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Skin Cancer, Skin Biopsies and Mohs Surgery: Patient Education

Negar Esfandiari

Larner College of Medicine at the University of Vermont

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Skin Cancer, Skin Biopsies and Mohs Surgery: Patient Education

Negar Esfandiari

Mentors: Dr. Whitney Calkins, Dr. Katherine Mariani and Dr. David Reisman

Location: South Burlington Family Medicine

Rotation 5, November 2021

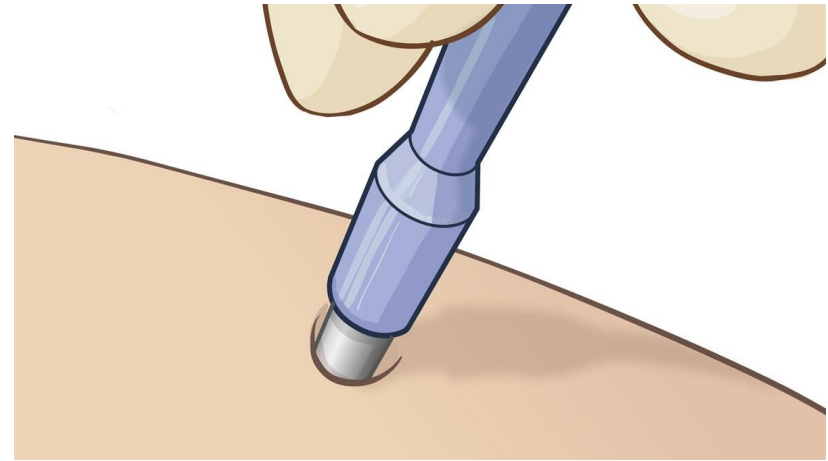


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The University of Vermont

LARNER COLLEGE OF MEDICINE

Problem Identification

- According to the *American Academy of Dermatology Association*, the most common cancer in the USA is skin cancer, with 20% of the population developing skin cancer at some point in their lifetime (about 9500 new cases each day)¹.
- There are about 3.6 million cases of Basal Cell Carcinoma and 1.8 million cases of Squamous Cell Carcinoma diagnosed annually in the USA².
- According to the CDC, there were 83,996 new cases of melanoma diagnosed in the USA in 2018 with 8199 related deaths³. While melanoma is less common than Basal Cell and Squamous Cell Carcinoma, it has a higher mortality rate.
- The use of sunscreen is important in preventing skin cancer. Up to 80% of one's sun exposure can occur prior to the age of 18⁴. However, according to the CDC, only 15.5% of high school students reported regular use of sunscreen³.
- In 2012, in the USA, over 876,000 Mohs surgery were performed on skin cancers⁵.
- Thus, given the high incidence of skin cancers, many skin biopsies are performed annually both at Primary Care and Dermatology offices. Many patients are not aware of what the different types of skin biopsies are, as well as what Mohs Surgery is. The goal of this project was to educate patients who have concerning skin lesions with a patient-friendly handout explaining the different types of skin biopsies and Mohs surgery.



Photos: <https://www.everydayhealth.com/skin-cancer/what-are-the-different-types-of-skin-cancer/> and <https://www.melanomanetwork.ca/types-of-hcc/>

Public Health Cost in Vermont and Chittenden County

- 5 million people are treated for skin cancer annually in the USA, costing more than \$8 billion (with about \$4.8 billion for the treatment of non-melanoma skin cancer and about \$3.3 billion for the treatment of melanoma) ^{1,3}.
- It is estimated that by 2030, the annual cost of treating new melanoma cases will triple⁶.
- Vermont has one of the highest rates of melanoma in the USA (Figure 1) ³.
 - In 2021 alone, 380 cases of melanoma have been reported in VT, making it the 4th most common cancer in VT (about 9% of newly diagnosed cancers) ⁷.
- The South Burlington Family Medicine office is in Chittenden county, where there is moderately high levels of melanoma incidence compared to other Vermont counties (Figure 2) ³.
- When skin cancer is diagnosed early in the disease course, there are better treatment outcomes/prognosis and costs will be lower (both direct and indirect)⁸.
- The direct cost to treat Stage I melanoma is 10x less than Stage IV melanoma (Table 1)⁸.
- It is important for patients to discuss any concerning skin lesions they have with their primary care providers. Patients should be aware that most skin cancers are diagnosed by skin biopsies, and it is important to provide patient education regarding the different types of commonly performed skin biopsies.

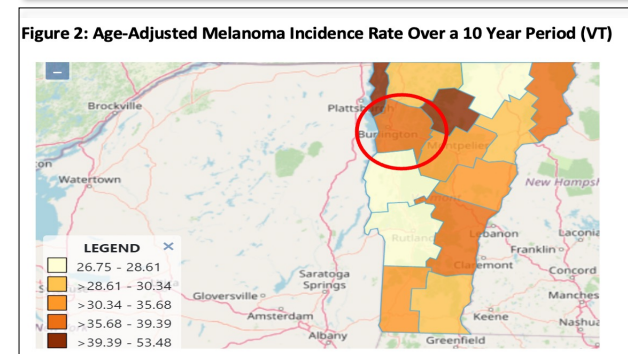
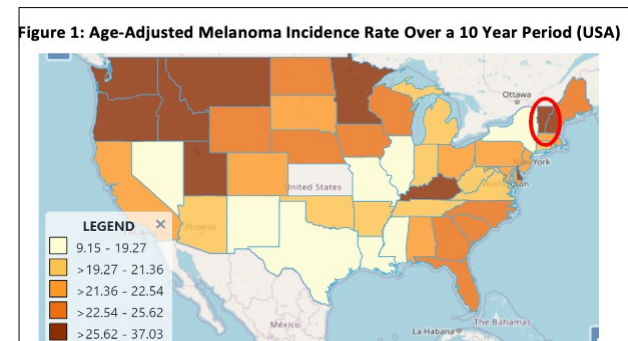


Table 1 Average costs in the first year after diagnosis (second column) and incidence rates by stage at diagnosis (third column) for malignant melanoma based on 2008 data as reported in [19]. The incidence rates are given for stages I-IV and add up to 100%.

Stage	Average Costs, \$	Incidence Rate, %
0	984	NA
I	4259	52.1
II	12,566	32.6
III	39,761	9.7
IV	42,303	5.6
IV (recurrent)	39,281	NA

Community Perspective

Stephanie Marceau, LPN, South Burlington Family Medicine

Q1: Do you think patients know what to look for in concerning skin lesions (such as the ABCDE's of melanoma?)

A1: For the most part...I think they definitely notice if areas on their skin change and often rely on "Dr. Google" to determine if there is something to worry about.

Q2: Do you think patients know what a skin biopsy is, and the different types of skin biopsies available?

A2: I think they have a general idea, but probably overall don't realize there are different types.

Q3: What questions do patients most often have about skin biopsies?

A3: I'm not entirely sure as I think they usually save those questions for the provider.

Q4: Are patients familiar with Mohs surgery?

A4: Yes, I think many of them are, as we often see them after they have had it done and they seem to be fairly comfortable with having had it done.

Q5: What do you wish patients knew about their skin care/health?

A5: Probably the importance of water and sunscreen! I think many people (myself included) forget that hydration and basic skin protection can have a big effect on their skin health.

Dr. David Reisman, South Burlington Family Medicine

Q1: Do you think patients know what to look for in concerning skin lesions (such as the ABCDE's of melanoma?)

A1: Sometimes.

Q2: Do you think patients know what a skin biopsy is, and the different types of skin biopsies available?

A2: No.

Q3: What questions do patients most often have about skin biopsies?

A3: Will it hurt? Can I go in the hot tub afterwards? When will I get the results? Will it leave a scar?

Q4: Are patients familiar with Mohs surgery?

A4: Generally, no.

Q5: What do you wish patients knew about their skin care/health?

A5: To pay attention to their own skin and let us know when they notice changes.

Community Perspective (continued)

Dr. Dennis Beatty, *South Burlington Adult Primary Care*

Q1: Do you think patients know what to look for in concerning skin lesions (such as the ABCDE's of melanoma?)

A1: Many patients are at least partially familiar with the ABCD's of melanoma but are not always able to apply them. I would rather patients err on side of caution, even though most of the moles they bring to my attention are SKs [seborrheic keratosis].

Q2: Do you think patients know what a skin biopsy is, and the different types of skin biopsies available?

A2: I think people understand "biopsy" as sampling the lesion, but most do not understand types of biopsies (and certainly reasons to pick one over the other).

Q3: What questions do patients most often have about skin biopsies?

A3: Patients ask about cosmetic result and also about wound care after the procedure.

Q4: Are patients familiar with Mohs surgery?

A4: Probably 20% or so know what Mohs surgery implies (have had it themselves, a family member had it, etc.)

Q5: What do you wish patients knew about their skin care/health?

A5: I wish patients knew that only 5% of melanoma cases are familial. That the risk of skin cancer is a cumulative lifetime risk, so better skin protection later in life does not always remove risk.

Intervention and Methodology

- I designed a patient handout: 'Skin Biopsy and Mohs Surgery' (next slide). In my handout, I included photos of Squamous Cell Carcinoma, Basal Cell Carcinoma and Melanoma. I provided descriptions of the most common types of skin biopsies: shave, punch and excisional biopsies. I also provided a description of Mohs Surgery.
- I received feedback on my handout from different providers and office staff at the South Burlington Family Medicine office, as well as from a provider at the South Burlington Adult Primary Care office.
- I placed copies of this handout at the South Burlington Family Medicine office patient check-in/waiting area, and also distributed copies to the providers in the office.
- My handout will be uploaded to the "Resources" Tab in Epic, for future use by all providers at the University of Vermont Health Network.

Intervention and Methodology

Do You Have a Concerning Skin Lesion? Show Your HealthCare Provider at Today's Visit!

What would be some examples of concerning skins lesions?



Photos: <https://www.everydayhealth.com/skin-cancer/what-are-the-different-types-of-skin-cancer/> and <https://www.melanomanetwork.ca/types-of-bcc/>

If you have a concerning skin lesion, the next step may be to take a biopsy. A skin biopsy takes out a part/all of the skin lesion; it is an office procedure performed after numbing the skin and is well tolerated by most patients. After the biopsy is completed, the specimen is sent to the lab to be evaluated under a microscope and stained with special dyes to assess the histology. It can take 1-2 weeks for the results to come back.

There are 3 main types of skin biopsies: **shave biopsy**, **punch biopsy** and **excisional biopsy**. **Mohs surgery** is available for more complicated lesions, and this procedure will be done at the Dermatology Clinic.

Shave Biopsy

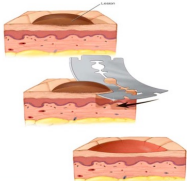


Photo: <https://www.ncbi.nlm.nih.gov/books/NBK470457/>

A shave biopsy is used when there is a superficial skin lesion or non-melanoma skin cancer that needs to be biopsied and removed. A blade is used to cut underneath the lesion for removal of the tissue. There is less depth to the amount of skin tissue that will be removed using this biopsy technique, and typically no stitches are placed [1, 2].

Punch Biopsy

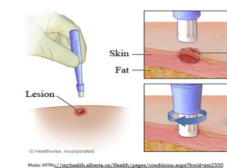


Photo: <https://www.ncbi.nlm.nih.gov/books/NBK470457/>

In a punch biopsy, a part, or potentially all of, your skin lesion will be removed using a disposable punch instrument. This method removes 4-5+ mm of skin tissue using a downward rotational force and may require a stitch to close the area afterwards. This method is often used to biopsy inflammatory skin conditions, or very large pigmented lesions [1, 2].

Excisional Biopsy

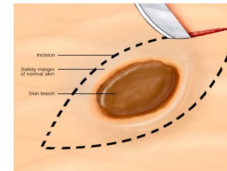


Photo: <https://www.ncbi.nlm.nih.gov/books/NBK470457/>

Excisional biopsies are performed when there is concern for melanoma, squamous cell or basal cell carcinoma. The goal is to completely remove the lesion; thus, an extra area of skin is taken all around the lesion, called the 'margin', to be assessed by the lab to ensure no cancer cells have remained. Excisional biopsies are thicker in depth and may extend down to subcutaneous tissue. An ellipse is drawn on the skin around the lesion and taken out with a scalpel; afterwards, the skin is stitched closed [1, 2].

Mohs Surgery

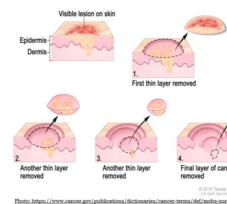


Photo: <https://www.ncbi.nlm.nih.gov/books/NBK470457/>

Mohs surgery is used to remove skin cancers located on the face, hands and sensitive body areas. This is an outpatient surgery conducted after numbing the skin. The lesion, along with a small border, is excised in layers. Then the tissue is visualized microscopically in real time to assess the borders to ensure all cancer cells have been removed. This process of evaluating the tissue takes about 15-30 minutes. If need be, more skin will be removed, until negative margins are attained. Then the area will be stitched closed [3].

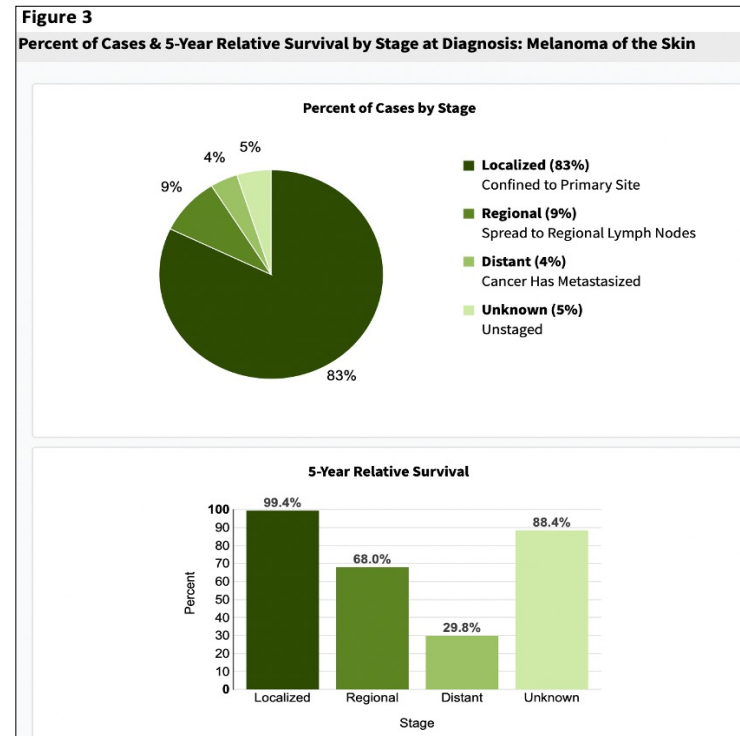
Talk to your provider today if you have further questions!

References:

1. Nischal, U., Nischal Kc, & Khopkar, U. (2008). Techniques of skin biopsy and practical considerations. *Journal of cutaneous and aesthetic surgery*, 1(2), 107-111. <https://doi.org/10.4103/0974-2077.44174>
2. Ramsey M., Rostami S. Skin Biopsy. [Updated 2021 Jun 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK470457/>
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Results/Data/Response

- I shared my 'Skin Biopsy and Mohs Surgery' handout with our office providers and staff and received positive feedback, including that the handout is informative, easy to understand and important for patient education.
- I distributed the handout in the office check-in/waiting area and to office providers and staff. The handout was well received.
- The handout is also being uploaded to the 'Resources' Tab in Epic, for further use by all providers in the different UVM Health Network clinics.
- It is important for patients to discuss any concerning skin lesions they might have with their providers, as studies have shown that there is a significantly higher 5-year melanoma survival rate when diagnosed early—99.4% when the disease is localized (Figure 3)¹².



Evaluation of Effectiveness and Limitations

- Patient education is important, especially prior to medical procedures, such as skin biopsies. My 'Skin Biopsy and Mohs Surgery' handout aimed to help increase skin cancer awareness and inform patients of the different types of skin biopsies commonly performed, as well as what Mohs Surgery is.
- Given the time constraints during our 6-week rotation, there were certain limitations that I would like to address for future studies:
- It is important to assess how effective my handout was in providing patient education on this topic. In order to have an objective assessment, I designed a Skin Biopsy Knowledge Survey. I would have liked to present this survey to patients presenting to the South Burlington Family Medicine office prior to their visits. For patients who indicated that they would like to receive educational materials about skin cancer/biopsies, I would have liked to interview them after they had a chance to read my handout. I would ask for patient feedback to revise the handout accordingly. For example, what additional information would they have suggested the handout to include, what further questions do they have for skin biopsies, etc.? Then, I would administer a post-handout survey to assess patient knowledge (around the different types of skin biopsies, Mohs surgery and the importance of having a timely diagnosis). I would compile this information to better improve the handout's content and the way the handout is distributed in the office.
- After distribution of the handout, it would be interesting to see if the number of patients presenting with a skin concern at the Family Medicine office increased. 7



Skin Biopsy Knowledge Survey

The completion of this survey is completely voluntary. No identifying information will be collected, and your responses will remain anonymous. Thank you.

- Age (please circle):

≤19	20-39	40-59	60-79	80+
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- Gender (please circle):

Male	Female	Other	Prefer not to say
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- Education (please circle):

Less than High School	High School Diploma	Some College	College Degree	Post-Graduate Degree
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- Do you have any concerning moles or skin lesions (please circle)?

Yes	No	I am unsure
-----	----	-------------
- Have you ever been diagnosed with skin cancer (please circle)?
 (Yes please specify):

	No
--	----
- Have you ever had a skin biopsy (please circle)?

Yes, more than once	Yes, once	No
---------------------	-----------	----
- Are you familiar with the different types of skin biopsies (please circle)?

Yes	Somewhat	No
-----	----------	----
- Do you know the importance of a skin biopsy in diagnosing skin cancer (please circle)?

Yes	Somewhat	No
-----	----------	----
- Are you familiar with Mohs surgery (please circle)?

Yes	Somewhat	No
-----	----------	----
- Would you like educational materials about skin cancers and the different types of biopsies (such as a handout, presentation, phone app, or online resource) (please circle)?
 (Yes please specify):

	No
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Esfandiari; November 2021

Recommendations for Future Projects

- Implement the two surveys discussed in the previous slide to assess how to further improve the handout/make additional educational material (videos, group education sessions, brochures, etc.) to increase patient awareness and knowledge of skin cancer. Providers can print or send via MyChart the 'Skin Biopsies and Mohs Surgery' handout for patients who request more information regarding skin cancer diagnosis and before having a skin biopsy.
- Another future project would be to do a retrospective study assessing how many skin biopsies have been performed at the South Burlington Family Medicine office over the last year, and of those, how many were diagnosed to be skin cancer and at what stage the skin cancer was diagnosed.

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12. Melanoma of the Skin - Cancer Stat Facts [Internet]. SEER. 2020 [cited 11 November 2021]. Available from: <https://seer.cancer.gov/statfacts/html/melan.html>

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.