Common Skin Disorders Seen in the Migrant Farmworker Health Care Clinic Setting

By: Michael Hinckley, MD; Steven R. Feldman, MD; PhD; Alan B. Fleischer, Jr., MD; Quirina M. Vallejos, MPH; Lara E. Whalley, BA; Sara A. Quandt, PhD; Judy Heck, FNP; Gonzalo Cabral, MD; Thanh Brooks, FNP; Mark R. Schulz, PhD; Thomas A. Arcury, PhD


Made available courtesy of Taylor and Francis: http://www.taylorandfrancis.com/

*** Note: Figures may be missing from this format of the document

Abstract:
Background: Skin diseases are common occupational illnesses for farmworkers. Migrant farmworkers commonly access rural health clinics for diagnosis and treatment of skin disease.

Purpose: To assess common skin conditions of migrant farmworkers treated in rural clinics and to describe effective and economic management of these conditions.

Methods: Seventy-nine farmworkers with a skin condition were seen as patients at 4 clinics in eastern North Carolina. A list of the most common conditions encountered was compiled and treatment methods were found in the literature.

Results: Twenty-three common conditions were identified. The most common conditions were contact dermatitis, melasma, tinea, seborrheic keratoses, and impetigo. A table of treatment recommendations was composed that can be used by clinicians in this setting.

Conclusions: Generally, the most common skin conditions seen in the migrant farmworker population in eastern North Carolina are similar to conditions found in the general population.

Keywords: Skin disease, primary care, rural, underserved, treatment

Article:

INTRODUCTION
Skin disease among migrant farmworkers is a common health problem, as with the general population. However, other factors complicate the dermatologic situation for these farmworkers. Migrant farmworkers have exposures to chemicals, wild plants, organic and inorganic dust, and fungi with which most of the general population will not be in contact. Such additional exposures can result in diverse skin problems. Furthermore, language barriers may present an obstacle to accessing health services. Migrant farmworkers also live in unhygienic conditions and have limited access to health services resulting from low income and lack of health insurance. Finally, few specialty physicians serve this population, making access to specialized dermatologic expertise problematic.

In light of the factors complicating the health care situation of these workers, the purpose was to assess the most common skin conditions of patients treated in the migrant worker health care clinic setting and to provide basic information on the management of these conditions. These treatment suggestions can provide practitioners and patients with simple and cost-effective measures to aid in treatment of these skin conditions.

METHODS
The project employed teledermatology methods among a sample of migrant clinic patients during the 2006 agricultural season to focus on medically diagnosed occupational skin diseases, their severity, and skin-related quality of life.
Sample
Recruitment was conducted in 4 community/migrant clinics in eastern North Carolina. To be recruited in the study, the participant had to be (1) currently employed as a hired laborer in farm work (this season), (2) 18 years of age or older, and (3) presenting at the clinic with a primary or secondary diagnosis of a skin disease (the skin disease did not need to be the patient’s primary complaint). The total sample included 79 farmworkers (53 men and 26 women).

Data Collection
Patient data included a questionnaire, patient information form, photographs of the affected area(s), and a dermatologist consult. After the patient information form and photographs were posted to a secure server by clinic staff, 1 of 2 board-certified dermatologists reviewed the information and then posted his consult to the same secure server. The providers reviewed the consults and tried to contact participants if changes to the diagnoses and/or treatments were necessary. Participants received a cash incentive of $20. Data collection procedures were approved by the Wake Forest University School of Medicine Institutional Review Board. Treatment options were collected using the PubMed and Google search engines and dermatology textbooks. In 2 cases, the treatment for the condition was so basic a personal recommendation was made by one of the authors (MRH). In another case, the condition was nonspecific and again a personal recommendation was made. Cost of medications was determined using Wal-Mart, Target, and drugstore.com web sites.

Data Interpretation
The 23 most common diagnoses were compiled. Diagnoses that were considered similar by a board-certified dermatologist were grouped together, and the appropriateness of the groupings was reviewed by a second dermatologist. Groupings included dermatitis (contact dermatitis, eczema, and dermatitis), tinea (tinea pedis and other tinea), seborrheic keratosis (skin tags and benign keratoses), and impetigo (bullous impetigo and nonbullous impetigo). Treatment suggestions were also compiled and reference to cost of medications was noted if possible. Costs were determined using drugstore.com and Wal-Mart’s and Target’s $4 prescription lists.

RESULTS
Ninety-eight diagnoses were made, which were then condensed into 23 diagnostic categories. One hundred thirty-three treatments were given, including treatments that were repeated.

The most common conditions were infectious and inflammatory diseases, such as contact dermatitis (including eczema, dermatitis, and contact dermatitis, 33%), melasma (12.7%), tinea (defined as any dermatophytosis except onychomycosis, 12.7%), seborrheic keratoses (6.3%), and impetigo (including both bullous and nonbullous impetigo, 5%). Treatment recommendations based on the literature (when readily available) as well as cost of individual medications are presented for the observed conditions (Table 1).

DISCUSSION
The most common dermatologic conditions encountered in the migrant farmworker clinics that were sampled include contact dermatitis, melasma, tinea, seborrheic keratoses, and impetigo. In a representative sampling of visits to family physicians in the United States, the most commonly diagnosed dermatologic conditions were quite similar and included dermatitis, pyoderma, wart, tinea infection, and epidermoid cyst. Some diagnoses in this study likely showed overlap with diagnostic terms used by the family physicians in the referenced report. One would expect that the dermatologic conditions with which migrant farmworkers present would tend to be acute disorders, such as those causing pain or pruritus, limiting the patient’s ability to work. However, the data indicate that this is not necessarily the case. Many of the observed skin problems were relatively banal, chronic conditions, seen in patients who presented for other reasons.

Certain conditions seen in the migrant farmworkers are self-limiting if the patient does not exacerbate the condition. In an effort to self-treat, sometimes the patient can make the condition more severe. Latino farmworkers have been reported to self-treat with bleach, alcohol, garlic, lemon juice, salt water, and scratching
the lesion and then applying a medicine such as cornstarch. These may cause superimposed irritant reactions that may complicate the presentation and treatment of the underlying skin disorder.

In this report, recommendations were developed for managing the common skin disorders seen in the rural health care clinic setting. Most management recommendations for these skin conditions were found in journal articles or textbooks. However, some conditions did not seem to lend themselves to specific regimens that would be readily found in the literature and were thus designated. Most of the medications recommended are generic and some can be purchased at specific pharmacies which offer a discounted rate on select prescriptions. Where inexpensive alternatives are not available, the expected cost was listed, which will allow the provider to better counsel the patient.

One limitation of this study is the relatively small number of participants. While the number is likely not sufficient to define the entire range of skin problems seen, it is adequate for identifying the common presenting cutaneous conditions. Another limitation is that treatment suggestions often vary between different providers and the suggestions reported herein are not the only way to treat the conditions. Moreover, using only 3 sources to list costs does not provide the complete range of what medications might cost.

This study provided insight into the common dermatologic conditions found in migrant farmworkers. Despite the different exposures such workers may experience compared to much of the general population, it was noted that many of the same types of conditions were encountered in a medical clinic. However, the economics of practicing in such a setting differ as some patients may lack insurance. A table has been included of treatment regimens and prices of medications that will hopefully benefit the practitioners and the farmworkers in this setting.

REFERENCES
<p>| TABLE 1. Common Skin Conditions, their Management, and Cost of Medications$^a$ |
|---------------------------------|---------------------------------|------------------|
| <strong>Medications</strong> | <strong>Recommendations</strong> | <strong>Cost</strong> |
| Acanthosis nigricans | 0.05% Tretinoin cream, 12% ammonium-lactate cream$^b$ | Type 1: May be associated with adenocarcinoma of the gastrointestinal tract and genitourinary tract, carcinomas of the bile duct, kidney, liver, bladder, thyroid. Screening questions for these can be considered. Type 3: Associated with endocrinopathies such as diabetes mellitus and screening questions should be considered. Weight loss and glucose control can help. Tretinoin 0.05% cream or 12% ammonium lactate cream can be used topically.$^b$ | Amlactin 12% lotion: $14.99 for 8 oz; Tretinoin 0.05% cream: $45.14 for 20 g |
| Acne | Topical: Benzoyl peroxide, clindamycin, salicylic acid, retinoids, erythromycin, azelaic acid$^c$ Systemic: minocycline, doxycycline, tetracycline, erythromycin, trimethoprim-sulfamethoxazole | Mild (variable number of comedones): salicylic acid, azelaic acid, benzoyl peroxide (can bleach clothing), clindamycin phosphate Mild or moderate (variable number of comedones, papules, and/or pustules): Benzoyl peroxide gel, tretinoin. Tretinoin can be applied every other night and if irritation is not problematic can be increased to nightly after 2 to 3 weeks. Moderate or severe: Tetracycline: start at 250 mg 4 times daily or 500 twice daily. Once improved decrease to 250 mg or 500 mg daily or discontinue. Not to be used in children or pregnant women; take on empty stomach. Minocycline: Start at 50 mg and then increase slowly up to 100 mg twice daily. Can cause blue discoloration, nausea, vomiting, headache, visual disturbances, diplopia, pulsatile tinnitus. Doxycycline: Use in similar doses and fashion to minocycline. Photosensitivity seen with use of this drug.$^c$ | Salicylic acid 2% wash: $6.59 for 6 oz; tretinoin 0.025% cream: $35.09 for 20 g; 10% benzoyl peroxide wash: $4.80 for 6 oz; clindamycin phosphate 1% solution: $13.99 for 30 mL; tetracycline HCI 500 mg: $4 for 60; doxycycline hyclate 100 mg: $4 for 20; minocycline HCI 100 mg: $23 for 30 |
| Atypical nevus | | Consider biopsy or excision if a recent change is noted in a pigmented lesion.$^d$ | |
| Cellulitis | Cephalexin, dicloxacillin, doxycycline, minocycline, clindamycin, trimethoprim-sulfamethoxazole$^e$ | Methicillin-sensitive <em>Staphylococcus aureus</em>/skin and soft tissue infection: Dicloxacillin 500 mg 4 times daily; cephalexin 500 mg 4 times daily; clindamycin 300 to 450 mg 4 times daily; trimethoprim-sulfamethoxazole 1 to 2 double strength tablets twice daily; doxycycline or minocycline 100 mg twice daily Methicillin-resistant <em>Staphylococcus aureus</em>/skin and soft tissue infection: Clindamycin 300 to 450 mg 3 times daily; trimethoprim-sulfamethoxazole 1 to 2 double strength tablets twice daily; doxycycline or minocycline 100 mg 2 times daily Author note: if systemic signs present, may need hospital admission with IV antibiotics.$^c$ Culture from bullae or an abscess can be helpful.$^h$ | Dicloxicillin sodium 500 mg: $18.99 for 30; cephalexin 500 mg: $4 for 30; clindamycin HCI 300 mg: $79.99 for 30; clindamycin HCI 150 mg: $24.99 for 30; sulfamethoxazole-TMP DS: $4 for 20; doxycycline hyclate 100 mg: $4 for 20; minocycline HCI 100 mg: $23 for 30 |</p>
<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
</tr>
</thead>
</table>
| Dermatitis (contact, eczema or dermatitis) | Triamcinolone, clobetasol, prednisone¹  
Allergic contact dermatitis (ACD)  
Identify the cause.  
Severe ACD of the hands: 3-week course of topical corticosteroid class 1.  
Intertriginous ACD: topical corticosteroid from class 6 or 7.  
Acute severe ACD such as to poison ivy may need oral corticosteroids for 2 weeks.  
Irritant contact dermatitis (ICD)  
Avoid irritant, use gloves or other protective equipment, use ointments, creams, emollients.  
Clobetasol propionate 0.05% cream (class 1): $10.19 for 15 g; betamethasone dipropionate 0.05% cream (class 1): $4 for 15 g, 45 g; hydrocortisone 2.5% cream (class 7): $4 for 30 g; prednisone 5 mg: $9.99 for 150 |
| Erythema multiforme                | Topical steroids, oral antihistamines, prednisone, acyclovir⁵  
Recent or coexistent herpes simplex virus infection: oral acyclovir may help.  
Recurrence: Acyclovir 400 mg twice daily⁶  
Many lesions: May use prednisone 40 mg to 80 mg daily for 1 to 2 weeks and then rapidly taper.⁷  
Oral involvement: Mouthwashes with anesthetic and antiseptic compounds may help relieve symptoms.⁸  
Acyclovir 400 mg: $28.99 for 60; acyclovir 200 mg: $4 for 30; ior- atadine 10 mg: $4 for 30; triamcinolone 0.1% cream: $4 for 15 g, 80 g; hydrocortisone 2.5% cream: $4 for 30 g; prednisone 5 mg: $9.99 for 150  
10% benzoyl peroxide wash: $4.80 for 6 oz; clindamycin phosphate 1% solution: $13.99 for 30 mL; cephalexin 250 mg: $4 for 28 |
| Folliculitis                       | Topical benzoyl peroxide, topical antibiotics (such as clindamycin), oral antibiotics⁴  
Superficial recurrent uncomplicated: antibacterial soaps  
Refractory or deep with suspected infectious cause: topical and/or oral antibiotics that cover gram-positive bacteria⁹  
Cephalexin, dicloxacillin, clindamycin, amoxicillin-clavulanate, mupirocin ointment³  
Mupirocin ointment apply to lesions 3 times daily (limited number of lesions); dicloxacillin 250 mg 4 times daily for about 7 days; cephalexin 250 mg 4 times daily for about 7 days; clindamycin 300 to 400 mg 3 times daily for about 7 days; amoxicillin-clavulanate 875/125 mg twice daily for about 7 days⁰  
Mupirocin 2% ointment: $34.99 for 22 g; cephalexin 250 mg: $4 for 28; clindamycin HCl 300 mg: $79.99 for 30; dicloxacillin sodium 500 mg: $18.99 for 30; amoxicillin-clavulanate: 875/125 mg $76.99 for 20 |
| Hyperpigmentation                  | Hydroquinone, Tri-Luma (fluocinolone acetonide 0.01%, hydroquinone 4%, tretinoin 0.05%)²  
Epidermal component of postinflammatory hyperpigmentation: hydroquinone 2% to 5% lotion or cream twice daily for weeks to months  
Postinflammatory hyperpigmentation: Tri-Luma at night, sunscreen of SPF 30 during the dayⁱ  
Hydroquinone 4%: $39.99 for 28.35 g; Tri-Luma: $121.41 for 30 g |
| Impetigo                           | Cephalexin, dicloxacillin, clindamycin, amoxicillin-clavulanate, mupirocin ointment⁰  
Mupirocin ointment apply to lesions 3 times daily (limited number of lesions); dicloxacillin 250 mg 4 times daily for about 7 days; cephalexin 250 mg 4 times daily for about 7 days; clindamycin 300 to 400 mg 3 times daily for about 7 days; amoxicillin-clavulanate 875/125 mg twice daily for about 7 days⁰  
Mupirocin 2% ointment: $34.99 for 22 g; cephalexin 250 mg: $4 for 28; clindamycin HCl 300 mg: $79.99 for 30; dicloxacillin sodium 500 mg: $18.99 for 30; amoxicillin-clavulanate: 875/125 mg $76.99 for 20 |
| Keratosis pilaris                  | Ammonium lactate cream, tretinoin 0.025 to 0.1% cream, urea cream 20%, salicylic acid 6%, triamcinolone acetonide 0.1% cream⁶  
Tretinoin 0.025% apply at night or every other day, increase concentration as tolerated, decrease frequency if irritation results; ammonium lactate cream 2 to 3 times daily; salicylic acid 6% 1 to 2 times daily; urea cream 20% 2 to 3 times daily; triamcinolone 0.1% cream 1 to 2 times daily until inflammation improves.⁷  
Amlactin 12% lotion: $14.99 8 oz; tretinoin 0.025% cream: $35.09 for 20 g; salicylic acid 6% cream (Saxx): $138.52 for 400 g; urea 20% cream (Carmol 20): $10.74 for 85 g; triamcinolone 0.1% cream: $4 for 15 g, 80 g |
| Lip erosions                       | Dependent on cause of erosion⁶  
If suspicious for cancer: biopsy or refer; if suspicious for herpes labialis, treat with acyclovir.⁴  

(Continued)
<table>
<thead>
<tr>
<th>Medications</th>
<th>Recommendations</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melasma</td>
<td>Sunscreen and sun avoidance; hydroquinone 4% twice daily has been recommended; azelaic acid twice daily, minimum of 2 to 3 months. Author note: azelaic acid is pregnancy category B, whereas hydroquinone and tretinoin are category C. Tri-Luma at night, protective clothing and sunscreen with SPF 30 during the day.</td>
<td>Hydroquinone 4%: $39.99 for 28.35 g; azelalex (azelaic acid 20%): $73.99 for 30 g; tretinoin 0.1% cream: $46.19 for 20 g</td>
</tr>
<tr>
<td>Nevus, benign</td>
<td>Can be removed if there is concern about the biologic potential.</td>
<td>Terbinafine 250 mg, 30 tablets for $4</td>
</tr>
<tr>
<td>Onychomycosis</td>
<td>Oral terbinafine. Toenail: Terbinafine 250 mg daily for 12 weeks; fingernail: terbinafine 250 mg daily for 8 weeks. Author note: Prescribing information notes that terbinafine is not recommended in patients with liver disease and that pretreatment levels of ALT and AST tests should be performed.</td>
<td>Selenium sulfide, 2.5% lotion: $4 for 120 mL; Head and Shoulders shampoo (Pyrithione zinc 1%): $4.29 for 14.2 oz; ketoconazole 2% shampoo: $27.53 for 120 mL; fluconazole 150 mg: $4 for 1</td>
</tr>
<tr>
<td>Pityriasis versicolor</td>
<td>Selenium sulfide suspension, apply and leave on 5 to 10 minutes before rinsing, continue for 7 to 10 days; zinc pyrithione, apply and leave on 5 minutes, continue for 2 weeks; ketoconazole 2% shampoo, apply and leave on overnight once or apply each day for 3 days; fluconazole 400 mg once; if repeated in a week with 400 mg or 200 mg may achieve higher cure rate.</td>
<td>Hydroxychloroquine sulfate 200 mg: $35.00 for 60; prednisone 5 mg: $9.99 for 150</td>
</tr>
<tr>
<td>Polymorphous light eruption</td>
<td>Sun avoidance, protective clothing, sunscreen; hydroxychloroquine sulfate 200 mg to 400 mg daily in divided doses; prednisone 0.05 to 2 mg/kg/d divided into 2 times daily or 4 times daily, taper over 1 to 2 week period as symptoms improve.</td>
<td>Betamethasone dipropionate 0.05% cream: $4 for 15, 45 g; fluorocortisone 0.05% cream: $4 for 15, 30 g; calcipotriene 0.005% cream: $21.91 for 60 g</td>
</tr>
<tr>
<td>Psoriasis</td>
<td>Topical corticosteroids, calcipotriene. Mild to moderate: Potent topical corticosteroids twice daily to localized psoriasis. Superpotent agents to limited areas then used intermittently or staggered once desired result is seen; calcipotriene twice daily. Author note: For severe or widespread disease, especially if psoriatic arthritis is present, consider referral for systemic treatment.</td>
<td>Permethrin 5% cream: $19.80 for 60 g; triamcinolone 0.1% cream: $4 for 15 g, 80 g</td>
</tr>
<tr>
<td>Scabies</td>
<td>Permethrin 5%: Apply from the chin down and wash off after 8 to 12 hours. Repeat treatment in 1 week if evidence of treatment failure is noted. Has been safely used in patients 2 months old. Precipitated sulfur 6%: is used in infants less than 2 months and pregnant and nursing women. Put in petrolatum or water-washable base and apply 3 nights then wash 24 hours after third application. Has resulted in death and toxicity in infants. All close contacts should be treated. Clothes should be washed and towels and linens changed. Pruritus related to sensitization can be treated with a topical corticosteroid.</td>
<td>Amlactin 12% lotion: $14.99 for 8 oz</td>
</tr>
<tr>
<td>Seborrheic keratosis</td>
<td>Ammonium-lactate lotion 12% twice a day for 1 to 2 months; liquid nitrogen 15 to 20 seconds: curettage.</td>
<td></td>
</tr>
</tbody>
</table>
Tinea

Oral terbinafine, terbinafine 1% cream, ketoconazole 2% cream, clotrimazole 1% cream, miconazole 2% cream, naftine 1% cream, oral fluconazole

Topica

Tinea corporis, tinea cruris, tinea pedis: ketoconazole cream 2% 1 to 2 times daily 2 to 4 weeks, clotrimazole 1% cream twice daily 2 to 6 weeks, naftine 1% cream daily 2 to 4 weeks

Tinea corporis, tinea cruris: terbinafine 1% cream daily 1 to 4 weeks

Tinea pedis: terbinafine 1% cream twice daily 1 to 4 weeks

Prophylaxis

Talc or antifungal powder to interdigital or intertriginous areas after bathing

Oral

Tinea corporis, tinea cruris: terbinafine 250 mg daily 2 to 4 weeks, fluconazole 150 mg weekly 2 to 4 weeks

Tinea pedis: terbinafine 250 mg daily 2 to 6 weeks, fluconazole 150 mg weekly up to 6 weeks

Tinea capitis: terbinafine 250 mg daily 4 weeks

Ketoconazole 2% cream: $14.99 for 15 g; clotrimazole 1% cream: $7.99 for 30 g; naftine 1% cream: $57.28 for 30 g; zeasorb-AF: $8.99 for 70 g; fluconazole 150 mg: $4 for 1 tablet; terbinafine 250 mg: $4 for 30 tablets

Warts

Salicylic acid 5 to 20%

Traumatic lesion

Topical antibiotic ointment, petrolatum

Traumatic nail dystrophy

Avoidance of trauma

Salicylic acid 17%: $7.99 for 9 mL

Polysporin ointment: $9.89 for 28 g

---

*aDrug costs were found at www.drugstore.com. All drugs costing $4 were found at both www.walmart.com and www.target.com.

bData from LaFleur et al.

cData from Straus et al.

dPersonal recommendation by one of the authors (MRH).

eData from Batra.

*fData from Wenner.

gData from Stevens et al.

hData from Curtis.

iData from Hogan.

jData from Cohen and Bassiri-Tehrani.

kData from Lamoreux et al.

lData from Al-Johani et al.

mData from Kelly.

nData from Satter and Cyr.

oData from Patel.

pData from Crowe and Escobar.

qData from Gupta et al.

rData from McCalmont.

sData from Crawford et al.

tData from Choi.

uData from Scheinfeld and Shirin.

vData from Sobell and Geist.

wData from Bogle.

xData from Klaus et al.

yData from Bogle.

zData from Naradzay and Rubeiz.

aaData from Yelverton.