

5/22/2002

Sample Selection for MMR/Autism Study

Selection Criteria	Controls			Cases		
	Yes	No	No%	Yes	No	No%
Available Sample	2143			706		
Valid CASENUM	2113	30	1%	706	0	0%
Confirmed Autism Case	2113	0	0%	660	46	7%
Matched Cases and Controls	1912	201	10%	647	13	2%
Original 3 Controls	1891	21	1%	647	0	0%
Missing Age Data	1890	1	0%	647	0	0%
Missing MMR Vaccine Date (1,2)	1876	14	1%	629	18	3%

1) 11 controls were missing their entire vaccination record

2) 14 cases were missing their entire vaccination record

6/10/2014

Table 1: Descriptive Statistics For Entire Sample *

Variable	Category	Controls		Cases	
		N	Percent	N	Percent
Age 1996	3 - 5 yrs	635	34%	215	34%
	6 - 8 yrs	973	52%	321	51%
	9 - 10 yrs	268	14%	93	15%
	Total	1876	100%	629	100%
Sex	Male	1506	80%	505	80%
	Female	370	20%	124	20%
	Total	1876	100%	629	100%
Race	White	930	52%	336	55%
	Black	674	38%	232	38%
	Other	175	10%	40	7%
	Total	1779	100%	608	100%

* All subjects reported in table had date of receipt of MMR vaccine

* All cases are confirmed cases

6/10/2014

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Table 2a: Descriptive Statistics for Autism Cases

Conditions	Yes	%	No	%	Total
Cerebral Palsy	31	5%	598	95%	629
Mental Retardation	378	60%	251	40%	629
Visual Impairment	8	1%	621	99%	629
Hearing Impairment	7	1%	622	99%	629
Epilepsy	49	8%	580	92%	629
Birth Defects	5	1%	624	99%	629
Pre-Existing Conditions Before Age 1	222	35%	407	65%	629
Regression or Plateau	80	13%	549	87%	629

Table 3: Descriptive Statistics for Birth Certificate Variables

Variable	Category	Controls		Cases	
		N	Percent	N	Percent
Age in 1996	3 - 5 yrs	382	36%	127	35%
	6 - 8 yrs	552	53%	182	51%
	9 - 10 yrs	115	11%	50	14%
	Total	1049	100%	359	100%
Sex	Male	834	80%	286	80%
	Female	215	20%	73	20%
	Total	1049	100%	359	100%
Race	White	578	55%	201	56%
	Black	405	39%	139	39%
	Other	66	6%	19	5%
	Total	1049	100%	359	100%
Mothers Age	< 20 yrs	102	10%	16	4%
	20 - 34 yrs	823	78%	282	79%
	35+ yrs	124	12%	61	17%
	Total	1049	100%	359	100%
Maternal Race	White	618	59%	209	58%
	Black	399	38%	138	38%
	Other	30	3%	12	3%
	Total	1047	100%	359	100%
Maternal Educ	<= 12 yrs	485	46%	138	38%
	13 - 15 yrs	259	25%	100	28%
	16+ yrs	305	29%	121	34%
	Total	1049	100%	359	100%
Birth Weight	0 - 1499 gms	11	1%	12	3%
	1500 - 2499 gms	55	5%	37	10%
	2500 + gms	983	94%	310	86%
	Total	1049	100%	359	100%
Multiplicity	Singleton	1017	97%	333	93%
	Twin +	32	3%	26	7%
	Total	1049	100%	359	100%
Parity	1st Born	462	44%	151	42%
	2nd or Higher	578	56%	206	58%
	Total	1040	100%	357	100%

* All subjects reported in table had date of receipt of MMR vaccine

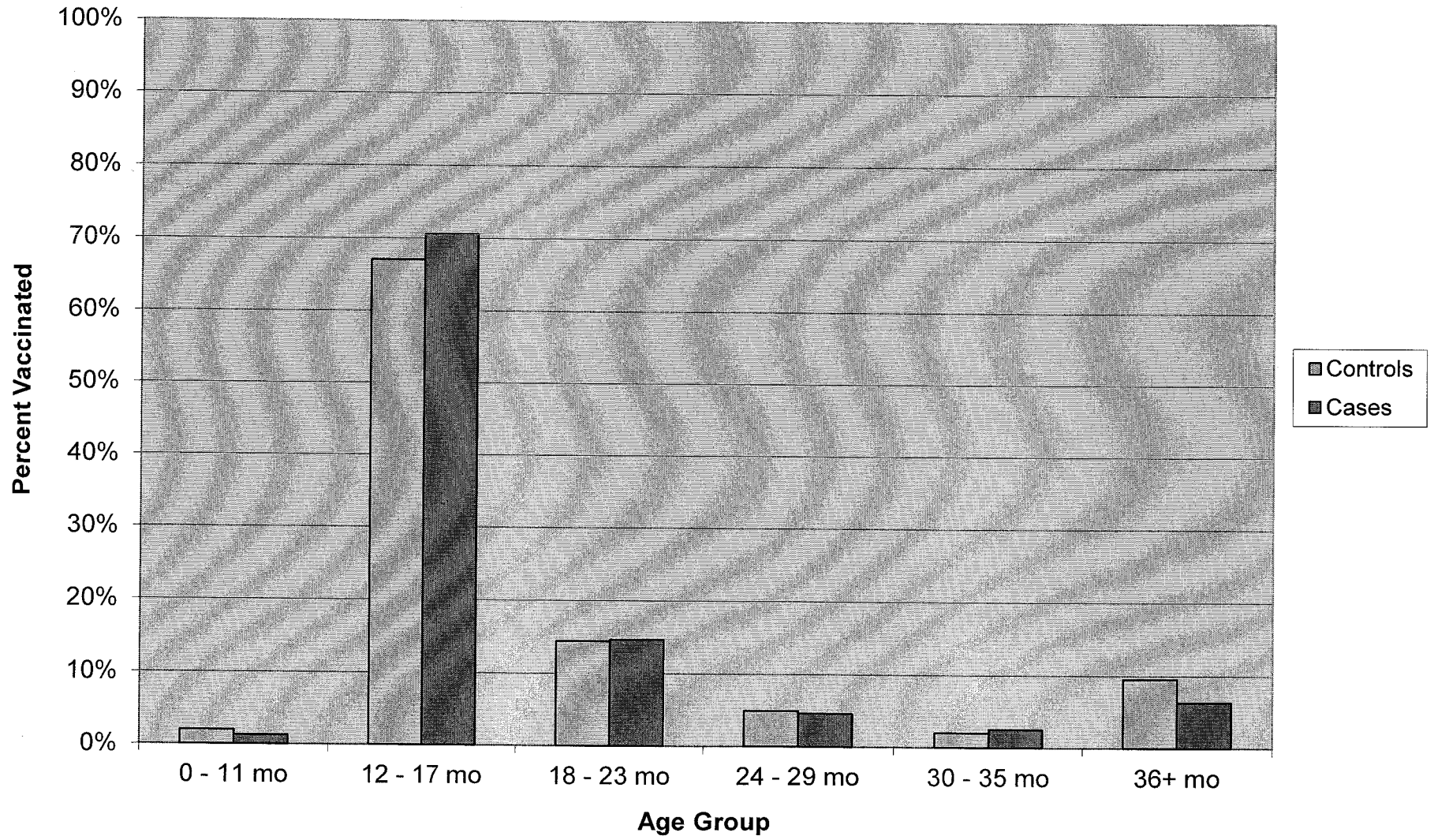
** All cases are confirmed cases

*** Subjects are unmatched. There are significantly fewer matched cases and controls

Table 4: Statistical Analyses

Sample	Exposure	Case Definitions	N	Crude OR			Adjusted OR		
				OR	L95CI	U95CI	OR	L95CI	U95CI
Total	MMR < 18 Mo	Total Matched Cases	629	1.13	0.92	1.39			
		No Pre-Existing Conditions Before Age 1 Year	407	1.11	0.86	1.43			
		Regression or Plateau	80	1.46	0.83	2.60			
	MMR < 24 Mo	Total Matched Cases	629	1.23	0.95	1.60			
		No Pre-Existing Conditions Before Age 1 Year	407	1.18	0.85	1.63			
		Regression or Plateau	80	1.45	0.69	3.04			
Birth Certificate	MMR < 18 Mo	Total Matched Cases	311	1.00	0.72	1.38	0.95	0.67	1.33
		No Pre-Existing Conditions Before Age 1 Year	116	1.12	0.74	1.68	1.08	0.70	1.65
		Regression or Plateau	31	1.02	0.39	2.67	---	---	---
	MMR < 24 Mo	Total Matched Cases	311	1.14	0.74	1.75	1.04	0.66	1.63
		No Pre-Existing Conditions Before Age 1 Year	116	1.18	0.67	2.06	1.11	0.62	2.00
		Regression or Plateau	31	0.93	0.27	3.25	---	---	---

Age of 1st MMR Vaccination by Case Status



Age Group	Controls	Controls	Cases	Cases
0 - 11 mo	37	2.0%	8	1.3%
12 - 17 mo	1258	67.1%	444	70.6%
18 - 23 mo	271	14.4%	92	14.6%
24 - 29 mo	93	5.0%	29	4.6%
30 - 35 mo	38	2.0%	16	2.5%
36+ mo	179	9.5%	40	6.4%
Total	1876	100.0%	629	100.0%

MMRC1	1	-0.0033	0.42895	0.0001	0.9939	1.00	0.43	2.31
MMRC2	1	0.51588	0.18883	7.4636	0.0063	1.68	1.16	2.43
MMRC3	1	0.32446	0.20107	2.6038	0.1066	1.38	0.93	2.05
MMRC4	1	0.31229	0.23199	1.812	0.1783	1.37	0.87	2.15
MMRC5	1	0.45219	0.24846	3.3124	0.0688	1.57	0.97	2.56

1.133 0.922 1.392
1.532 1.071 2.193

MMRC1	1	0.23687	0.8579	0.0762	0.7825	1.267	0.236	6.81
MMRC2	1	1.01753	0.39426	6.6607	0.0099	2.766	1.277	5.991
MMRC3	1	0.82215	0.41091	4.0031	0.0454	2.275	1.017	5.091
MMRC4	1	0.60296	0.479	1.5845	0.2081	1.828	0.715	4.673
MMRC5	1	0.95207	0.49387	3.7164	0.0539	2.591	0.984	6.821

1.206 0.84 1.73

2.527 1.179 5.413

MMRC1	1	0.25353	0.50422	0.2528	0.6151	1.289	0.48	3.462
MMRC2	1	0.60148	0.22673	7.0379	0.008	1.825	1.17	2.846
MMRC3	1	0.43439	0.23988	3.2791	0.0702	1.544	0.965	2.471
MMRC4	1	0.34649	0.27683	1.5666	0.2107	1.414	0.822	2.433
MMRC5	1	0.53671	0.29405	3.3314	0.068	1.71	0.961	3.044

MMRC1	1	-0.36457	0.87655	0.173	0.6775	0.694	0.125	3.871
MMRC2	1	0.30863	0.35119	0.7723	0.3795	1.362	0.684	2.71
MMRC3	1	0.18735	0.3697	0.2568	0.6123	1.206	0.584	2.489
MMRC4	1	0.15499	0.40435	0.1469	0.7015	1.168	0.529	2.579
MMRC5	1	0.39542	0.44137	0.8026	0.3703	1.485	0.625	3.527

MMRC1	1	-0.29528	0.86285	0.1171	0.7322	0.744	0.137	4.038
MMRC2	1	0.41639	0.33788	1.5187	0.2178	1.516	0.782	2.941
MMRC3	1	0.28976	0.35685	0.6593	0.4168	1.336	0.664	2.689
MMRC4	1	0.301	0.38834	0.6008	0.4383	1.351	0.631	2.893
MMRC5	1	0.43138	0.43118	1.0009	0.3171	1.539	0.661	3.584

1	37	8	45
2	1258	444	1702
3	271	92	363
4	93	29	122
5	38	16	54
6	179	40	219
	1876	629	2505

1	10	2	12
2	744	251	995
3	159	59	218
4	42	16	58
5	17	12	29

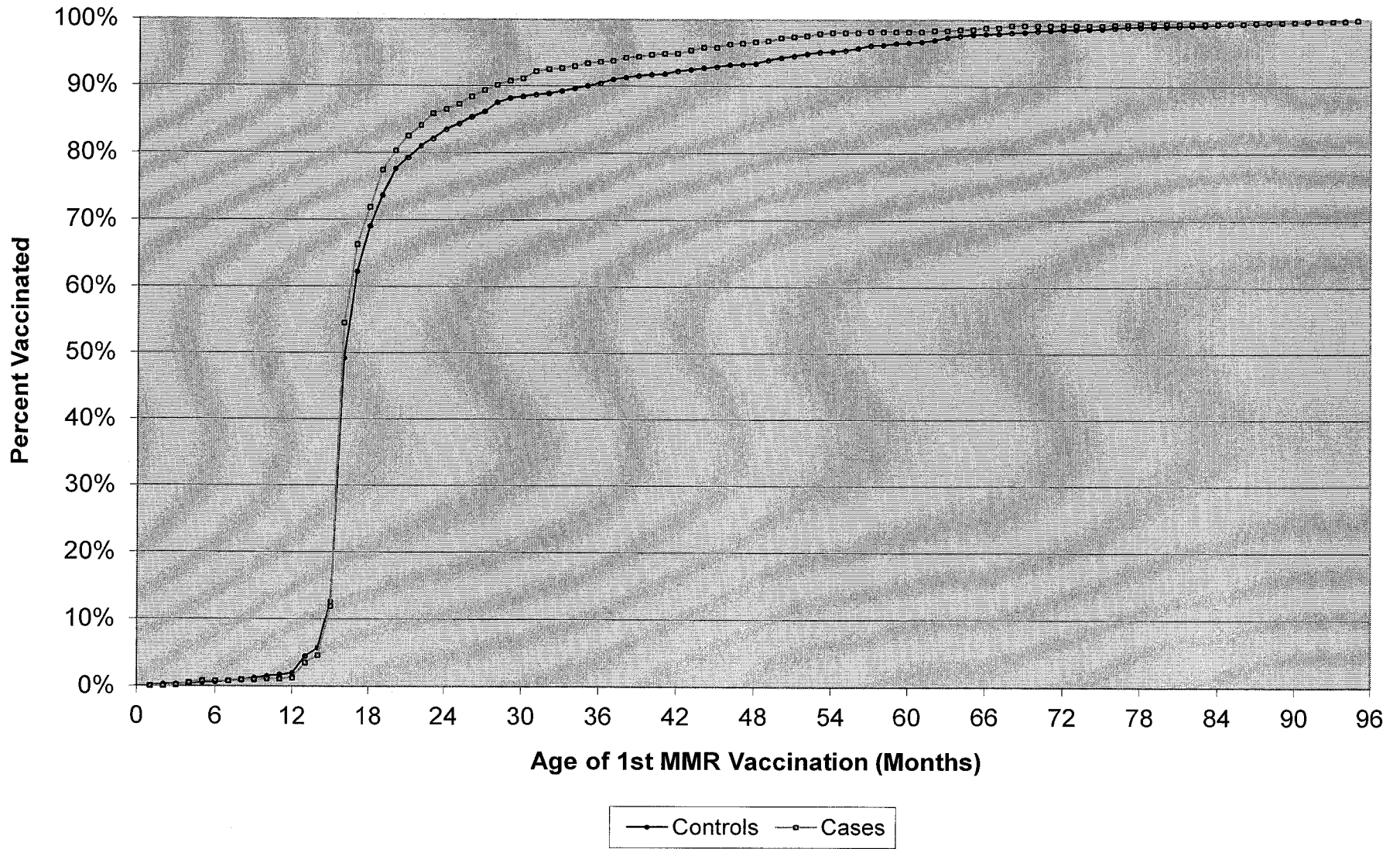
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Age of 1st MMR Vaccination by Case Status



Month	Control Freq	Control Cum Freq	Controls	Case Freq	Case Cum Freq	Cases	Case Freq	Case Cum Freq	Cases - No Pre-existing
0	1	1	0.1%	0	0	0.0%	0	0	0.0%
1	3	4	0.2%	0	0	0.0%	0	0	0.0%
2	1	5	0.3%	1	1	0.2%	1	1	0.2%
3	2	7	0.4%	2	3	0.5%	1	2	0.5%
4	3	10	0.5%	2	5	0.8%	1	3	0.7%
5	1	11	0.6%	0	5	0.8%	0	3	0.7%
6	4	15	0.8%	0	5	0.8%	0	3	0.7%
7	2	17	0.9%	1	6	1.0%	1	4	1.0%
8	6	23	1.2%	0	6	1.0%	0	4	1.0%
9	5	28	1.5%	1	7	1.1%	1	5	1.2%
10	4	32	1.7%	0	7	1.1%	0	5	1.2%
11	5	37	2.0%	1	8	1.3%	1	6	1.5%
12	47	84	4.5%	14	22	3.5%	9	15	3.7%
13	23	107	5.7%	7	29	4.6%	4	19	4.7%
14	131	238	12.7%	46	75	11.9%	32	51	12.5%
15	685	923	49.2%	268	343	54.5%	167	218	53.6%
16	245	1168	62.3%	74	417	66.3%	49	267	65.6%
17	127	1295	69.0%	35	452	71.9%	25	292	71.7%
18	87	1382	73.7%	35	487	77.4%	21	313	76.9%
19	74	1456	77.6%	18	505	80.3%	16	329	80.8%
20	31	1487	79.3%	14	519	82.5%	8	337	82.8%
21	33	1520	81.0%	10	529	84.1%	6	343	84.3%
22	20	1540	82.1%	11	540	85.9%	7	350	86.0%
23	26	1566	83.5%	4	544	86.5%	2	352	86.5%
24	16	1582	84.3%	5	549	87.3%	4	356	87.5%
25	19	1601	85.3%	7	556	88.4%	6	362	88.9%
26	15	1616	86.1%	6	562	89.3%	5	367	90.2%
27	26	1642	87.5%	5	567	90.1%	2	369	90.7%
28	12	1654	88.2%	4	571	90.8%	2	371	91.2%
29	5	1659	88.4%	2	573	91.1%	2	373	91.6%
30	5	1664	88.7%	7	580	92.2%	4	377	92.6%
31	3	1667	88.9%	2	582	92.5%	1	378	92.9%
32	7	1674	89.2%	1	583	92.7%	0	378	92.9%
33	8	1682	89.7%	2	585	93.0%	1	379	93.1%
34	7	1689	90.0%	3	588	93.5%	3	382	93.9%
35	8	1697	90.5%	1	589	93.6%	0	382	93.9%
36	10	1707	91.0%	1	590	93.8%	0	382	93.9%
37	6	1713	91.3%	3	593	94.3%	1	383	94.1%
38	5	1718	91.6%	1	594	94.4%	0	383	94.1%
39	3	1721	91.7%	2	596	94.8%	1	384	94.3%
40	2	1723	91.8%	1	597	94.9%	1	385	94.6%
41	8	1731	92.3%	0	597	94.9%	0	385	94.6%
42	4	1735	92.5%	3	600	95.4%	3	388	95.3%
43	5	1740	92.8%	3	603	95.9%	2	390	95.8%
44	3	1743	92.9%	0	603	95.9%	0	390	95.8%
45	6	1749	93.2%	3	606	96.3%	2	392	96.3%
46	1	1750	93.3%	1	607	96.5%	1	393	96.6%

47	2	1752	93.4%	1	608	96.7%	1	394	96.8%
48	10	1762	93.9%	1	609	96.8%	0	394	96.8%
49	7	1769	94.3%	3	612	97.3%	3	397	97.5%
50	5	1774	94.6%	1	613	97.5%	1	398	97.8%
51	6	1780	94.9%	1	614	97.6%	1	399	98.0%
52	5	1785	95.1%	2	616	97.9%	1	400	98.3%
53	1	1786	95.2%	1	617	98.1%	1	401	98.5%
54	4	1790	95.4%	0	617	98.1%	0	401	98.5%
55	6	1796	95.7%	0	617	98.1%	0	401	98.5%
56	8	1804	96.2%	1	618	98.3%	1	402	98.8%
57	1	1805	96.2%	0	618	98.3%	0	402	98.8%
58	5	1810	96.5%	0	618	98.3%	0	402	98.8%
59	2	1812	96.6%	0	618	98.3%	0	402	98.8%
60	2	1814	96.7%	0	618	98.3%	0	402	98.8%
61	5	1819	97.0%	1	619	98.4%	1	403	99.0%
62	8	1827	97.4%	0	619	98.4%	0	403	99.0%
63	5	1832	97.7%	1	620	98.6%	0	403	99.0%
64	3	1835	97.8%	0	620	98.6%	0	403	99.0%
65	2	1837	97.9%	2	622	98.9%	0	403	99.0%
66	1	1838	98.0%	0	622	98.9%	0	403	99.0%
67	3	1841	98.1%	2	624	99.2%	2	405	99.5%
68	1	1842	98.2%	0	624	99.2%	0	405	99.5%
69	4	1846	98.4%	0	624	99.2%	0	405	99.5%
71	1	1847	98.5%	0	624	99.2%	0	405	99.5%
72	2	1849	98.6%	0	624	99.2%	0	405	99.5%
74	1	1850	98.6%	0	624	99.2%	0	405	99.5%
79	1	1851	98.7%	0	624	99.2%	0	405	99.5%
80	1	1852	98.7%	0	624	99.2%	0	405	99.5%
82	3	1855	98.9%	1	625	99.4%	1	406	99.8%
83	2	1857	99.0%	0	625	99.4%	0	406	99.8%
85	0	1857	99.0%	1	626	99.5%	0	406	99.8%
88	1	1858	99.0%	0	626	99.5%	0	406	99.8%
89	1	1859	99.1%	0	626	99.5%	0	406	99.8%
90	1	1860	99.1%	0	626	99.5%	0	406	99.8%
91	1	1861	99.2%	0	626	99.5%	0	406	99.8%
92	1	1862	99.3%	0	626	99.5%	0	406	99.8%
93	2	1864	99.4%	0	626	99.5%	0	406	99.8%
97	1	1865	99.4%	0	626	99.5%	0	406	99.8%
98	1	1866	99.5%	0	626	99.5%	0	406	99.8%
100	1	1867	99.5%	1	627	99.7%	0	406	99.8%
112	1	1868	99.6%	0	627	99.7%	0	406	99.8%
113	1	1869	99.6%	0	627	99.7%	0	406	99.8%
117	1	1870	99.7%	0	627	99.7%	0	406	99.8%
118	1	1871	99.7%	1	628	99.8%	1	407	100.0%
125	1	1872	99.8%	0	628	99.8%	0	407	100.0%
126	1	1873	99.8%	0	628	99.8%	0	407	100.0%
129	2	1875	99.9%	0	628	99.8%	0	407	100.0%
Not Total	1 1876	1876	100.0%	1 629	629	100.0%	0 407	407	100.0%