

399 **Supplementary Appendix 1. List of ICD-9 and CPT Codes**

<b>Code</b>	<b>Description</b>
<b>Varicella</b>	
052.xx	Varicella
<b>Laboratory Test</b>	
<i>VZV-specific test</i>	
86787	Antibody; varicella-zoster
87290	Infectious agent antigen detection by immunofluorescent technique; Varicella zoster virus
87798	Infectious agent detection by nucleic acid (DNA or RNA), not otherwise specified; amplified probe technique, each organism
87799	Infectious agent detection by nucleic acid (DNA or RNA), not otherwise specified; quantification, each organism
<i>Possible VZV test</i>	
87252	Virus isolation; tissue culture inoculation, observation, and presumptive identification by cytopathic effect
87254	Virus isolation; centrifuge enhanced (shell vial) technique, includes identification with immunofluorescence stain, each virus
87800	Infectious agent detection by nucleic acid (DNA or RNA), multiple organisms; direct probe technique
87801	Infectious agent detection by nucleic acid (DNA or RNA), multiple organisms; amplified probe(s) technique
88161	Cytopathology, smears, any other source; preparation, screening and interpretation
<i>Non-specific laboratory test</i>	
86317	Immunoassay for infectious agent antibody, quantitative, not otherwise specified
86318	Immunoassay for infectious agent antibody, qualitative or semiquantitative, single step method (eg, reagent strip)
86382	Neutralization test, viral
86403	Particle agglutination; screen, each antibody
86406	Particle agglutination; titer, each antibody
86790	Antibody; virus, not elsewhere specified
87015	Concentration (any type), for infectious agents
87081	Culture, presumptive, pathogenic organisms, screening only;
87140	Culture, typing; immunofluorescent method, each antiserum
87149	Culture, typing; identification by nucleic acid probe

87158	Culture, typing; other methods
87205	Smear, primary source with interpretation; Gram or Giemsa stain for bacteria, fungi, or cell types
87206	Smear, primary source with interpretation; fluorescent and/or acid fast stain for bacteria, fungi, parasites, viruses or cell types
87207	Smear, primary source with interpretation; special stain for inclusion bodies or parasites (eg, malaria, coccidia, microsporidia, trypanosomes, herpes viruses)
87253	Virus isolation; tissue culture, additional studies or definitive identification (eg, hemabsorption, neutralization, immunofluorescence stain), each isolate
87299	Infectious agent antigen detection by immunofluorescent technique; not otherwise specified, each organism
87300	Infectious agent antigen detection by immunofluorescent technique, polyvalent for multiple organisms, each polyvalent antiserum
87449	Infectious agent antigen detection by enzyme immunoassay technique qualitative or semiquantitative; multiple step method, not otherwise specified, each organism
87450	Infectious agent antigen detection by enzyme immunoassay technique qualitative or semiquantitative; single step method, not otherwise specified, each organism
87451	Infectious agent antigen detection by enzyme immunoassay technique qualitative or semiquantitative; multiple step method, polyvalent for multiple organisms, each polyvalent antiserum
87899	Infectious agent detection by immunoassay with direct optical observation; not otherwise specified
87999	Unlisted microbiology procedure
88104	Cytopathology, fluids, washings or brushings, except cervical or vaginal; smears with interpretation
88107	Cytopathology, fluids, washings or brushings, except cervical or vaginal; smears and simple filter preparation with interpretation
88160	Cytopathology, smears, any other source; screening and interpretation
88342	Immunohistochemistry (including tissue immunoperoxidase), each antibody
88346	Immunofluorescent study, each antibody; direct method
88347	Immunofluorescent study, each antibody; indirect

88348	method Electron microscopy; diagnostic
<b>Stroke</b>	
433.xx	Occlusion/stenosis of precerebral arteries
434.xx , except 434.1 (Cerebral embolism), 434.10 (Cerebral embolism without mention of cerebral infarction), 434.11 (Cerebral embolism with cerebral infarction)	Occlusion of cerebral arteries
436.xx	Acute cerebrovascular disease
437.xx [excluding 437.2 (hypertensive encephalopathy), 437.3 (cerebral aneurysm, nonruptured), 437.5 (Moyamoya disease), 437.6 (nonpyogenic thrombosis of intracranial venous sinus), 437.7 (transient global amnesia)]	Other and ill-defined cerebrovascular disease

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402 **Supplementary Appendix 2: List of NDC Codes<sup>a</sup>**

#	NDC Numbers	Drug Label
1	7411713	FAMVIR
2	37050105	XERESE
3	54011413	VALACYCLOVIR
4	54011513	VALACYCLOVIR
5	54019813	FAMCICLOVIR
6	78036615	FAMVIR
7	78036715	FAMVIR
8	78036815	FAMVIR
9	93725856	VALACYCLOVIR
10	93725898	VALACYCLOVIR
11	93725956	VALACYCLOVIR
12	93725998	VALACYCLOVIR
13	93811756	FAMCICLOVIR
14	93811856	FAMCICLOVIR
15	93811956	FAMCICLOVIR
16	93894001	ACYCLOVIR
17	93894005	ACYCLOVIR
18	93894093	ACYCLOVIR
19	93894301	ACYCLOVIR
20	93894305	ACYCLOVIR
21	93894701	ACYCLOVIR
22	93894705	ACYCLOVIR
23	93894793	ACYCLOVIR
24	172426660	ACYCLOVIR
25	172426670	ACYCLOVIR
26	172426760	ACYCLOVIR
27	172426770	ACYCLOVIR
28	172426860	ACYCLOVIR
29	172426870	ACYCLOVIR
30	173056500	VALTREX
31	173056502	VALTREX
32	173056504	VALTREX
33	173056510	VALTREX
34	173093303	VALTREX
35	173093308	VALTREX
36	173093310	VALTREX
37	173094555	ZOVIRAX
38	173094955	ZOVIRAX

#	NDC Numbers	Drug Label
39	173095396	ZOVIRAX
40	173099155	ZOVIRAX
41	173099341	ZOVIRAX
42	173099394	ZOVIRAX
43	228260511	ACYCLOVIR
44	228260611	ACYCLOVIR
45	228260711	ACYCLOVIR
46	364269001	ACYCLOVIR
47	378025301	ACYCLOVIR
48	378025305	ACYCLOVIR
49	378030201	ACYCLOVIR
50	378146801	ACYCLOVIR
51	378220001	ACYCLOVIR
52	378427505	VALACYCLOVI
53	378427577	VALACYCLOVI
54	378427593	VALACYCLOVI
55	378427677	VALACYCLOVI
56	378427693	VALACYCLOVI
57	472008216	ACYCLOVIR
58	591033501	ACYCLOVIR
59	591033505	ACYCLOVIR
60	591033601	ACYCLOVIR
61	591033605	ACYCLOVIR
62	591269201	ACYCLOVIR
63	591269205	ACYCLOVIR
64	591324830	VALACYCLOVIR
65	591324930	VALACYCLOVIR
66	591327230	FAMCICLOVIR
67	591327330	FAMCICLOVIR
68	781520831	VALACYCLOVIR
69	781520892	VALACYCLOVIR
70	781520931	VALACYCLOVIR
71	781520992	VALACYCLOVIR
72	781562231	FAMCICLOVIR
73	904612161	ACYCLOVIR
74	16714069701	VALACYCLOVIR
75	16714069702	VALACYCLOVIR
76	16714069703	VALACYCLOVIR
77	16714069801	VALACYCLOVIR

#	NDC Numbers	Drug Label
78	16714069802	VALACYCLOVIR
79	23155014601	ACYCLOVIR
80	45963055808	VALACYCLOVIR
81	45963055830	VALACYCLOVIR
82	45963055908	VALACYCLOVIR
83	45963055930	VALACYCLOVIR
84	49884056501	ACYCLOVIR
85	49884056601	ACYCLOVIR
86	49884056701	ACYCLOVIR
87	50383081016	ACYCLOVIR
88	51079087820	ACYCLOVIR
89	52544033501	UNKNOWN
90	52544033601	ACYCLOVIR
91	52959038421	VALTREX
92	55111055230	VALACYCLOVIR
93	55111055330	VALACYCLOVIR
94	55370055507	ACYCLOVIR
95	55370055607	ACYCLOVIR
96	55370055707	ACYCLOVIR
97	55390061210	ACYCLOVIR
98	55390061320	ACYCLOVIR
99	59762270301	FAMCICLOVIR
100	59762839801	VALACYCLOVIR
101	59762839802	VALACYCLOVIR
102	59762839901	VALACYCLOVIR
103	60429071301	ACYCLOVIR
104	60429071305	ACYCLOVIR
105	60505004206	ACYCLOVIR
106	60505530601	ACYCLOVIR
107	60505530608	ACYCLOVIR
108	60505530701	ACYCLOVIR
109	60505530705	ACYCLOVIR
110	61442011101	ACYCLOVIR
111	61442011201	ACYCLOVIR
112	61442011205	ACYCLOVIR
113	61442011301	ACYCLOVIR
114	61442011305	ACYCLOVIR
115	63304050401	ACYCLOVIR
116	63304050501	ACYCLOVIR

#	NDC Numbers	Drug Label
117	63304065201	ACYCLOVIR
118	63304065205	ACYCLOVIR
119	63304090430	VALACYCLOVIR
120	63304090530	VALACYCLOVIR
121	64455099394	ZOVIRAX
122	64455099395	ZOVIRAX
123	64455099442	ZOVIRAX
124	64455099445	ZOVIRAX
125	65862044830	VALACYCLOVIR
126	65862044930	VALACYCLOVIR
127	65862044990	VALACYCLOVIR
128	65862046630	FAMCICLOVIR
129	65862046730	FAMCICLOVIR
130	67253010010	ACYCLOVIR
131	67253010110	ACYCLOVIR
132	67253010111	ACYCLOVIR
133	67253010210	ACYCLOVIR
134	67253010250	ACYCLOVIR

403 Note: NDC, National Drug Code

404 <sup>a</sup>Each drug may have multiple NDC codes since each NDC code includes information on the  
405 manufacturer, repackager, distributor, specific strength, dosage form, and package sizes and types.

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407 **Supplementary Appendix 3: References related to varicella vaccination recommendations,**  
408 **varicella vaccination coverage, and school entry requirements in the United States**

### ACIP Varicella Vaccination Recommendations

- **1996 ACIP Recommendations:** <http://www.ncbi.nlm.nih.gov/pubmed/8668119>
- **2007 ACIP Recommendations:** <http://www.ncbi.nlm.nih.gov/pubmed/17585291>

### Varicella Vaccination Coverage

- **National Immunization Survey (NIS)- Children 19-35 months, 1997-2013:** <http://www.cdc.gov/vaccines/imz-managers/coverage/nis/child/index.html>
- **National Immunization Survey (NIS)- Adolescents/Teens 13-17 years, 2006-2013:** <http://www.cdc.gov/vaccines/imz-managers/coverage/nis/teen/index.html>
- **Immunization Information System (IIS) sentinel sites, 6 sites 2006-2012:** <http://www.ncbi.nlm.nih.gov/pubmed/24572613>
- **Kindergarten Survey, 2012-2013:** <http://www.ncbi.nlm.nih.gov/pubmed/23903595>

### Varicella School Entry Requirements

- **Lopez et al, 2-dose varicella elementary school requirements, 2007-2012:** <http://www.ncbi.nlm.nih.gov/pubmed/24572613>
- **Immunization Action Coalition varicella state mandates:** <http://www.immunize.org/laws/varicel.asp>
- **Immunization Action Coalition varicella two-dose requirements for child care and schools:** [http://www.immunize.org/laws/varicel\\_sec.asp](http://www.immunize.org/laws/varicel_sec.asp)

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