Skin
Death Rates* by State, 2011†



CT incidence: 20.5 - 22.8

CT death rates: 1.1-2.5

Interestingly, this data demonstrates that rates of melanoma are high in CT, but death rates are low. This difference may be attributable to good screening measures.¹²

*Rates are per 100,000 and are age-adjusted to the 2000 U.S. standard population.

Public Health Cost and Unique cost considerations in host community

- In the US, medical costs to treat skin cancer are estimated between \$2 and \$8 billion annually, with costs rising each year^{3,7}
- The increase in annual spending has been more rapid for skin cancers than for other cancers, suggesting that the economic burden is particularly concerning⁷
 - Primary prevention has been shown to reduce skin cancer incidence, mortality, and healthcare expenditures⁹
- Guy et al. noted that melanoma treatment cost varies by phase of care and stage at diagnosis and that these costs warrant strategies to enhance primary and secondary prevention:
 - Patients diagnosed with late-stage disease and in initial and terminal phases of care had the highest cost
 - The outpatient setting had the highest aggregate treatment costs
 - The inpatient setting had the highest per patient treatment costs
- Ekweume et al. estimated the following costs associated with mortality from melanoma (from 2000-2006)⁵:
 - 13,349 years of potential life lost
 - Individual loss of 20.4 years of potential life (YPLL)
 - Annual productivity loss of \$3.5 billion
 - An average of \$413,370 in personal forgone lifetime earnings
 - Higher YPLL and total productivity losses among non-Hispanic whites compared with non-Hispanic blacks and Hispanics
- In CT, the majority population is white (81.9%). Fair-skinned people are at increased risk of developing skin cancers, particularly melanomas¹¹

Community perspective on issue and support for project

- Goals of interviews:
 - To determine crucial information to include in the pamphlet
 - To determine provider perspectives on sun damage in this community
- Method: Interviewed 6 local providers (MDs, APRNs) at:
 - Brookfield Family practice, Advanced Dermcare, Dermatology Associates, and Dermatology of Danbury
- Results:
 1. When given the option of “high, moderate, or low” to characterize the need for education in this community:
 - **50%** of providers chose **high**; **50%** chose **moderate**
 2. When asked to estimate the cost of treating skin cancer in their community,
 - **3/6** providers estimated **basal cell is most costly**, due to high incidence
 - **2/6** providers estimated **melanoma is most costly**, due to associated excision, follow-up with oncologists, and possible chemotherapy
 - **1** provider estimated that basal is **most costly overall due** to incidence, but that **melanoma costs most per lesion**, due to associated oncology costs

Community perspective on issue and support for project

- Results, cont.

3. When asked what 4 key elements patients should know to protect themselves, providers stated:

- **Use of protection (15/24 responses)**
 - **Responses included:** liberal use and reapplication of SPF30+, sun/tanning bed avoidance, using lip protection, wearing protective clothing
- **Knowledge about skin cancer/damage (6/14):**
 - **Responses included:** awareness that damage occurs 12 mos/year and is both cosmetic and carcinogenic, that tanning is not protective, and that shade is inadequate for full protection; and knowledge of true melanoma sequelae, family/personal history risk of cancer
- **Inspection of skin (2/24):**
 - **Responses included:** getting annual skin checks and knowing definitions of ABCDE

4. When asked for 1 “must” to be included in pamphlet, providers stated:

- **Inspection of skin (3/6):**
 - **Responses included:** patients should not delay in seeking medical care for a lesion, should know ABCDE, should get annual skin screenings
- **Protection (2/6):**
 - **Responses included:** patients should use and reapply SPF30+ and never get burned
- **Knowledge (1/6):**
 - **Responses included:** Patients should know the severity and prevalence of melanoma today

5. When asked the most effective way to prevent sun damage as a clinician, 3/6 providers believed supportive counseling to be best (compared with scare tactics, or evidence-based medicine)

Intervention and Methodology

- Goals of Intervention:
 1. To have people “take away” the “musts” and “key elements” identified by providers
 2. To make a pamphlet that is easy to read and informative
 3. To create a pamphlet that can be easily printed by the office and that could be entered into the EMR in the future
- Methodology:
 - Using recommendations compiled in interviews, created a pamphlet to distribute at Brookfield Family Practice
 - Focused primarily on communicating the “1 must” from each provider, as well as the “key elements” that they identified
 - Included information garnered from CDC, AAFP, and AAD

Pamphlet Front

SUMMER SUN PROTECTION!

Your skin deserves the
best – treat it well!

HOW DO I PROTECT MYSELF?

Seek SHADE!

Not only is it cooler, it prevents sunburn. It is impossible to get a safe tan!

Wear protective clothing

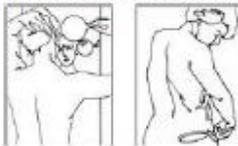
Long sleeves and pants protect you best
Don't forget wide brimmed hats and sunglasses –
ears and your eyes can get sunburned!

Use and REAPPLY SPF30+

SPF 15 isn't enough! Apply SPF30+ LIBERALLY on
your skin and lips! And REAPPLY every 90 mins.
REDUCES YOUR RISK OF MELANOMA BY HALF

Examine your skin

Check your back, front, arms, backs of hands, and
use a mirror to look at the backs of your legs and
feet, neck, and buttocks.



RECOGNIZING SKIN CANCER

Skin cancer is best handled when found and
treated EARLY, so we want to help you
recognize early signs so you can get to the
doctor and treat it early!

There are 3 main types of skin cancer we worry
most about

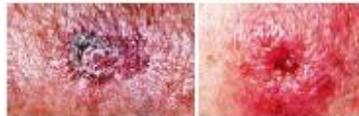
Basal cell carcinoma

Slow growing, rolled edges, central ulcer



Squamous cell carcinoma

Scaly red patch or open sore, can start
looking like dry, red skin



Malignant melanoma

Asymmetrical, irregular borders, multi-
colored or very dark, larger than a pencil
eraser, evolves in size/color



MAJOR TYPES OF SKIN CANCER

Skin cancer is scary. The best approach is not to
get it in the first place! So cover up in the sun!

But, the more you know about skin cancer, the
better you can protect yourself

Basal cell carcinoma

Most common type of skin cancer
Due to long-term sun exposure
HIGHLY TREATABLE, especially caught early

Squamous cell carcinoma

2nd most common type of skin cancer
Due to long-term sun exposure
Can start as Actinic Keratosis, looks like dry
skin/bump, often appears on LIPS
TREATABLE when caught early

Malignant melanoma

3rd most common type of skin cancer
MOST DANGEROUS
Due to sunburns, especially blistering
(1 blistering burn in childhood = 2x melanoma risk)
Can begin suddenly, from an old mole, or in eye
More common in people with many moles,
fair skin, blue eyes, light hair, who can't tan
If you notice a dark, odd mole, see Dr. ASAP



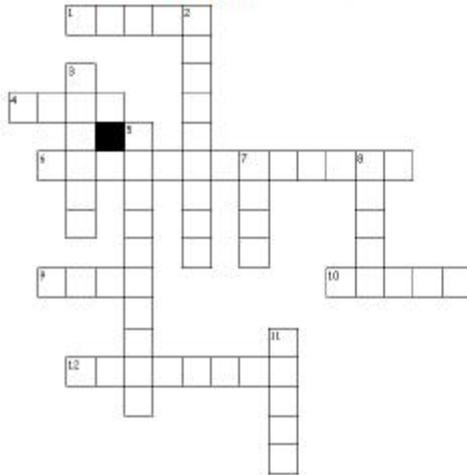
Basal

Squamous

Melanoma

Pamphlet Back

FUN IN THE SUN!



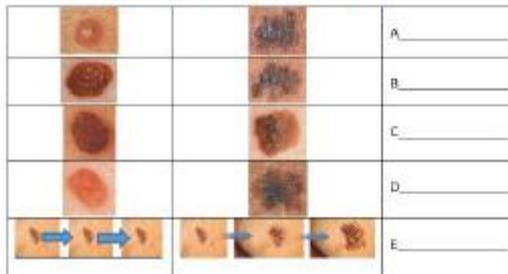
Across

1. What you seek to best protect your skin
4. skin tone most at risk for melanoma
6. who to see when you have an abnormal mole
9. baseball hats don't protect these from the sun
10. height of sun strength
12. most dangerous skin cancer type

Down

2. the E in ABCDE
3. minutes until your next sunscreen application
5. how to get a safe tan
7. often forgotten place for sun damage
8. What is the minimum protection you should wear?
11. most common kind of skin cancer

KNOW YOUR ABCDE's!



FAQs

When is the sun strongest?

- Stay out of the sun between 10am and 3pm

What do I do if I am worried about a mole?

- Call your family doc or dermatologist immediately! We want to hear from you!

Doesn't a base tan protect me?

- **NO TAN OR COLOR CHANGE IS SAFE!** It is all an indication of sun damage

Can't I use tanning beds to get Vitamin D?

- Tanning beds are especially risky (75% melanoma risk). **NEVER TAN!**

AND DON'T FORGET:

SUN DAMAGE CAUSES SKIN AGING!

Without SPF30+ or seeking shade, you can see the damage sun does to your skin over time:
Truck driver who sat with this side to window



ABCDE'S OF MELANOMA

Keep these in mind when doing self-exams and call your doctor if you notice any of the following signs

Asymmetry



BENIGN

MALIGNANT

Borders that are irregular



BENIGN

MALIGNANT

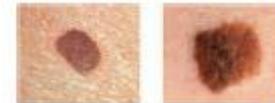
Color variations inside



BENIGN

MALIGNANT

Diameter larger than pencil eraser



BENIGN

MALIGNANT

Evolution or changing size/shape



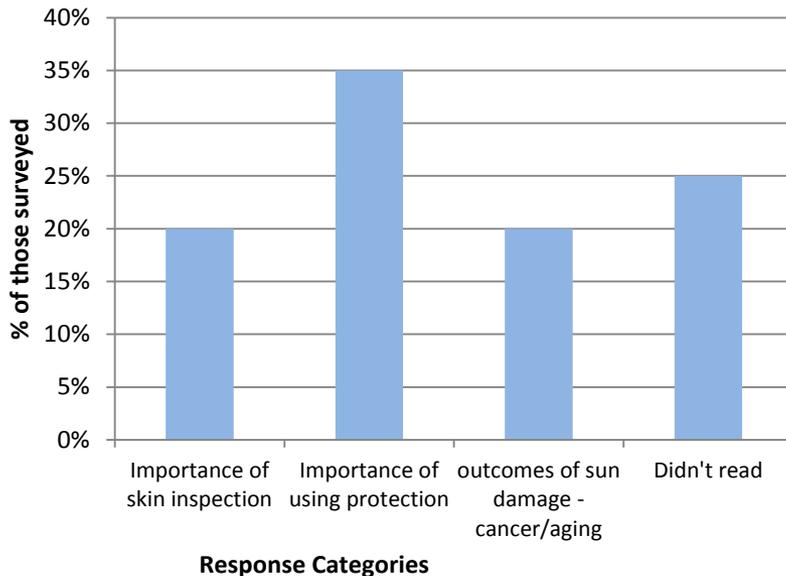
Sources: aad.org; wafp.org; skinancer.org; NEJM.org

Results/Response

- Copies of pamphlet were printed and given to 20 individuals – both patients at BFP and BFP office staff (MAs, LPNs).
- Each individual was asked: “What was the biggest take-away you got from this pamphlet?”
- Individual responses to this question were grouped into the following broad categories:
 1. Respondent learned importance of using protection (SPF, clothing, etc.)
 2. Respondent learned importance of skin inspection
 3. Respondent learned about outcomes of skin damage/skin cancer
 4. Respondent didn’t read pamphlet
- In order to determine if the intervention achieved its goal of communicating “key elements” or the “musts” of the providers, these broad categories were matched with the provider categories:
 1. Respondent learned importance of using protection (SPF, clothing, etc.) = Protection
 2. Respondent learned importance of skin inspection = Inspection
 3. Respondent learned about outcomes of skin damage/skin cancer = Knowledge
 4. Respondent didn’t read pamphlet

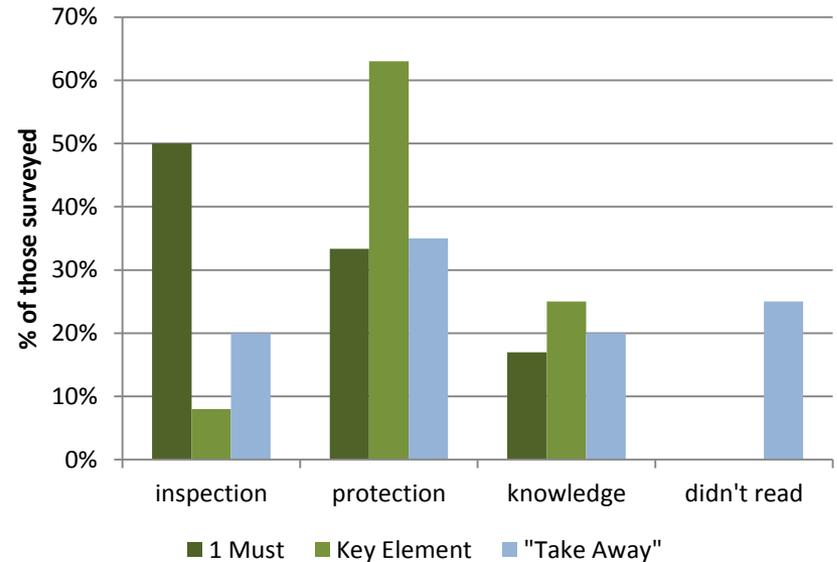
Results

Respondents' "Take Away" from the pamphlet



35% of respondents stated their biggest "take away" was learning the importance of sun protection, followed by skin inspection and learning more about aging/cancer, both at 20%. However, 25% of respondents didn't have time or chose not to read the pamphlet.

Comparison of provider's "1 Must," "Key Elements," and respondents' "Take Away"



50% of providers chose their "1 must" to be to communicate the importance of inspection. The majority of providers (63%), however, identified "protection" as a "key element" of education.

Overall, more respondents "took away" messages of protection than inspection from the pamphlet.

Evaluation of effectiveness and limitations

- Quantitative evaluation of effectiveness
 - **Goal assessment:** Does pamphlet communicate the “musts” of the providers? Does it communicate the “key elements” of the providers?
 - **Conclusion:**
 - Because both providers and respondents were told to give free-form answers, these responses were categorized after collection in order to compare goals and outcomes. **Broad categories of “Protection,” “Inspection,” and “Knowledge,” allowed for this comparison.**
 - The **pamphlet best communicated elements of “protection”** to patients (based on 35% of respondents reporting that as their major “take away”), **followed by equal responses for elements of “inspection” and “knowledge.”**
 - **In an initial evaluation, the goal of communicating providers’ “musts”** (inspection category) **and “key elements”** (protection and knowledge categories) **was achieved.**

Evaluation of effectiveness and limitations

- Qualitative evaluation of effectiveness
 - Copies of pamphlet were given to providers at Brookfield Family Practice for qualitative feedback on pamphlet appearance and usefulness. Responses are below:
 - “It’s a very educational skin cancer prevention pamphlet.” Dr. Ferreira
 - “It is visually very well done, clearly delineating each point.” APRN McCoy
 - “This is the best brochure on skin I have ever seen.” Dr. Farrell
 - “It is both comprehensive and concise. I would definitely use it. Even better in color.” Dr. Mascia
 - “It is very comprehensive and useful. I will use it.” Name withheld, family practice physician
- Limitations
 - Limited sample size of providers for input on critical elements to include in pamphlet, so perspectives are subjective
 - Limited sample size of office staff and patients for feedback
 - Patients did not have time to review pamphlet before appointments
 - Categorizations were determined after responses were received and interpreted by the author

Recommendations for future interventions/projects

- School-based education:
 - The community need for sun damage education was considered moderate to high by all those interviewed, so more education is needed, particularly of younger patients
- Barriers to education:
 - Patients did not have time to read the pamphlet in the waiting room. Are there ways to create an app or more convenient ways of disseminating information?

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Interview consent form

- Thank you for agreeing to be interviewed. This project is a requirement for the Family Medicine clerkship. It will be stored on the Dana Library ScholarWorks website. Your name will be attached to your interview and you may be cited directly or indirectly in subsequent unpublished or published work. The interviewer affirms that he/she has explained the nature and purpose of this project. The interviewee affirms that he/she has consented to this interview.

Yes / No