Common Skin Rashes

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FAMILY MEDICINE CLERKSHIP- PORTER PRIMARY CARE

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Problem Identification

- Aside from skin cancer, there are many reasons a patient might see their PCP about skin concerns.
- Skin rashes are a common skin complaint that many patients may often be embarrassed to seek help for
- According to the *American Academy of Dermatology*, 84.5 million Americans — one in four — were impacted by skin disease
- There are many common skin rashes seen during all seasons in Vermont, many of which are not emergencies but bothersome enough to seek care. These are easily treatable in the outpatient setting.
- Poison ivy, poison oak, and poison sumac are the most common causes of clinically diagnosed allergic contact dermatitis in North America. ~ 50% to 75% of the US adult population is clinically sensitive to poison ivy, oak, and sumac
- Vermont's 3-year average incidence rate for Lyme disease is the second highest in the U.S.A.'s. The rate of tickborne diseases in Vermont is increasing
- According to the *American Academy of Dermatology*, ~1 in 10 Americans have eczema
- Tinea corporis is the most common dermatophytosis, it occurs worldwide and has a lifetime acquisition risk of 10-20%
- **The goal of this project is to educate patients regarding common skin rashes and provide information and reassurance regarding treatment and product recommendations.** There are many more skin rashes that are extremely common, but the scope of this project was limited to 4 of the most common rashes.

What is the Need?

- Skin conditions account for a relatively small fraction of all ED visits (3.3%), and approximately 6%of visits to all physicians. Only 40% of these patients are seen by dermatologists
- In primary care settings, up to one fourth of visits may involve skin disorders. Primary care providers often then refer patients to see a dermatologist, as necessitated by insurance.
- According to the American Academy of dermatology, many medical specialties, such as dermatology, are expected to see a shortage ranging from 3,800 to 13,400 physicians.
- Over 40% of the US population lives in areas that are underserved by dermatologists, which means even longer wait times to be seen and treated
- As such, **primary care providers often become the first point of contact for most skin complaints**
- Many skin conditions, like common rashes, do not require a dermatologist to diagnose and treat
- According to the American Academy of Dermatology, skin diseases cost the US health care system $75 billion in medical, preventative, prescription and non-prescription drug costs

Public Health Cost in Vermont

- According to US News Health, there are 35 dermatologists in Vermont, compared to 435.9 full time primary care physicians in 2018, most of who are concentrated in Chittenden County
  - In 2018, Vermont had 1 dermatologist for every 44,500 residents
- Vermont has longer wait times for specialists than peer states: 109 days for dermatology in 2022
- It is expensive to see a specialist and seek care for skin-related conditions
  - The average income for individual in Vermont is $32,959
  - The average cost of dermatology appointment in Vermont $85-$133 with insurance
  - The average cash price for benign skin lesion removal care in Vermont is $314 at outpatient hospital
  - Patients who need to see a dermatologist may also need a referral from a primary care doctor or authorization from their insurance provider first, which is time cost as well

The cost of common skin rashes

- Although the majority of research concerning the cost of skin-related concerns in the US are focused on skin cancer, there is a substantial cost to the treatment of rashes and non-skin cancer skin concerns as well
- According to a survey of 1,118 people living with atopic dermatitis conducted by the National Eczema Association (NEA), People, the median out-of-pocket cost for their treatment averaged about $600 a year, 42 percent of Americans spend more than $1,000 per year to manage their atopic dermatitis, and 8.5% of survey participants reported spending $5,000 or more per year.
- Poison ivy dermatitis impacts millions of people in the United State every year and results in an estimated 43,000 emergency department (ED) visits annually. Visiting an emergency department for poison ivy dermatitis costs three times more than going to an urgent care clinic or doctor's office.
- There are 476,000 cases of Lyme disease are diagnosed in the United States annually…In a prospective study among reported cases in Lyme disease–endemic states, there was a mean patient cost of ≈$1,200 (median $240) and a mean societal cost of ≈$2,000 (median $700). Patients with confirmed disseminated disease or probable disease had approximately double the societal cost of those with confirmed localized disease. The annual, aggregate cost of diagnosed Lyme disease could be $345–968 million (2016 US dollars) to US society"
- According to the CDC, there are more than 75,000 hospitalizations and nearly 9 million outpatient visits occur every year for fungal diseases, and the direct medical cost of fungal diseases is estimated to be $6.7 to $7.5 billion yearly

Community Perspective

Dr. Timothy Bicknell (TB), Vergennes Porter Primary Care, Primary Care physician
Dr. Cate Ayers (CA), Vergennes Porter Primary Care, Primary Care physician
Laura Paquette (LP), Triage Nurse, Vergennes Porter Primary Care

- **How often do you see patients with a skin-related concern?**
  - CA: I see patients and receive questions regarding skin related concerns frequently, at least a few times a week if not before, but less frequently for acute rashes
  - TB: Almost daily, although it's often a 2ndary concern during an annual wellness physical
- **Aside from skin cancers, what are the most common skin complaint do you see?**
  - CA: A lot of eczema, but also fungal rashes. In the summer there is a lot of poison ivy, parsnip
  - LP: a lot of tinea rashes, not so much erythema migrans but fresh tick bites, a lot of eczema and poison ivy/parsnip/sumac as well
  - TB: Pruritis, can be eczema, but sometimes not, or any persistent non-specific erythematous rashes, psoriasis, stasis dermatitis, picker's nodules
- **How do you see your role in treating a skin-related concern vs that of a dermatologist? What has been your experience referring a patient to see a dermatologist?**
  - CA: It is quite hard to get a patient in to see dermatology. Often we are the front line. For example, if a patient has a weird rash, we will usually do the first punch biopsy for initial rash w and consult derm to help w mgmt.
  - TB: I refer to dermatology when there are atypical symptoms, the rash is not responding to treatment, or if there is a high concern for malignancy. It takes a long time, on average 4 months for a patient to see dermatology, even during the pre-covid times.
- **What questions do patients have when they come in with a rash? Do patients know what to look for? What are patients most concerned with when they have a rash?**
  - CA: They are usually most concerned about the Itching, sometimes the appearance, sometimes if its an extensive rash as well. Some pts know what to look for, some don't, it depends
  - TB: They want to know that it's not cancer or dangerous, but also how to help with 2ndary symptoms like "going crazy from itching". Patients don't often know what to look for when it comes to distinguishing rashes vs cellulitis vs something else.
- **Have you seen any trends for lyme and tick born illnesses?**
  - CA: Consistently a lot of tick bites, but it tends to be early with just local reaction
  - TB: There has not been a big increase in lyme. I think people are more careful and aware of lyme disease now. It seems that kids don't play outside anymore as well. However Vermont still has more lyme diagnoses per capita than Lyme, Connecticut

Intervention and Methodology

- I created an informational brochure of 4 common skin rashes (eczema, poison ivy, Lyme, ringworm) along with a list of skin care product recommendations that will be available to patients at the check-in desk and in patient rooms at Porter Medical Center at the Vergennes and Middlebury locations
- These handouts would also be uploaded into the "resources" Tab in Epic, for future use by all providers at the University of Vermont Health Network
- A smart phrase (.rashhistory) was made with questions regarding rash characteristics, to be used by triage nurses and medical assistants fielding questions by patients for providers to expedite care during an already short appointment
- A smart phrase (.skincare) of the above skin care product recommendations was also made available for providers to attach to patient summaries following their visit
- Patients would review the informational brochure and materials and ask the provider if they have any questions

Eczema (atopic dermatitis)	Poison Ivy/Parsnip/Sumac	Lyme (Erythema Migrans)	Ringworm (Tinea Corporis)
			
• dry skin that sometimes swells, cracks, and even oozes fluid, may be itchy or sore • Triggers: soaps, detergents, cold and dry weather, food allergies	• Sunburn type rash, discolored skin, blistering • Reaction to sap or sunlight begins 24-48 hours after contact	• single circle that slowly spreads from the site of the tick bite • Other early symptoms: fever, chills, headache, fatigue	• ring-shaped rash that is itchy, scaly and slightly raised • The rings usually start small and then expand outward
• Emolients, wet wraps • Bathe in warm, not hot water • Use sensitive skin detergents • Topical corticosteroids, if severe see your PCP or dermatologist • https://nationaleczema.org/eczema/treatment/	• protect your skin when outside • Topical steroid cream or calamine lotion can help reduce the itch • Wash exposed skin/clothing with gentle soap/water asap • https://www.unitypoint.org/news-and-articles/summertime-rashes-poison-oak-poison-ivy-and-wild-parsnips	• Remove the tick if still attached • See your PCP for post-exposure prophylaxis for antibiotics (often Doxycycline) https://vtlyme.org/ https://www.cdc.gov/lyme/treatment/index.html	• Topical anti-fungal creams, lotions, powders (clotrimazole) • May self resolve in weeks-monthes • https://www.cdc.gov/fungal/diseases/ringworm/risk-prevention.html

Rash History smart phrase (.rashhistory)

- Where is the rash?
- How long has the rash been there? When did it start? Has it gotten worse?
- Is it itchy or painful? Burning? How would you rate it on a scale of 0/10
- Has it changed, spread? Blistering? Drainage, bleeding?
- Have you had a rash like this before?
- What does it look like? Send a photo if you can through MyChart
- What treatments have you tried? (lotion, topical steroids, Tylenol/Advil, ice)
- Any recent environmental exposures? (poison ivy, tick bite, new shampoos, etc)
- Any other symptoms? (Fever/chills, GI, musculoskeletal pains, chest pain)
- Signs to go to Urgent Care or the ER: high fevers and pain with rash, rash with expanding streaks and redness

Available in epic as:
.rashhistory

Epic→ my SmartPhrases→
Open → user: "Chen, Jennifer"→
RASHHISTORY →copy smart phrase →
go to your SmartPhrases→ New →
Paste RASHHISTORY

Skin Care Product Recommendations

Brands for sensitive skin and children:

- Drug Store Brands: CeraVe, Aveeno, Cetaphil, Vanicream, Eucerin, Neutrogena
- More $$$: Paula's Choice, LaRoche-Posay , Dermalogica, Avene, Murad
- Fragrance free products are often better for sensitive skin

Sun Protection

- Good brands for sensitive skin:
  - Blue Lizard Sensitive Mineral Sunscreen SPF 50+
  - Elta MD UV Clear Broad Spectrum
  - Neutrogena Ultra Dry-Touch Sunscreen
- Wear a sunscreen or cover skin when outside for more than 15 minutes
  - Broad spectrum protection (protects against UVA and UVB rays)
  - SPF 30 or higher
  - Water resistant
  - Reapply every 2 hours, especially after swimming or sweating
  - If sensitive skin, can use physical sunscreens instead of chemical sunscreens (contains zinc oxide and/or titanium dioxide)

For Eczema or itchy skin:

- Hydrocortisone cream (max strength over the counter is usually 1%)
- Sarna lotion
- Calamine lotion
- Eucerin, Aquaphor, CeraVe itch relief moisturizing lotion
- Anti-histamines: Allegra, Claritin, Zyrtec, Benadryl
- Oatmeal bath, humidifier, wear breathable clothing, cold compresses

For Minor Burns or Infections:

- Thin layer of Vaseline (Petroleum jelly) or aloe vera
- Antibiotic ointments: Bacitracin, Neosporin, polysporin (these may cause a minor allergic reaction so test on a small part of skin first)
  - Mupirocin ointment (prescription required)
  - Silver sulfadiazine (prescription required)
- Seek professional attention if the burn involves face/neck, causes fever or intense pain, expanding redness, is larger than the size of your palm

Signs of an allergic reaction: itching; red, swollen, blistered, or peeling skin with or without fever; wheezing; tightness in the chest or throat; trouble breathing, swallowing, or talking; unusual hoarseness; or swelling of the mouth, face, lips, tongue, or throat. Proceed to Urgent Care or the Emergency Department

Available in epic as:
.skincare

Epic→ my SmartPhrases→
Open → user: "Chen, Jennifer"→
SKINCARE →copy smart phrase → go to your SmartPhrases→ New → Paste SKINCARE

Results & Data

Feedback from the brochure, product recommendation and smart phrases were collected"

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Qualitative responses were categorized according to the following themes:

- **General Appearance**
  - CA: well organized, visually appealing, clear and concise format
  - LP: good for patients to read quickly, strong pictures
  - TB: the brochure includes the relevant and information in efficient manner
- **Utility**
  - LP: I will definitely utilize the smart phrases in triage with patient questions in MyChart. Patients often have many questions and these can be answered in a timely manner
  - CA: anything available at Epic will me utilized more but having a visual is always good for patients. More and more patients utilize MyChart these days
  - TB: a good resource for patients and providers to expedite and streamline care

Evaluation of Effectiveness

- To evaluate the efficacy of the interventions, I propose the following:
  - Implement surveys for patients coming in with rashes or skin conditions to fill out to evaluate effectiveness of the brochure and product recommendation list
  - Implement survey for providers as well for the brochure, product recommendation list and smart phrases
  - Implement the brochure, surveys and smart phrases during different seasons of the year and evaluate differences in usage and utility

Limitations

- Due to the time constraints and limited scope of project, I could only include information on 4 types of common skin rashes and include a short list of product recommendations
- Small cohort of experts interviewed without follow-up for opinions regarding results regarding ease and accessibility of use
- Difficulty and insufficient time in implementing new smart phrases for electronic medical record into regular use.

Recommendations for Future Direction

- Include more types of common skin rashes and conditions for future versions of the brochure:
  - This includes: impetigo, sunburns, psoriasis, shingles, urticaria, acne, rosacea, etc
  - As well as include photos on different skin types and ages (children), and links to online resources for those
- Combine brochure and skin product recommendations into previously existing handouts for skin cancer for more comprehensive skin education
- Interview dermatologists for their evaluation of skin product recommendations
- Distribute these materials to primary care offices all over Vermont, especially in more rural areas with less access to dermatologists
- Send brochure with annual physical forms to patients' home for more time to review information
- Perform a retrospective study assessing how many primary care providers have patients coming in for skin concerns (not just rashes but skin cancer and other lesions) and how many referrals to dermatology are made, and wait times to see dermatologists
- Offer information in various forms such as a simple video or social media post to engage patients of all ages and learning styles

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