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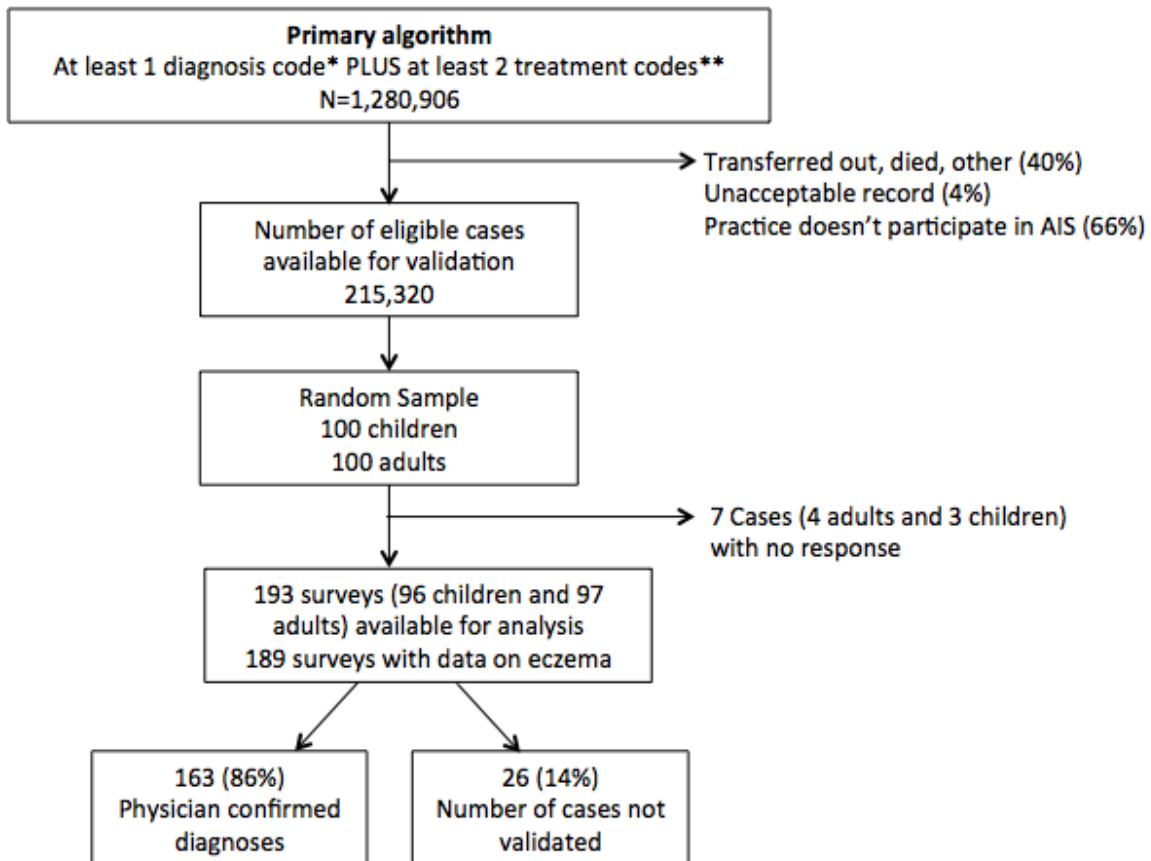
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## TABLES/FIGURES

**Figure 1.** Flow chart showing the sampling of patients from THIN and resulting classification



**Notes:** [\\*Any of the 5 most commonly used READ codes \(Atopic Dermatitis/ Eczema M111.00, Infantile Eczema M112.00, Flexural Eczema M113.00, Allergic/Intrinsic Eczema M114.00, or Eczema NOS M12z100\).](#) [\\*\\*Any code for topical emollients, topical steroids, topical calcineurin inhibitors, topical anti-infective treatments, systemic immunomodulatory medications \(including methotrexate, azathioprine, mycophenolate, cyclosporine, or biologics\) or phototherapy on separate days; see Supplemental Table 2\).](#)

**Table 1.** Distribution of codes in the entire THIN database

	<b>Total</b>	<b>Children (ages 0-17)</b>	<b>Adults (ages 18+)</b>
	<b>N = 9,775,618</b>	<b>N = 1,404,158</b>	<b>N = 8,371,460</b>
<b><i>Diagnosis codes</i></b>	<u>Proportion of individuals</u>		
Atopic Dermatitis/ Eczema M111.00	6%	13%	5%
Infantile Eczema M112.00	1%	7%	0%
Flexural Eczema M113.00	1%	2%	0%
Allergic/Intrinsic Eczema M114.00	0%	0%	0%
Eczema NOS M12z100	6%	8%	6%
<u>One or more</u> of the 5 codes listed above	13%	23%	11%
<u>Two or more</u> of the 5 codes listed above	4%	10%	4%
<u>One or more</u> of 32 likely eczema codes*	14%	25%	13%
<u>One or more</u> of 74 possible eczema codes*	29%	47%	26%
<b><u>Prescription codes</u></b>			
<u>One or more prescription for any AD-related therapy**</u>	<u>45%</u>	<u>57%</u>	<u>42%</u>
<u>One or more prescription for a topical steroid or calcineurin inhibitor**</u>	<u>39%</u>	<u>42%</u>	<u>38%</u>
<u>One or more prescription for an AD-related systemic treatment **</u>	<u>1%</u>	<u>0%</u>	<u>1%</u>
<b><u>Other codes</u></b>			
<u>One or more exclusionary condition***</u>	<u>7%</u>	<u>3%</u>	<u>8%</u>
<u>One or more dermatology consult code</u>	<u>4%</u>	<u>2%</u>	<u>5%</u>
<u>One or more biopsy or patch testing code</u>	<u>1%</u>	<u>0%</u>	<u>1%</u>

Notes: Ages as of Jan 2013; note that among adults, codes may have occurred before age 18. [\\*See Supplemental Table 1.](#) [\\*\\*Includes topical skin preparations, topical steroids, topical calcineurin inhibitors, topical anti-infective treatments, and systemic treatments \(including methotrexate, azathioprine, mycophenolate, cyclosporine, biologics or phototherapy\); see supplemental Table 2.](#) [\\*\\*\\*See Supplemental Table 3.](#)

**Table 2.** Survey sample characteristics

<i>Survey responses</i>	<b>Total*</b>	<b>Confirmed eczema*</b>	<b>No eczema*</b>	<b>Chi<sup>2</sup> or Fisher's p-value</b>
	200	163 (81.5%)	26 (13%)	
<b>Diagnosis codes</b>				
Atopic Dermatitis/ Eczema M111.00	116 (58%)	98 (60%)	13 (50%)	0.330
Infantile Eczema M112.00	30 (15%)	24 (15%)	4 (15%)	0.930
Flexural Eczema M113.00	16 (8%)	13 (8%)	2 (8%)	0.960
Allergic/Intrinsic Eczema M114.00	3 (2%)	3 (2%)	0 (0%)	0.486
Eczema NOS M12z100	86 (43%)	73 (45%)	9 (34%)	0.331
Mean number (SD) of the 5 eczema codes listed above	1.3 (0.5)	1.3 (0.6)	1.1 (0.3)	0.051
Mean number (SD) of 32 likely eczema codes**	2.6 (2.9)	2.8 (3.1)	1.7 (1.2)	0.070
Mean number (SD) of 74 possible eczema codes**	4.0 (3.8)	4.1 (3.9)	3.2 (3.3)	0.271
<b>Prescription codes</b>				
Mean number (SD) of prescriptions for any <a href="#">AD-related therapy</a> ***	16.3 (24.5)	17.5 (26)	11.1 (15.0)	0.226
Mean number (SD) of topical steroid or calcineurin inhibitor prescriptions***	9 (15)	6.6 (8.9)	6.5 (7.9)	0.953
Mean number (SD) of <a href="#">AD-related systemic treatment</a> codes***	0.4 (5.8)	0.5 (6.4)	0 (0)	0.691
<b>Other</b>				
Mean number (SD) of exclusionary diagnostic codes <sup>^</sup>	0.4 (1.7)	0.3 (0.7)	0.5 (1.6)	0.281
Total (%) with at least one exclusionary condition <sup>^</sup>	29 (15%)	25 (15.3%)	3 (11.5%)	
Mean number (SD) of diagnostic procedure (biopsy or patch testing) codes <sup>^</sup>	0	0	0	N/A
Mean number (SD) of dermatology consultation codes <sup>^</sup>	0.2 (1.1)	0.3 (1.6)	0.0 (0.2)	0.308
Total (%) with at least one dermatology consult code	19 (10%)	18 (11%)	1 (4%)	
History of atopy, N (%) <sup>^^</sup>	64 (39%)	56 (41%)	6 (24%)	0.110
Male N (%)	100 (50%)	86 (53%)	9 (35%)	0.086

Notes: \*Columns do not sum to 200 because of missing values (7 unreturned surveys and 4 returned surveys missing a response to the eczema question). \*\*See Supplemental Table 1. \*\*\*Includes topical skin preparations, topical steroids, topical calcineurin inhibitors, topical anti-infective treatments, and AD-related systemic treatments (including methotrexate, azathioprine, mycophenolate, cyclosporine, biologics or phototherapy); see supplemental Table 2. <sup>^</sup>See supplemental Table 3. <sup>^^</sup>Per physician response on survey; defined as a history of "other atopic disease (e.g. asthma or allergic rhinitis) for adults OR a family history of atopic disease in a first degree relative if aged under 4 years"

**Table 3.** Positive Predictive Value of Coding Algorithms

	True Positive / All Positive	% of patients with confirmed eczema identified	All		Children (ages 0-17)		Adults (ages 18+)	
			PPV (%)	95%CI	PPV (%)	95%CI	PPV (%)	95%CI
<i>Baseline algorithm</i>								
One of 5 eczema codes + at least 2 treatment codes on separate dates (survey selection criteria)	163/189	N/A	86%	(80-91%)	90%	(83-96%)	82%	(73-89%)
<i>Alternative algorithms*</i>								
Baseline algorithm; at least one treatment is a topical steroid/TCI code	157/183	96%	86%	(80-91%)	90%	(81-95%)	82%	(73-89%)
Baseline algorithm; at least two treatments are topical steroid/TCI codes	133/153	82%	87%	(81-92%)	91%	(82-97%)	84%	(74-91%)
Baseline algorithm; at least one treatment is a topical steroid/TCI code either 3 months prior or up to 1 year after the eczema code	81/92	50%	88%	(80-94%)	92%	(80-98%)	84%	(70-94%)
Baseline algorithm + an additional eczema code (2 eczema codes total)	83/91	51%	91%	(83-96%)	94%	(82-99%)	88%	(74-96%)
Baseline algorithm + an additional eczema code (2 eczema codes total); at least one treatment is a topical steroid/TCI code	82/90	50%	91%	(83-96%)	94%	(83-99%)	88%	(74-96%)
Baseline algorithm + an additional eczema code (2 eczema codes total); at least two treatments are topical steroid/TCI code	133/153	82%	87%	(81%-92%)	91%	(82%-97%)	84%	(74%-91%)
Baseline algorithm + no exclusionary condition code	138/161	85%	86%	(79-91%)	89%	(81-95%)	82%	(71-90%)
Baseline algorithm + asthma or rhinitis code	52/56	32%	93%	(83-98%)	95%	(76-100%)	91%	(77-98%)
Baseline algorithm + dermatology consult code	18/19	11%	95%	(74-100%)	100%	(54-100%)	92%	(64-100%)

**Notes:** \*See Supplemental Tables 2 and 3 for lists of codes. TCI= topical calcineurin inhibitor

**Table 4.** Age at diagnosis or at last disease activity requiring contact with the physician

	Distribution of estimates by source		Difference between physician estimate from survey and database	
	Mean	95% CI	Mean	95% CI
<i>Age in years at diagnosis (N=160)</i>				
Physician survey	17.9	(14.3, 21.4)	N/A	N/A
Database				
First diagnosis code*	17.1	(13.5, 20.6)	0.8	(-0.3, 1.9)
First prescription for any eczema treatment**	17.4	(13.9, 21.0)	0.4	(-0.8, 1.7)
<i>If no symptoms in the year prior to the last visit date, age at last disease activity (N=53)</i>				
Physician survey	20.7	(14.3, 27.2)	N/A	N/A
Database				
Last diagnosis code*	22.0	(15.6, 28.5)	-1.3	(-2.5, -0.1)
Last prescription for any eczema treatment**	24.6	(14.3, 27.2)	-3.9	(-5.3, -2.4)

**Notes:** \*Any of the 5 most commonly used codes (Atopic Dermatitis/ Eczema M111.00, Infantile Eczema M112.00, Flexural Eczema M113.00, Allergic/Intrinsic Eczema M114.00, Eczema NOS M12z100). \*\*See Supplemental Table 2.