Characteristics of Office-Based Physician Visits for Cutaneous Fungal Infections: An Analysis of 1990 to 1994 National Ambulatory Medical Care Survey Data

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To our knowledge, visits in the ambulatory setting due to cutaneous fungal infections have not been recently characterized. To provide descriptive epidemiology on ambulatory cutaneous fungal infection visits, we analyzed office-based physician visits for cutaneous fungal infections recorded in the National Ambulatory Medical Care Survey (NAMCS) from 1990 to 1994. The International Classification of Diseases (ICD-9) was used to define the cutaneous fungal infections. Sampling weights were applied to achieve the nationally representative estimates. From 1990 to 1994, an estimated 21.6 million physician office visits at an estimated cost of $216 million/y (office visit plus medication costs) were made for cutaneous fungal infection diagnoses. The total cost of office visits (without medication costs) was approximately $116 million/y. The total cost of the top 5 medications was approximately $68 million/y. According to an analysis of visits per physician specialist, dermatologists had the largest proportion of visits for cutaneous fungal infections. The cost associated with the diagnosis and management of cutaneous fungal infections is significant. Of all the physician specialists, dermatologists treated the most cutaneous fungal infections.

Cutaneous fungal infections are common and are treated by a variety of physician specialists.[1-2] The epidemiology of cutaneous fungal infections is important in the diagnosis and management of these diseases. In 1994 and 1996 reports on epidemiologic studies of cutaneous fungal infections,[3-5] the characteristics of physician utilization for these diseases were not described. The purpose of this article is to provide epidemiologic characteristics of office-based visits for cutaneous fungal infections and present the pattern of medications prescribed for these infections.

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Methods

Since 1990, the National Center for Health Statistics has conducted the National Ambulatory Medical Care Survey (NAMCS) as an ongoing descriptive data-collection effort regarding office-based physician practice in the United States.[6-10] In our study, we limited sampling to nonfederally employed physicians principally engaged in outpatient care. The multistage probability sampling design was stratified by primary sampling unit (county, contiguous counties, or standard metropolitan statistical area); then by physician practices within the sampling unit; and, last, by patient visits within the 52 weekly randomized periods. For small practices, taking a sample of 100% of one week's visits was possible; for very large practices, 20% of patient visits were randomly sampled. The resulting estimates can be used to describe utilization of ambulatory care services in the United States.[11]

The study interval of 1990 to 1994 was chosen because data for these years were the most recent data available. For all patients and diagnoses, the entire 1990, 1991, 1992, 1993, and 1994 databases have, respectively, 43,469; 33,795; 34,606; 35,978; and 33,598 records, which are used to estimate the experience of 704, 670, 762, 717, and 681 million annual office-based visits of all types in the United States. For each visit sampled, a 1-page patient log was completed; this log included demographic

data, reasons for patient visits, physicians' diagnoses, services provided, and referral practices.

To define the diagnoses of cutaneous fungal infection, we reviewed the International Classification of Disease (ICD-9) codes[12]; extracted all codes for cutaneous fungal infections (110.0–112.9); and divided these into 3 subgroups—codes for tinea (110.0–110.9), codes for superficial fungal infections including tinea versicolor (111.0–111.9), and codes for candidiasis (112.0–112.9). Dermatomycoses include tinea nigra, white piedra, black piedra, and other specified dermatomycoses. The number of office-based visits was divided by the respective number of people in each subgroup (except the mean-age subgroup) using 1990 to 1994 US census data.[13] Estimates of the number of office-based physicians were made using 1992 and 1995 data from the American Medical Association.[14,15]

The number of primary, secondary, and tertiary drug mentions for cutaneous fungal infection (primary diagnosis) visits to all office-based providers was determined, and the top 5 drug mentions were listed for each diagnosis. The top 5 drug mentions also were determined for all tinea, superficial fungal infection, and candidiasis diagnoses. The top 5 drug mentions for all tinea, superficial fungal infection, and candidiasis diagnoses represent half the overall number of drug mentions. Trade-name medications were converted to their generic equivalents, and medications with different trade names but the same generic equivalent were put into a single group.

To estimate the cost of visits for cutaneous fungal infections, we applied Bowman Gray School of Medicine charges. The NAMCS database was analyzed to determine the number of new-patient and return visits. We assumed that the new-patient visits occurred at level 1 (99201; new-patient visit) and that the return visits occurred at level 2 (99212; problem-focused history and physical examination, straightforward decision-making). Local charges were applied: $63 for level-1 new patients and $46 for level-2 return visits. Actual charges collected by Bowman Gray School of Medicine represent 55% of gross charges (patients without insurance and patients only with indemnity insurance are charged the full office-visit cost; patients without insurance usually do not pay). Therefore, we applied a 45% discount to level-1 and level-2 charges; this discount resulted in estimated costs of $34.65/patient visit and $25.30/patient visit, respectively. The office-visit cost does not include the cost of potassium hydroxide preparations. The office-visit cost was multiplied by the total number of cutaneous fungal infection visits to get the total cost of office visits from 1990 to 1994.

Table 1.

Mean Costs of Antifungal Medications

Antifungal Medication*	Cost, $
Ciclopirox	21.51
Clotrimazole	10.60
Clotrimazole + betamethasone dipropionate	30.94
Griseofulvin	70.38
Ketoconazole	25.55
Miconazole	36.64
Nystatin	4.02
Sulconazole	13.50
Terconazole	26.67

*Each is a topical cream, except griseofulvin (oral medication).

Estimates of medication costs were based on the assumption of 30 g/medication equivalent, and generic prices were used when available.[16] As administration methods of prescribed medications were not specified in the NAMCS database, all medications were assumed to be topical creams—except griseofulvin (oral intake). If more than one price was listed for a medication, the mean of all those prices was used. If a 30-g tube of medication was unavailable, the cost estimate was based on other available tube sizes (eg, mean price of 15- and 45-g tubes for clotrimazole plus betamethasone dipropionate). The estimate of the cost of griseofulvin was based on a dosage of 250 mg twice a day for 6 weeks. Mean costs of antifungal medications are listed in Table 1.

Overall medication costs were estimated as follows. The total cost of the top 5 medications, which represented 67.5% of all drug mentions, was estimated. To estimate the cost of the rest of the medications (32.5% of all drug mentions), we used 2 methods and then selected the more conservative amount. The first method involved calculating mean costs of medications based on the top

Table 2.

Cutaneous Fungal Infection Visits by Diagnosis and Mean Age, 1990–1994*

Diagnosis	No. Visits (% [95% CI])†	Mean Age, y (95% CI)
Tinea		
Hair and beard	597 (6.9 [589–605])	7.8 (4.2–11.5)
Tinea corporis	2339 (27.2 [2332–2346])	26.9 (22.4–31.5)
Tinea cruris	1449 (16.9 [1442–1456])	41.8 (36.3–47.3)
Tinea manus	82 (1.0 [73–91])	43.4 (25.8–61.0)
Tinea pedis	1434 (16.7 [1427–1441])	39.5 (35.1–44.0)
Tinea profunda	23 (0.3 [10–36])	57.0‡
Tinea unguium	1340 (15.6 [1333–1347])	51.9 (47.1–56.8)
Other site	75 (0.9 [66–84])	34.5 (20.6–48.4)
NOS	1251 (14.6 [1244–1258])	31.2 (24.7–37.7)
All types	8590 (100 [8583–8597])	35.9 (33.6–38.3)
Superficial fungal infection		
Dermatomycoses	113 (6.1 [104–122])	56.5 (42.1–70.9)
Dermatomycoses NOS	533 (28.7 [525–541])	33.8 (21.6–46.0)
Tinea versicolor	1213 (65.2 [1206–1220])	28.8 (24.8–32.9)
All types	1859 (100 [1852–1866])	33.2 (28.7–37.7)
Candidiasis		
Balanitis	139 (1.2 [130–148])	54.9 (34.8–75.0)
Disseminated	4 (0.04 [0–31])	86.0‡
Esophagus	38 (0.34 [27–49])	67.0‡
Mouth	1819 (16.3 [1812–1826])	17.0 (11.1–23.0)
Skin/nail	826 (7.4 [818–834])	22.2 (12.6–31.7)
Vulva/vagina	4030 (36.1 [4023–4037])	36.5 (34.0–39.0)
NOS	4166 (37.3 [4159–4173])	36.0 (33.3–38.7)
Other NOS	141 (1.3 [132–150])	35.7 (20.1–51.4)
All types	11,163 (100 [11,156–11,170])	32.5 (30.5–34.5)

*CI indicates confidence interval; NOS, not otherwise specified.
†No. visits in thousands.
‡Inability to calculate CI because of insufficient observations.

5 medications for all tinea, superficial fungal infection, and candidiasis diagnoses and multiplying those mean costs by the number of drug mentions not in the top 5. The second method involved assuming that the mean total cost of medications for the other 32.5% of the drug mentions equaled the mean total cost of the top 5 medications (this method is more conservative than the first). Thus, the overall medication costs from 1990 to 1994 were estimated by calculating the costs of the top 5 medications of all tinea, superficial fungal infection, and candidiasis diagnoses, respectively, and doubling the result.

Sampling weights were applied to achieve the nationally representative estimates. All estimates

Table 3.

Epidemiology of Cutaneous Fungal Infection Visits, 1990–1994*

Demographics	Tinea		Superficial Fungal Infection		Candidiasis	
	No. Visits (% [95% CI])†	No. Visits/ Population‡	No. Visits (% [95% CI])†	No. Visits/ Population‡	No. Visits (% [95% CI])†	No. Visits/ Population‡
Sex						
Men	4620 (53.8 [4596–4646])	74.4	995 (53.5 [943–1047])	16.0	2170 (19.4 [2133–2205])	34.9
Women	3970 (46.2 [3943–3997])	60.8	864 (46.5 [808–920])	13.2	8993 (80.6 [8974–9012])	138
Race						
White	6773 (78.8 [6751–6793])	63.7	1559 (83.9 [1516–1600])	14.6	8958 (80.2 [8938–8976])	84.2
Black	1610 (18.7 [1569–1651])	102	238 (12.8 [131–343])	15	1761 (15.8 [1721–1801])	111
Native American§	177 (2.1 [54–300])	165	39 (2.1 [0–300])	36	346 (3.1 [258–434])	323
Asian/ Pacific Islander	30 (0.3 [0–328])	7.3	2 (0.1 [0–1155])	0.5	63 (0.6 [0–268])	15.3
Not specified	0 (0 [0–5154])	0	21 (1.1 [0–377])	0.2	35 (0.3 [0–319])	0.3
US geographic region						
Northeast	1580 (18.4 [1538–1622])	77.2	445 (24.0 [367–523])	21.8	1965 (17.6 [1928–2002])	96.1
Midwest	2330 (27.1 [2295–2365])	76.9	321 (17.3 [230–412])	10.6	3351 (30.0 [3322–3380])	111
South	2544 (29.6 [2511–2577])	57.7	785 (42.2 [726–844])	17.8	3420 (30.6 [3391–3449])	77.6
West	2136 (24.9 [2100–2172])	77.7	308 (16.6 [215–402])	11.2	2427 (21.7 [2393–2461])	88.3

*CI indicates confidence interval.
†No. visits in thousands.
‡No. visits/10,000 people within the population subgroup.
§American Indians, Eskimos, and Aleuts.

Table 4.

Cutaneous Fungal Infection Visits by Physician Specialist, 1990–1994*

Physician Specialist	No. Visits (% [95% CI])†			
	Tinea	Superficial Fungal Infection	Candidiasis	All Cutaneous Fungal Infections
Family or general practitioner	3080 (35.9 [3043–3117])	618 (33.2 [544–692])	4008 (35.9 [3974–4042])	7706 (35.7 [7678–7734])
Internal medicine	1334 (15.5 [1286–1382])	203 (10.9 [89–317])	1166 (10.4 [1115–1217])	2703 (12.5 [2667–2739])
Pediatrician	1149 (13.4 [1100–1188])	313 (16.8 [240–386])	1586 (14.2 [1553–1619])	3048 (14.1 [3024–3072])
Dermatologist	2534 (29.5 [2518–2550])	561 (30.2 [529–593])	452 (4.1 [416–488])	3547 (16.4 [3533–3561])
Other	493 (5.7 [433–553])	164 (8.8 [61–267])	3951 (35.4 [3929–3973])	4608 (21.3 [4587–4629])

*CI indicates confidence interval.
†No. visits in thousands.

derived from the NAMCS data are subject to sampling variability. The relative standard error (RSE) is a measure of sampling variability related to the number of patient visits. RSE rates for each year from 1990 to 1994 are similar, so the RSE rates for the 1993 NAMCS[9] were arbitrarily chosen to approximate the study interval. All data management and analysis were performed with the Statistical Analysis System (SAS Institute, Cary, North Carolina).

Results

Epidemiology of Cutaneous Fungal Infection Visits—According to our analysis of NAMCS data, an estimated 21.6 million physician office visits were made for fungal infections from 1990 to 1994. That estimate was broken down into subtotals for the subgroups (eg, tinea pedis, candidiasis of the mouth) mentioned in Table 2, and age was matched to all the visits to obtain patients' mean age at each diagnosis. Mean ages were 35.9 years at tinea diagnoses, 33.2 years at superficial fungal infection diagnoses, and 32.5 years at candidiasis diagnoses (Table 2). Tinea corporis represented the largest percentage (27.2%) of all tinea cases, tinea versicolor represented the largest percentage (65.2%) of all superficial fungal infections, and candidiasis "not otherwise specified" represented the largest percentage (37.3%) of all candidiasis cases.

The total number of visits for cutaneous fungal infections due to tinea or superficial fungal infections was larger for males than for females. As a proportion of the population, more men sought ambulatory care for tinea (74.4/10,000 population) and for superficial fungal infections (16.0/10,000 population); however, women greatly outnumbered men in office visits for candidiasis (138/10,000 population), as seen in Table 3. The data also were reviewed for physician utilization for cutaneous fungal infections with regard to race and US geographic region (Table 3).

Physician Utilization for Cutaneous Fungal Infections—The total number of visits per physician specialist was determined for tinea, superficial fungal infection, and candidiasis (Table 4). Of all fungal infections, 35.7% were seen by family or general practitioners, 16.4% were seen by dermatologists, and 21.3% were seen by other specialists; of all tinea cases, 35.9% were seen by family or general practitioners, and 29.5% were seen by dermatologists; and, of all superficial fungal infections, 33.2% were seen by family or general practitioners, and 30.2% were seen by dermatologists. To determine the number of visits per physician specialist

Table 5.

Visits Resulting in Primary Diagnosis of Cutaneous Fungal Infection per Physician Specialist per Year, 1990–1994

Physician Specialist	Total No. Visits Divided by Total No. Physicians in Specialty			
	Tinea	Superficial Fungal Infection	Candidiasis	All Cutaneous Fungal Infections
Family or general practitioner	10.4	2.1	13.5	26.0
Internal medicine	3.7	0.6	3.2	7.5
Pediatrician	7.3	2.0	10.1	19.4
Dermatologist	76.3	16.9	13.6	106.8
Other	0.5	0.2	3.7	4.4

(Table 5), we normalized the raw data in Table 4 using the American Medical Association physician characteristic data described in Methods. For all cutaneous fungal infections, the specialists with the most patient visits were dermatologists (106.8 visits/y), family or general practitioners (26.0 visits/y), and pediatricians (19.4 visits/y). Compared with the other specialists, dermatologists had the most visits for tinea cases (76.3 visits/y), superficial fungal infections (16.9 visits/y), and candidiasis cases (13.6 visits/y).

Drug Mentions for Cutaneous Fungal Infections—NAMCS data for drug mentions associated with primary, secondary, and tertiary diagnoses were obtained and sorted according to largest number of drug mentions per cutaneous fungal infection diagnosis. The estimated top 5 drug mentions for tinea cases, superficial fungal infections, and candidiasis cases totaled 13.36 million (confidence interval [CI], 13.34–13.38 million). The estimated drug mentions for all cutaneous fungal infections totaled 19.80 million (CI, 19.78–19.82 million). The medications mentioned most for all cutaneous fungal infections are listed in Tables 6 through 8. Ketoconazole is the medication mentioned most for tinea (13.7%) and superficial fungal infections (27.2%); terconazole is the medication mentioned most for candidiasis (16.4%).

Office-Visit and Medication Costs for Cutaneous Fungal Infections—To estimate the direct cost of office visits for cutaneous fungal infections, we used our estimates of $34.65 for a level-1 visit and $25.30 for a level-2 visit and added the total to the overall medication cost (see Methods). The total office-visit cost (excluding medication cost) for all cutaneous fungal infections was estimated at $580 million for 5 years or $116 million/y. The total medication cost for the top 5 drug mentions for cutaneous fungal infections was estimated at $339 million for 5 years or $68 million/y—67.5% of the cost of $502 million for 5 years ($100 million/y) for all drug mentions at a mean of $25.37/prescription (Table 9). Estimated office-visit and medication costs for cutaneous fungal infections totaled $1.08 billion for 5 years or $216 million/y.

Comment

Data on patient characteristics, physician utilization, and medications prescribed during office visits for cutaneous fungal infections—data such as those presented in Tables 1 through 7—have not been reported recently. Women's larger number of candidiasis cases per capita may be a reflection of their large number of visits for candidiasis of the vulva and vagina, which in turn may explain why "other specialists" (a category that includes obstetricians and gynecologists) were the specialists with the second largest number of office-based visits. Also, the sample of Native Americans may have been unrepresentative: their number of cutaneous fungal infection visits was small, but the proportion of Native Americans who made those visits was large.

Table 6.

Tinea Visits by Mention of Each of Top 5 Medications Prescribed, 1990–1994*

Tinea Type	Medication, No. Visits (% [95% CI])†				
	No. 1 Medication	No. 2 Medication	No. 3 Medication	No. 4 Medication	No. 5 Medication
Hair and beard	Griseofulvin, 308 (34.1 [180–436])	Ketoconazole, 178 (19.7 [10–346])	Ciclopirox, 83 (9.2 [0–329])	Amoxicillin, 56 (6.2 [0–355])	Clotrimazole, 54 (6.0 [0–359])
Tinea corporis	Ketoconazole, 436 (14.5 [328–544])	Clotrimazole + betamethasone, 388 (12.9 [274–502])	Clotrimazole, 340 (11.3 [218–462])	Tolnaftate, 231 (7.7 [83–379])	Griseofulvin, 142 (4.7 [0–330])
Tinea cruris	Ketoconazole, 419 (19.6 [309–529])	Clotrimazole + betamethasone, 311 (14.6 [184–438])	Griseofulvin, 143 (6.7 [0–331])	Clotrimazole, 119 (5.6 [0–325])	Ciclopirox, 93 (4.4 [0–325])
Tinea manus	Griseofulvin, 27 (27.3 [0–458])	Oxiconazole, 18 (18.2 [0–546])	Clotrimazole + betamethasone, 14 (14.1 [0–613])	Ciclopirox, 13 (13.1 [0–634])	Naftifine, 13 (13.1 [0–634])
Tinea pedis	Ketoconazole, 245 (10.3 [102–388])	Griseofulvin, 174 (7.3 [4–344])	Econazole, 158 (6.6 [0–336])	Terbinafine, 143 (6.0 [0–331])	Clotrimazole + betamethasone, 108 (4.5 [0–324])
Tinea profunda	None, 0 (0 [0–7083])	‡	‡	‡	‡
Tinea unguium	Griseofulvin, 239 (14.6 [94–384])	Ketoconazole, 208 (12.7 [52–364])	Fluconazole, 101 (6.1 [0–324])	Glycolic acid, 89 (5.4 [0–327])	Naftifine, 68 (4.1 [0–340])
Other site	Clotrimazole + betamethasone, 51 (57.7 [0–365])	Butoconazole, 15 (17.0 [0–593])	Cortisone, 9 (10.2 [0–756])	—	—
NOS	Clotrimazole, 253 (16.0 [112–394])	Clotrimazole + betamethasone, 235 (14.9 [89–381])	Ketoconazole, 135 (8.6 [0–328])	Econazole, 84 (5.3 [0–329])	Ciclopirox, 83 (5.3 [0–329])
All types	Ketoconazole, 1621 (13.7 [1565–1677])	Clotrimazole + betamethasone, 1107 (9.4 [1039–1175])	Griseofulvin, 1033 (8.8 [963–1130])	Clotrimazole, 766 (6.5 [684–848])	Ciclopirox, 272 (2.3 [129–415])

*CI indicates confidence interval; NOS, not otherwise specified.
†No. visits in thousands.
‡No drug mentions reported.

Table 7.

Superficial Fungal Infection Visits by Mention of Each of Top 5 Medications Prescribed, 1990–1994*

Infection Type	Medication, No. Visits (% [95% CI])†				
	No. 1 Medication	No. 2 Medication	No. 3 Medication	No. 4 Medication	No. 5 Medication
Dermatomycoses	Neomycin + polymyxin B,‡ 13 (17.5 [0–634])	M-cresyl acetate,§ 13 (17.5 [0–634])	Hydrocortisone, 12 (16.2 [0–659])	Hydrocortisone + acetic acid, 10 (13.5 [0–659])	Hydroxyzine, 5 (6.7 [0–1007])
Dermatomycoses NOS	Ketoconazole, 174 (24.1 [4–344])	Clotrimazole + betamethasone, 150 (20.8 [0–333])	Sulconazole, 60 (8.3 [0–349])	Clotrimazole, 58 (8.0 [0–349])	Griseofulvin, 43 (6.0 [0–385])
Tinea versicolor	Ketoconazole, 460 (30.0 [355–565])	Clotrimazole, 188 (12.3 [24–352])	Antifungal NOS, 93 (6.1 [0–325])	Clotrimazole + betamethasone, 75 (4.9 [0–334])	Amoxicillin, 43 (2.8 [0–385])
All superficial fungal infections	Ketoconazole, 634 (27.2 [544–724])	Clotrimazole + betamethasone, 225 (9.7 [75–375])	Clotrimazole, 196 (8.4 [36–356])	Sulconazole, 60 (2.6 [0–349])	Griseofulvin, 43 (1.8 [0–385])

*CI indicates confidence interval; NOS, not otherwise specified.
†No. visits in thousands.
‡Cortisporin® was the drug mentioned.
§Cresylate® was the drug mentioned.

The number of physicians per specialty was obtained from data pertaining to all office-based physicians, those both federally and nonfederally funded. Because only nonfederally funded physician visits were captured in the NAMCS data, actual visit numbers may be larger than numbers reported in this study (eg, from Table 5, a dermatologist probably sees more than 106.8 fungal infections/y).

Estimation of office-visit and medication costs from NAMCS data proved complex. NAMCS data provided only an estimate of the number of patient visits for cutaneous fungal infections. We estimated office-visit costs by combining level-1 and level-2 visits and applying a discount reflecting reimbursements for managed care. Administration methods of prescribed medications were not specified in the NAMCS database; to generate the most conservative cost estimates, we assumed that all prescribed antifungal medications were topical creams (the exception being griseofulvin, an oral medication). Medication quantities also were assumed, as these too were unavailable in the database. In addition, we had to assume that patients got their prescriptions filled. Last, as costs were estimated only for the top 5 medications for tinea, superficial fungal infections, and candidiasis, we averaged those costs and used the result as an estimate of the costs of the other medications (whether this is the most conservative estimate is not clear).

The medications for cutaneous fungal infections listed in the NAMCS database are too numerous to list in this article. Obviously, physicians can choose from a wide variety of medications. Cost becomes an important factor in choosing the proper one. The cost of just the top 5 medications

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Table 8.

Candidiasis Visits by Mention of Each of Top 5 Medications Prescribed, 1990–1994*

Candidiasis Type	Medication, No. Visits (% [95% CI])†				
	No. 1 Medication	No. 2 Medication	No. 3 Medication	No. 4 Medication	No. 5 Medication
Balanitis	Nystatin, 26 (14.8 [0–465])	Fluocinolone, 22 (12.5 [0–500])	Clotrimazole, 19 (10.8 [0–533])	Clotrimazole + betamethasone, 18 (10.2 [0–546])	Ketoconazole, 17 (9.7 [0–560])
Disseminated	Thyroid, 0 [4–1124]	‡	‡	‡	‡
Esophagus	None, 0 (0 [0–7083])	‡	‡	‡	‡
Mouth	Nystatin, 1423 (58.2 [1363–1483])	Amoxicillin, 115 (4.7 [0–324])	Immunization, 108 (4.4 [0–324])	Clotrimazole, 90 (3.7 [0–326])	Chlorpropamide,§ 45 (1.8 [0–379])
Skin/nail	Clotrimazole + betamethasone, 252 (20.5 [111–393])	Clotrimazole, 205 (16.7 [48–362])	Nystatin 183 (14.9 [17–349])	Ketoconazole, 60 (4.9 [0–349])	Nystatin + triamcinolone, 45 (3.7 [0–379])
Vulva/ vagina	Terconazole, 1621 (30.7 [1564–1678])	Miconazole, 705 (13.4 [620–790])	Clotrimazole, 375 (7.1 [259–491])	Metronidazole, 236 (4.5 [90–382])	Butoconazole, 205 (3.9 [48–362])
NOS	Terconazole, 817 (14.7 [738–896])	Miconazole, 524 (9.4 [426–622])	Ketoconazole, 267 (4.8 [130–404])	Clotrimazole, 263 (4.7 [125–401])	Clotrimazole + betamethasone, 206 (3.7 [50–362])
Other NOS	Ketoconazole, 49 (25.1 [0–369])	Antifungal NOS, 33 (16.9 [0–423])	Amoxicillin, 22 (11.2 [0–500])	Econazole, 19 (9.7 [0–533])	Nystatin, 18 (9.2 [0–546])
All types	Terconazole, 2438 (16.4 [2392–2484])	Nystatin, 1885 (12.7 [1832–1938])	Miconazole, 1275 (8.6 [1211–1339])	Clotrimazole, 1000 (6.7 [928–1072])	Clotrimazole + betamethasone, 520 (3.5 [421–619])

*CI indicates confidence interval; NOS, not otherwise specified.
†No. visits in thousands.
‡No drug mentions reported.
§Diabinese® was the drug mentioned.

Table 9.

Costs for Cutaneous Fungal Infection Visits, 1990–1994

Cost Component	1990–1994 Cost	Cost/y
Office visits	$580 million	$116 million
Medications	$502 million	$100 million
Overall	$1.08 billion	$216 million

for cutaneous fungal infections was substantial ($68 million/y). In addition, the data presented in this article do not cover the new systemic medications (ie, oral itraconazole, oral terbinafine), for which cost of medication alone is as much as $2000/y for each patient.

In conclusion, diagnosis and management of cutaneous fungal infections are associated with significantly high costs. Many types of physicians treat cutaneous fungal infections, but, overall, dermatologists see the most patients with these diseases.[1,17-21]

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